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Analysis of the Effects of Digital Transformation on Business Performance: The Case of Istanbul Beylikdüzü Organized Industry

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ABSTRACT

Purpose - The purpose of this paper is to analyze the effects of digital transformation practices on the performance of businesses.

Design/methodology/approach - The population of this research is 1870 enterprises operating in Istanbul Beylikdüzü Organized Industrial Union Industrial Site and 520 people were surveyed. As a method in the research, deductive method in the conceptual part and quantitative methods in the application part, "relational survey" model was taken as basis in order to analyze cause and effect relationships and the survey participants were determined by simple random sampling method.

Findings – Contribution to personal development variable has a negative effect on business performance;

The contribution to career development variable has a positive effect and the contribution to work productivity variable has a positive effect.

Discussion – The advantages offered by informatics technologies provide significant benefits to the production of goods and services of enterprises. In this context, the ability of enterprises to increase their profitability and market shares in a global context supports the formation of important developments in the economy. For this reason, in this research, it is thought that investigating the effects of informatics technologies on the performance of enterprises will contribute to the field.

1. Introduction

This study analyzes the effects of digital transformations on the performance of businesses. As it is known, businesses can maintain their profitability and sustainability to the extent that they can adapt information technologies to their structure in global competitive markets.

Performance measurement is seen as an important application in determining the future of businesses, ensuring continuity, and making the right investment decisions. Performance measurements fulfill important functions in achieving the goals of businesses, evaluating the work done, identifying deficiencies, recognizing their mistakes, and using their resources economically. In other words, performance measurements should be made in order to evaluate the effectiveness and efficiency of businesses. In the past, while businesses were making performance measurements focused on profit, market share and efficiency, later with the development of technology, they turned to issues such as customer satisfaction, meeting customer needs, ensuring continuity and stability (Bayyurt, 2011: 586).

Globalization in the world has put increasing pressure on businesses in the area of digital transformations. This requires businesses to integrate efficiently not only to survive but also to thrive in competitive environments. Efficient integration can only be achieved through digital processes and collaborative tools. Increasing competition in markets has increased the importance of Digital Transformation DTs, making it imperative to incorporate DTs into existing business processes (Bouncken et al., 2021: 1).

2. DIGITAL TRANSFORMATION OF CONCEPTUAL FRAMEWORK

Digital Transformation DT is defined as the use of new digital technologies that deliver significant business improvements and impact all aspects of customers' lives (Reis et al., 2018: 417). Digital Transformation (DT) refers to fundamental changes in society and industries through the use of high-level, digital technologies (Hess et al., 2016: 123). Digital transformation activities include the digitization of sales and communication

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channels that provide new ways to interact with customers and the digitization of a business' offerings of products and services that replace or augment physical offerings (Haffke et al., 2016: 1). Digital transformations therefore support the implementation of digital business models that enable tactical and strategic business moves triggered by data-driven insights and new ways of capturing value (Horlach et al., 2017: 5420).

In order to effectively implement digital transformations in businesses, digital literacy must be at the best level for employees. The skills that facilitate the understanding and use of developing digital transformations are called digital literacy. In this context, the rapid development of digital technologies in the digital age confronts individuals with situations that require the use of an increasing variety of technical, cognitive and sociological skills necessary to perform and solve problems in digital environments, making it imperative for employees to develop their literacy competencies (Bangert-Drowns et al., 2002: 1922).

2.1. Dimensions of Digital Transformation

The dimensions of digital transformation are listed as contribution to personal development, contribution to career development and contribution to work efficiency (Kumar, 2016: 10).

2.1.1. Contribution to Personal Development

While digital transformations offer lifelong learning opportunities (Prozorova, et al., 2021: 1581), they also contribute to personal development in many areas such as increasing competencies, being aware of new developments, and improving skills with technology support (Vuorikari, & Punie, 2019: 1).

2.1.2. Contribution to Career Development

Digital transformations cause individuals to improve themselves, set new goals, follow education and training programs, develop their competencies and increase their performance (Yankın, 2019: 15).

2.1.3. Contribution to Work Productivity

The introduction of modern digital technologies into the field of Human Resources (HR) allows for more effective management of labor productivity and human potential processes of the organization, as well as creating a digital environment for personnel communication (Bannikov and Abzeldinova, 2021: 54).

