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CONTENT

INTELLECTUAL CAPITAL AND BANKS PERFORMANCE: THE EMPIRICAL EVIDENCES FROM INDONESIAN ISLAMIC AND CONVENTIONAL BANKS

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ABSTRACT

Purpose- This study examines the influence of intellectual capital (IC) on bank performance measured by ROA, ROE and NIM.
Methodology- This study explores purposive sampling methods. Finannly, 10 Islamic banks and 30 Conventional banks were selected as a sample of this study for the period 2012-2016.
Findings- This study found that IC positively effect on bank performance that measured by ROA, ROE and NIM. In the context of IC dimensions, this study shows that HCE and CEE positively effect on bank performance that measured by ROA, ROE and NIM. Meanwhile, SCE positively affect to bank performance that measured by ROA only. The results of the study are sensitive to samples. For Islamic banks sub sample, this study found that IC positively effect on ROA, but it does not affect to ROE and NIM. HCE positively effect on ROA, but HCE negatively influence on ROE and HCE has no effect on the NIM. SCE negatively effect on ROA and ROE, but SCE has no effect on NIM. CEE Capital has a positive effect on ROA and NIM, but CEE has a negative effect on ROE. For conventional banks, IC has a positive effect on ROA and ROE, but IC does not affect the NIM. HCE and CEE have a positive effect on ROA, ROE and NIM. SCE has a positive effect on ROE, but SCE has a negative effect on the ROA and NIM
Conclusion- These findings indicate the optimum intellectual capital will be followed by better bank performance. However, the influencing of IC on bank performance is very susceptible to measurement and the sample.

Keywords: Intellectual capital, human capital, structural capital, customer capital, bank performance.
JEL Codes: G21, M41, L25

1. INTRODUCTION

Banks will be able to play a strategic and very important role in supporting the economic growth and stability of a country properly, since the banks achieve the optimum profitability. Unfortunately, some empirical and anecdotal evidence indicates that some banks are not always report the good performance, even some banks are bankrupt because of the relatively high competition in the banking industry. Therefore, banks must have sufficient tangible and intangible assets to support their efforts to win the competition. Moreover, the banks which are able to maximize their resources including intellectual capital will get advantages in competing and will achieve better performance. Gogan *et al.*, (2016) state that intangible assets such as knowledge, information technology and intellectual skills are now the main resources needed by organizations to operate effectively and to obtain sustainable competitive advantages. Moreover, El-Bannany (2008) highlighted that intellectual capital (IC) is an important tool in improving the quality of services provided to customers. Mondal and Ghosh (2012) conclude that banks business goals achievement is not only determined by both tangible resources and intangible assets. Al-Musali and Ismail (2014) argue that IC become a key factor in business success, especially in maintaining competitive advantage which ultimately it has an impact on BP. Moreover, Bontis (1998) classifies IC into human capital (HC), structural capital (CS) and customer capital (CC).

Some previous studies have examined the effect of IC on financial performance (FP) which shows inconsistent results. Puntillo (2009) and Mondal and Ghosh (2012) found that IC has no effect on FP in terms of ROI, ROA, and ROE proxies. However,

Nimtrakoon (2015) and Nawaz and Haniffa (2017) found that IC has a significant positive relationship with ROA and NIM proxies. Moreover, in term of the IC dimensions including Human Capital Efficiency (HCE), Structural Capital Efficiency (SCE), and Capital Employed Efficiency (CEE), Nawaz and Haniffa (2017) found that HCE and CEE have a positive effect on ROA. While SCE does not have a significant relationship with FP. Janosevic et al., (2013) found that HCE and SCE have a significant effect on ROA and ROE, while CEE has only a significant effect on ROE. Furthermore, Mondal and Ghosh (2012) concluded that HCE has a positive relationship that is almost significant with ROA and ROE, while SCE and CEE have a positive relationship to Turn Over Asset (ATO).

Based on the inconsistency of previous research results, this study will re-examine the influence of IC measured using VAICTM on BP with proxy ROA, ROE and NIM of Indonesian Islamic and conventional banks.

The rest of this paper contains five sections. Section 2 provides literature review on intellectual capital concept and hypothesis. Development for the relationship between intellectual capital and bank performance. Section 3 describes our data and analyses that consist of sample selections, data, and variables measurement. Section 4 reports the findings of this study including descriptive statistics, correlation analysis, and multiple regressions analysis for hypothesis testing. Section 5 discus and section 6 concludes.

2. LITERATURE REVIEW

2.1. Intellectual Capital Concept

The concepts of IC are defined differently in various disciplines and perspectives, including finance and accounting. Stewart (1997) defines IC as the number of personalities in companies that have knowledge, information, intellectual property, and experience that can be used to create corporate wealth. Riahi-Belkaoui (2003) explains that IC is a combination of human capital, structural capital and customer capital. He further explained that (1) human capital produces innovation, (2) structural capital is the knowledge owned by the company in terms of technology, strategy and culture, data, routine and organizational procedures, and (3) customer capital is the corporate value of the franchise and ongoing relationships with customers and other interested parties. Mondal and Ghosh (2012) state that IC refers to intangible assets or corporate intangible business factors, which have a significant impact on overall business performance even though they are not explicitly listed on the balance sheet.

Bontis (1998), and Stewart (1997) classify IC into three components, namely human capital, structural capital and customer capital, while O'Donnell and O'Regan (2000) classify IC into people, internal structure and external structure. Some prvious studies measure the IC uses monetary perspectives, namely Value Added Intellectual Coefficient (VAIC) developed by Pulic (1998). According to Pulic (2000) VAIC is a method designed to help managers take advantage of their company's potential, based on current business performance. Furthermore, Stahle et al., (2011) conclude that VAIC method intend to measure the extent to which companies can generate added value based on intellectual efficiency or intellectual resources. Value added is an indicator of the goals of business success and shows the company's ability to create value, which needs to include investment in resources (Pulic 2004).

The VAIC method consists of three dimensions, namely Human Capital Efficiency (HCE), Structural Capital Efficiency (SCE) and Capital Employed Efficiency (CEE). Human Capital Efficiency (HCE) is the company's ability to obtain value added from the costs incurred for labor. Structural Capital Efficiency (SCE) measures the amount of SC needed by the company to produce 1 Dollar from value added. Capital Employed Efficiency (CEE) is the company's ability to generate value added from the capital used.

Meanwhile, Chan (2009) states that the using of VAIC in measuring IC is an effective method because this method offers several advantages, namely: (1) This method produces quantitative and objective measurements, (2) Provides indicators that are relevant, useful, and have information for all stakeholders who can identify and compare the key components of IC to assess the company's financial performance, (3) Use financially oriented steps so that each calculated indicator, relation or ratio can be used for comparison with financial indicators traditionally commonly found in business, (4) Using a relatively simple and easy procedure in calculating the required index, (5) Producing standard measurement forms, and (6) Treating HC as the most important source