3. BUSINESS PERFORMANCE CONCEPTUAL FRAMEWORK

The total economic results of the activities undertaken by an organization represent business performance (Cano, 2014: 58-68). In other words, the level of outputs achieved by businesses in certain periods is the degree of realization of goals and objectives (Öncü et al., 2015: 150). Digital transformation to improve business performance refers to rethinking how a company uses information technologies and other organizational resources to fundamentally change and gain sustainable competitive advantages (Day, 1984: 16). The main purpose of businesses is not only to increase the performance of their employees for a short period of time, but also to ensure that they produce high performance for a long time. Therefore, it is necessary to pay attention to increasing organizational commitment (Stup, 2006: 1).

3.1. Business Performance Criteria

The performance of businesses can be measured by objective criteria such as sales volume, profitability and market share, as well as subjective criteria such as employee satisfaction, customer satisfaction and supplier satisfaction (Atalay et al., 2013: 228). In addition to accounting-based financial criteria such as sales growth and profitability (Lin et al., 2009: 922) return on investment, return on sales, return on equity and earnings per share, qualitative criteria such as non-financial market share, introduction of new products to the market, product quality, marketing activity, technological activity are also taken into consideration to measure business performance (Venkatraman and Ramanujam, 1986: 801).

finansal teknolojilerin ve dijital platformların piyasa likiditesi, işlem hacmi ve yatırımcı davranışları üzerindeki rolü değerlendirilebilir.

Finansal olarak da dijital alanların piyasa likiditesi, işlem hacmi ve yatırımcılarına yönelik davranışsal süreçler hakkında bilgi sahibi de olunmaktadır.

In the digital age, the use of informatics systems in performance evaluation is becoming widespread. Because the success of businesses becomes evident thanks to electronic informatics management systems that are independent from human beings and fully effective in obtaining informatics about business and employee performance with zero error. In business performance, which is difficult to measure; besides criteria such as customer satisfaction and quality, criteria such as sales level, profitability, turnover rate, productivity, market share are used Variables such as market share and profitability from the data here may have been left out of the focus of the study as they may have indirect effects. Since such variables are business-specific and sensitive data, it will be difficult to obtain such information reliably. Financially, information is also gained about the market liquidity of digital areas, transaction volume and behavioral processes for investors (Yüzbaşıoğlu, 2025). If they have a high correlation with other variables such as sales level or productivity, they may cause multicollinearity between the variables in the model and affect the accuracy of the results. (Barazandeh et. al. 2015).

3.1.1. Organizational Commitment

The relationship between organizational commitment and job performance is increasingly becoming an area of interest for businesses. There is extensive evidence of the apparent benefits of employee organizational commitment and its impact on both individual and organizational performance (Pinho et al., 2014: 374). Organizational commitment affects organizational performance because highly committed employees perform their services with enthusiasm and more willingly work towards organizational goals (Kim et al., 2005: 173). It is stated that organizational commitment has a positive effect on the performance of businesses (Rashid et al., 2003: 708).

3.1.2. Employee Productivity

Employee productivity leads to profitability of enterprises, revitalization of sectors, growth of the economy and increase in investments. In countries with developed economies, wages are higher and employment opportunities are much higher (Hill et al., 2014: 8). In this context, the fact that employees fulfill their duties in the best way and work with high performance refers to their productivity. Employee productivity is related to individuals' level of education, knowledge, skills, experience, commitment to work and organizational climate (Köksal, 2008: 36).

3.1.3. Full Utilization of Operating Capacity

Developments such as the use of digital technologies in businesses, superiority in competition in the market, customer satisfaction, and superior market share are the criteria that enable businesses to operate at full capacity. In addition, for full capacity utilization, enterprises should have a high quality, work-dependent, purpose-oriented and participatory understanding of their employees (Eğilmez, 2012: 2).

3.1.4. Low Labor Turnover

It is stated that employees with high levels of organizational commitment are more likely to participate in the organization and production and perform better in the organization than those without (Yalçın and İplik, 2005: 396). Generally, the positive behaviors of employees with high levels of organizational commitment towards the organization are accepted as appropriate behaviors that ensure organizational efficiency. For example, high levels of organizational commitment are believed to be associated with low turnover, less tardiness, low absenteeism and high job performance. While job satisfaction, motivation, participation in decisions and desire to stay in the organization are positively related to commitment, job turnover and absenteeism are the most important behavioral outcomes negatively related to commitment (Agwu, 2013: 35).

3.1.5. Ensuring Employee Motivation

He argues that there is an inevitable link between motivation and job satisfaction and between motivation and employee engagement (Dacre and Sewell, 2007: 277). Motivation is basically a force that enables an individual to act towards a specific goal in order to facilitate behavioral change. Therefore, motivated employees are more likely to be committed to their jobs and their work than less motivated employees (Grant, 2008: 108).

Business managers need to fulfill motivational practices at every stage in order to increase the motivation of employees. tangible and intangible motivational practices increase employees' productivity in their current jobs, their attendance to work, their commitment to work and their participation in decisions (Çavdar & Çavdar, 2010: 79).

3.1.6. Making Team Work

Teamwork is defined as a working process that has a common goal and in which members develop mutual relationships to accomplish tasks. For the group to be successful, individuals need to cooperate effectively with each other (Brown, 2010: 150). Effective teamwork allows employees to have more opportunities on how to perform their work tasks (Katzenbach & Smith, 2015: 26) and how to organize their daily work tasks (Ilhan & İnce, 2015: 128).

3.1.7. Innovation

A good communication and innovation process is needed for effective knowledge management (Huang and Li, 2009: 285). For this reason, it has become a necessity for businesses to use innovation as a competitive tool in producing new products and entering new markets in order to gain superiority over their competitors in the globalizing world (Liao and Rice, 2010: 117).

Innovation is a vital element of the modern economy, critical to the competitiveness of businesses, sectors and nations (Kılınç, (2021: 131). There has been extensive theoretical work on the innovation potential of Information and Communication Technologies (ICTs); based on a rich theoretical discussion, it is argued that ICTs have great potential to enable and drive significant innovations in firms' business processes, products and services, which in turn significantly improve their business performance (Droege et al., 2009: 153).

4. METHOD

In this study, the "relational survey" method was preferred in order to reveal cause and effect relationships.

4.1. Research Model

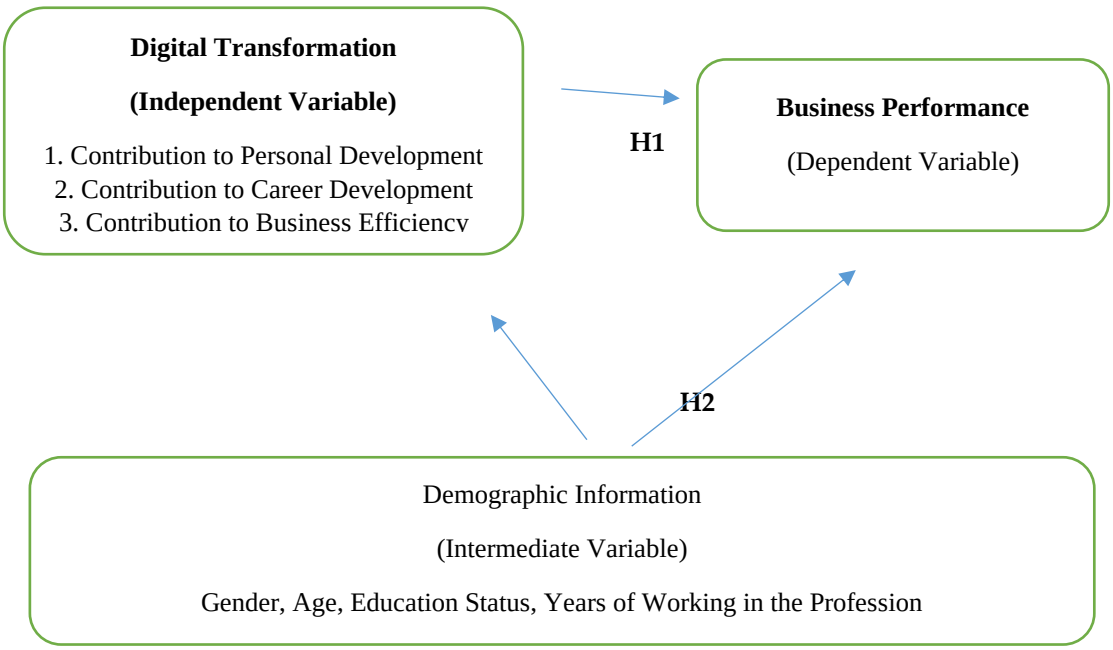

Figure -1. Theoretical Research Model for the Relationship between Demographic Characteristics (Control Variable), Digital Transformation (Independent Variable) and Business Performance (Dependent Variable)

Hypotheses

Main Hypothesis, H1: Digital transformation affects business performance.

Main Hypothesis, H2: There is a statistical difference between demographic characteristics, digital transformation and business performance.

Sub Hypotheses, H2:

H2a: There is a statistical difference between "digital transformation" and "Business Performance" in terms of gender variable.

H2b: There is a statistical difference between "digital transformation" and "Business Performance" in terms of age variable.

H2c: There is a statistical difference between "digital transformation" and "Business Performance" in terms of educational status.

H2d: There is a statistical difference between "digital transformation" and "Business Performance" in terms of years of employment.

4.2. Population and Sample

The population of this research is 1870 enterprises operating in Istanbul Beylikdüzü Organized Industrial Union Industrial Site, 520 people were surveyed and the obtained data were analyzed using the SPSS 21 statistical program.

4.3. Data Collection Tools

The questionnaire of this study consists of three parts; the first part includes demographic characteristics, the second part includes questions related to the "Digital Transformation Scale" and the third part includes questions related to the "Business Performance Scale" and the information about the scales is as follows;

4.4. Digital Transformation *Scale*

In this study, the "digital transformation scale" developed by (Kumar, 2016: 10) and translated into Turkish by (Demirel, 2019: 2960) was used. It was stated that the Cronbach's Alpha coefficient value of the scale was found to be highly reliable at 0.927. The scale was prepared according to the 5-point Likert method and consists of 3 dimensions and 11 items, among these dimensions; the contribution to personal development dimension consists of 12 items, the contribution to career development dimension consists of 3 items and the contribution to work efficiency consists of 3 items. Participants' response options are as follows; "(1) Strongly disagree, (2) Disagree, (3) Undecided, (4) Agree, (5) Strongly agree".

4.5. Business Performance Scale

In this study, the "Business Performance Scale" developed by (Demirel, 2008: 98) was used and it was stated that the Cronbach's Alpha coefficient value was 0.925 and it was highly reliable. The scale is prepared according to the 5-point Likert method, 1 dimension consists of 11 items and the participants' response options are; (1) Very Negative (2) Negative (3) Neither Positive nor Negative (4) Positive (5) Very Positive".

5. METHOD

In order to obtain the research data, the data obtained from the questionnaires were uploaded to the excel cable and the results obtained by performing "reliability analysis", "Frequency Analysis", "Correlation", "Regression" and "Difference Analysis" in the SPSS 21 statistical program are given below.

6. DATA ANALYSIS AND FINDINGS

Demographic questions were used in part 1, "digital transformation scale" in part 2 and "business performance scale" in part 3 of the questionnaire application in order to realize the purpose of the study. In this context, the results obtained by conducting "reliability", "frequency", "regression", "correlation" and "difference analysis" with IBM SPSS 21 program using the questionnaires made for the study are given below.

6.1. Reliability Analysis

Reliability analysis findings related to the study;

Table 1. Reliability Analysis Findings for Digital Transformation and Business Performance Scales

Scale	Size	Dimension Reliability	Scale Reliability
"Digital Transformation"	"Contribution to Personal Development"	0,801	0,830
	"Contribution to Career Development"	0,846	
	"Contribution to Business Efficiency"	0,881	
"Business Performance"	"Business Performance"	0,850	0,850

In this research, the reliability coefficients of both scales and dimensions were analyzed. The calculated Cronbach's Alpha coefficients are summarized in the table above. When these calculated values are examined, it is seen that the smallest reliability coefficient for the dimensions is 0.801. Although it is the smallest value, it is a value that shows that the "Contribution to Personal Development" dimension is quite reliable. In addition, when the Cronbach's Alpha values calculated for the "Digital Transformation" (α=0.830) and Business Performance (α=0.850) scales are examined, it is seen that the scales are quite reliable.

6.2. Frequency Analysis

In this part of the study, the findings related to the variables "Gender", "Age", "Educational Status" and "Length of Service", which belong to demographic data, are presented.

Table 2. Findings on Demographic Variables

		Frequency	Percentage (%)
"Gender"	"Woman."	168	42,0
	"Male."	232	58,0
"Age"	"18-26 years old"	108	27,0
	"27-35 years old"	170	42,5
	"36-44 years old"	41	10,3
	"45-53 years old"	62	15,5
	"Over 54"	19	4,8
"Education Status"	"Primary Education"	7	1,8
	"Associate Degree"	85	21,3
	"License"	57	14,3
	"Master's degree"	173	43,3
	"PhD."	78	19,5
"Length of Service"	"0-9 Years"	202	50,5
	"Between 10-19 Years"	157	39,3
	"Between 20-29 Years"	34	8,5
	"30-39 Years"	7	1,8

When the demographic findings of the participants were examined, it was observed that 168 people (42.0%) were "Female" and 232 people (58.0%) were "Male"; 108 people (27.0%) were between the ages of 18-26, 170 people (42.5%) were between the ages of 27-35, 41 people (10.3%) were between the ages of 36-44, 62 people (15.5%) were between the ages of 45-53, and 19 people (4.8%) were over the age of 54. It was determined that 7 (1,8%) of the participants had "primary education", 85 (21,3%) "associate degree", 57 (14,3%) "bachelor's degree", 173 (43,3%) "graduate degree" and 78 (19,5%) "doctorate degree". When the length of service was analyzed, it was observed that 202 people (50.5%) had 0-9 years of service, 157 people (39.3%) had 10-19 years of service, 34 people (8.5%) had 20-29 years of service and 7 people (2.6%) had 30-39 years of service.

6.3. Correlation Analyses

In the analyses, the relationships between the variables of the study were analyzed. For the ordinal values found in the analyses, -1 is strong in a negative direction, plus one is strong in a positive direction, and for the value of 0 it is decided that there is no relationship between the variables.

Table 3. Correlation Analysis Findings for Digital Transformation and Business Performance

	Contribution to Personal Development	Contribution to Career Development	Contribution to Business Efficiency	Business Performance
Contribution to Personal Development	1			
Contribution to Career Development	0,770	1		
Contribution to Business Efficiency	0,673	0,841	1	
Business Performance	0,544	0,796	0,905	1

When the analysis findings related to the effects of "Digital Transformation" and "Business Performance" factors on each other are examined; it is determined that there is a strong and positive relationship between the correlation coefficient values. For example, there is a positive relationship between "Contribution to Business Efficiency" and "Business Performance" (r = 0.905). Looking at the other findings in the table, it can be said that the lowest correlation coefficient is 0.544 and this value means that there are relationships between variables. After observing the existence of relationships between variables, regression analysis was performed to determine the rates of influence of these variables on each other.

6.4. Regression Analysis

The equation to be used for regression analysis is "$Y= \beta + \beta X_{0i\,i} + \varepsilon_{i}''$ (1)

In this formula, "X_i is the i. independent variable", "Y is the dependent variable", "β_i is the coefficient of the i. independent variable", "ε_i is the error term of the i. dependent variable" and "β_0 is the constant coefficient value".

First, regression analysis results related to the hypothesis H1: "Digital transformation has an impact on business performance" are presented below.

Table 4. Regression Analysis Table on the Effects of Digital Transformation on Business Performance

	Dimensions	**"Business Performance"**	
		β	**P**
	Constant Coefficient	-0,045	0,728
"Digital Transformation"	"Contribution to Personal Development"	-0,219	0,000
	"Contribution to Career Development"	0,272	0,000
	"Contribution to Business Efficiency"	0,823	0,000
Model Significance Description Percentage		(Sig.)=0.000 (r^2) = 0.842	

It was determined that "Contribution to Personal Development" (p=0.000), "Contribution to Career Development" (p=0.000) and "Contribution to Work Productivity" (p=0.000) factors had an effect on the dependent variable "Business Performance" and the related hypothesis was accepted (p<0.05). The regression equation created with the accepted variables is as follows.

$Y= \beta + \beta X + \beta X_{0112233} =$ X + β"Business Performance" = - 0,219 "Contribution to Personal Development" + 0,272 "Contribution to Career Development" + 0,823 "Contribution to Business Productivity"

On "Business Performance" as a result;

-The "Contribution to Personal Development" variable has a negative direction of 21.9% (when "Contribution to Personal Development" increases by 1 unit, "Business Performance" decreases by 0.219 units)

- "Contribution **to** Career **Development**" variable has a positive direction of 27.2% (when "Contribution to Career Development" increases by 1 unit, "Business Performance" increases by 0.272 units)

- "Contribution to Business Productivity" variable has a positive effect of 82.3% (when "Communication" increases by 1 unit, "Business Performance" increases by 0823 units*).*

6.5. Difference Analyses

Findings related to the hypothesis "**H2:** There is a difference between digital transformation and business performance in terms of demographic variables";

6.5.1. Differences in Digital Transformation and Business Performance by Gender

"**H2a**: There is a difference between Digital Transformation and business performance in terms of gender variable".

Table 5. t-Test Results for the Relationship between Gender and Digital Transformation and Business Performance

	Levels	"Gender"	N	Mean	t Value	p Value	Hypothesis
"Digital Transformation"	"Contribution to Personal Development"	"Woman."	168	4,2857	0,182	0,856	H2 Rejected
		"Male."	232	4,2766			
	Contribution to my "Career Development"	"Woman."	168	4,0417	0,127	0,899	H2 Rejected
		"Male."	232	4,0330			
	"Contribution to Business Efficiency"	"Woman."	168	4,2222	0,641	0,522	H2 Rejected
		"Male."	232	4,1925			
"Business Performance"	"Business Performance"	"Woman."	168	4,1418	0,491	0,624	H2 Rejected
		"Male."	232	4,1134			

As a result of the analysis, it was determined that "Contribution to Personal Development" (p=0.856), "Contribution to Career Development" (p=0.899), "Contribution to Work Productivity" (p=0.522) and "Business Performance" (p=0.624) did not differ according to gender (p>0.05).

6.5.2. Differences in Digital Transformation and Business Performance by Age

"H2b: There is a difference between digital transformation and business performance in terms of age" hypothesis;

Table 6. f-Test Results for the Relationship between Age and Digital Transformation and Business Performance

	Levels	"Age"	N	Mean	f Value	p Value	Hypothesis
"Digital Transformation"	"Contribution to Personal Development"	18-26 Years	108	4,3040	,964	0,427	H2 Rejected
		27-35 Years	170	4,2569			
		36-44 Years	41	4,2967			
		45-53 Years	62	4,3441			
		Over 54 Years	19	4,1140			
	"Contribution to Career Development"	18-26 Years	108	4,0494	1,793	0,129	H2 Rejected
		27-35 Years	170	4,0490			
		36-44 Years	41	3,9919			
		45-53 Years	62	4,1237			
		Over 54 Years	19	3,6667			
	"Contribution to Business Efficiency"	18-26 Years	108	4,2191	1,503	0,201	H2 Rejected
		27-35 Years	170	4,2020			
		36-44 Years	41	4,2276			

		45-53 Years	62	4,2473			
		Over 54 Years	19	3,9649			
"Business Performance"	**"Business Performance"**	18-26 Years	108	4,1389	0,723	0,576	H2 Rejected
		27-35 Years	170	4,1355			
		36-44 Years	41	4,1220			
		45-53 Years	62	4,1422			
		Over 54 Years	19	3,9091			

As a result of the analysis, it was determined that "Contribution to Personal Development" (p=0.856), "Contribution to Career Development" (p=0.899), "Contribution to Work Productivity" (p=0.522) and "Business Performance" (p=0.624) did not differ according to age (p>0.05).

6.5.3. Differences in Digital Transformation and Business Performance by Educational Background

"H2c: There is a difference between digital transformation and business performance in terms of education level" hypothesis;

Table 7 Findings of f-Test for the Relationship between Education Level and Digital Transformation and Business Performance

	Levels	"Education"	N	MEAN	f Value	p Value	Hypothesis
"Digital Transformation"	**"Contribution to Personal Development"**	Primary education	7	4,1667	0,386	0,818	H2 Rejected
		Associate Degree	85	4,2902			
		License	57	4,2749			
		Master's Degree	173	4,2592			
		PhD	78	4,3312			
	"Contribution to Career Development"	Primary education	7	3,9524	0,179	0,949	H2 Rejected
		Associate Degree	85	4,0353			
		License	57	4,0292			
		Master's Degree	173	4,0193			
		PhD	78	4,0897			
	"Contribution to Business Efficiency"	Primary education	7	4,1905	0,477	0,753	H2 Rejected
		Associate Degree	85	4,2118			
		License	57	4,2222			
		Master's Degree	173	4,1734			
		PhD	78	4,2564			
"Business Performance"	**"Business Performance"**	Primary education	7	4,2597	0,295	0,881	H2 Rejected
		Associate Degree	85	4,1041			
		License	57	4,1611			
		Master's Degree	173	4,1046			
		PhD	78	4,1562			

As a result of the analysis, it was determined that "Contribution to Personal Development" (p=0,856), "Contribution to Career Development" (p=0,899), "Contribution to Work Productivity" (p=0,522) and "Business Performance" (p=0,624) did not differ according to educational status (p>0,05).

6.5.4. Differences in Digital Transformation and Business Performance According to Length of Professional Service

Findings related to the hypothesis "H2d: There is a difference between digital transformation and business performance in terms of length of professional service";

Table 8 Findings of f-Test for the Relationship between Length of Professional Service and Digital Transformation and Business Performance

	Levels	"Length of Service"	N	Mean	f Value	p Value	Hypothesis
"Digital Transformation"	"Contribution to Personal Development"	0-9 Years	202	4,2756	1,655	0,160	H2 Rejected
		Between 10-19 Years	157	4,2792			
		Between 20-29 Years	34	4,3431			
		30-39 Years	5	3,8667			
		40 Years and Over	2	4,8333			
	"Contribution to Career Development"	0-9 Years	202	4,0314	1,246	0,291	H2 Rejected
		Between 10-19 Years	157	4,0403			
		Between 20-29 Years	34	4,1078			
		30-39 Years	5	3,4667			
		40 Years and Over	2	4,5000			
	"Contribution to Business Efficiency"	0-9 Years	202	4,2096	0,796 ,	0,528 ,	H2 Rejected
		Between 10-19 Years	157	4,1847			
		Between 20-29 Years	34	4,2843			
		30-39 Years	5	4,0000			
		40 Years and Over	2	4,5000			
"Business Performance"	"Business Performance"	0-9 Years	202	4,1274	678	607	H2 Rejected
		Between 10-19 Years	157	4,1015			
		Between 20-29 Years	34	4,2273			
		30-39 Years	5	3,9455			
		40 Years and Over	2	4,5000			

As a result of the analysis, it was determined that "Contribution to Personal Development" (p=0,856), "Contribution to Career Development" (p=0,899), "Contribution to Work Productivity" (p=0,522) and "Business Performance" (p=0,624) did not differ according to length of service (p>0,05).

7. DISCUSSION

It shows that businesses that adopt digital tools and technologies experience significant improvements in operational efficiency. This is in line with global studies that suggest that digitalization leads to smoother operations, less human error, and faster decision-making processes. In the case of Beylikdüzü, industrial firms that implement ERP (Enterprise Resource Planning), automated production systems, and advanced data analytics show faster production times and reduced operational costs. However, the success of these initiatives largely depends on the degree of adaptation and digital literacy of employees. Companies that invest in continuous training for their employees show better results than those that simply implement technological changes without addressing the human factor. This finding is in line with previous studies that emphasize that successful digital transformation requires a balance between technology adoption and human resource development. While technology encourages economic growth, digitalization contributes to economic performance through production, employment and technological developments (Yüzbaşıoğlu, 2023). Digital transformation has also contributed to increased market competition among businesses in the region. Firms that leverage digital marketing, e-commerce platforms, and CRM (Customer Relationship Management) systems have shown significant growth in customer acquisition and retention. The ability to reach broader audiences and personalize marketing efforts based on data insights has given these businesses a competitive advantage in local and international markets. This aligns with broader industry trends where digital technologies enable more customer-centric business models, which in turn encourage customer loyalty. However, smaller businesses have struggled with the high cost of implementing digital tools. While larger firms have the resources to implement comprehensive digital strategies, smaller businesses may need financial support or collaboration platforms to fully leverage digital transformation. Despite the clear

benefits, several barriers to digital transformation have been identified. One key challenge is the cost of technology adoption, especially for small and medium-sized businesses (SMBs). The high initial investment in hardware, software, and cybersecurity measures can prevent businesses from fully committing to digitalization. SMBs in Beylikdüzü expressed concerns about the long-term return on investment (ROI) of their digital transformation efforts. Another barrier is resistance to change, especially among older workers who may feel overwhelmed by new digital tools. Resistance has been observed more frequently in traditional manufacturing sectors where the workforce is less accustomed to rapid technological change. This issue highlights the importance of creating a corporate culture that embraces innovation and change, and providing employees with adequate support and training. Government policies and support structures have played a significant role in facilitating digital transformation in Beylikdüzü Organized Industrial Zone. Incentives such as tax breaks, grants for technological innovation, and access to digital infrastructure have enabled businesses to overcome some of the financial barriers associated with digital adoption. However, the findings suggest that more policy interventions are needed, particularly in supporting SMEs and addressing the digital divide between large companies and smaller businesses. The ongoing digital transformation in Beylikdüzü is poised to shape the future of industrial performance in the region. As businesses continue to adopt new technologies such as artificial intelligence (AI), the Internet of Things (IoT), and blockchain, further performance improvements are expected(Basal, et al, 2024). The study highlights the importance of continuously investing in digital infrastructure and human capital to maintain a competitive advantage in a rapidly evolving market. From a strategic perspective, businesses need to develop a long-term digital transformation path.

7.1. CONCLUSION

Based on the findings of this study, it was determined that the factors of contribution to personal development, contribution to career development and contribution to work efficiency have an effect on the dependent variable of business performance. In the same direction, according to the findings of the research conducted by Güllü and Göktaş (2024: 36), a statistically significant relationship was found between the skills of individuals in the field of digital technology and the performance of enterprises. As a suggestion for the research findings, selecting the skilled labor force from people who are skilled in digital technologies and being sensitive to new developments may lead to an increase in the performance of both employees and the business.

According to the results derived from this study, it was determined that digital transformations have no effect on the dependent variable of business performance according to the gender of the individuals. In the study by Kaygın and Güven (2015: 66), the breakdown of gender stereotypes in business life and the increase in the role of women in working life. The active participation of women in the labor force shows the level of development and the increase in development of countries. Supporting and encouraging women entrepreneurship contributes to the performance of businesses. As a suggestion for the research findings, continuing activities without gender discrimination among business employees, evaluating their performance, ensuring the adaptation of digital technologies according to the skills of individuals; can increase the performance of businesses and employees.

Following the evaluation of the research data, it was determined that digital transformations do not have an effect on the dependent variable of business performance according to the age of the individuals. However, according to the findings of the research conducted by Sucu 2(021: 1471), in the same direction, it was determined that there was no significant difference between the employees for the age factor in terms of employees' participation and adaptation to digitalization-related activities. As a suggestion for the research findings, since many employees working in businesses are of different ages, their closeness and adaptation to digital technologies may not be the same. For this reason, it may be useful for businesses to approach their employees of different ages, training methods, encouragement and guidance efforts with different practices to ensure effectiveness.

As an outcome of the analysis performed in this study,it was determined that digital transformations have no effect on the dependent variable of business performance according to the educational status of the individuals. On the other hand, Reding (2003: 4) stated in his study that; with the understanding of lifelong learning, ensuring the adoption of digital transformations in a way to ensure the participation of all employees and supporting the personal development of employees with training programs; it increases the performance of businesses and employees. As a suggestion for the research findings, digital transformations can provide significant benefits for businesses and employees if digital transformations are adapted to businesses in a way that will increase the personal development of employees, enable them to carry out their duties successfully, and new developments are supported by continuous training.

As a consequence of the analysis conducted in this research, it was determined that digital transformations have no effect on the dependent variable of business performance according to the length of service of the individuals in the profession. In the study conducted by Munoz, et al. (2016: 4), it was stated that as the duration of the employees in the profession increases in the enterprises where digital transformations are started to be implemented; the activities of individuals such as communication, joint work, cooperation, cooperation, joint decision-making, carrying out joint projects increase, so digital transformations are used more and more intensively. As a suggestion for the research findings, it can be suggested that businesses should adapt digital transformations to business activities, encourage employees, and reward employees for positive developments; digital transformations can be used much more efficiently in businesses and increase the performance of employees in this context.

7.2. RECOMMENDATIONS

As a suggestion for future research, it may be more useful to include topics such as employee motivation, employee performance, leadership, organizational climate, organizational commitment, and emerging digital technologies in the scope of the study population to be regional, national, or cross-national in order to represent the field and to apply the results to the whole. In order for businesses to be successful in digital transformation processes, it is very important to increase the digital literacy level of employees. Therefore, continuous training programs should be organized and employees should be provided with practical knowledge and skills about new technologies. Small and medium-sized enterprises (SMEs) often have difficulty keeping up with digital transformation processes. Therefore, state-supported incentives, low-cost technology solutions and credit opportunities should be offered. In addition, collaborative platforms and consultancy services should be developed to facilitate the digitalization of SMEs. Since the digital transformation requirements of each sector are different, sector-specific digital strategies should be developed. In particular, technologies suitable for digitalization processes should be used in sectors such as manufacturing, logistics and finance. Businesses in the Istanbul Beylikdüzü Organized Industrial Zone should invest not only in existing technologies but also in future technologies (e.g. artificial intelligence, internet of things, big data analytics). These technologies enable a more sustainable digital transformation process. Businesses should adopt flexible and creative business models in digital transformation processes. In particular, business models that respond quickly to customer needs and adapt to changes in the market should be developed.

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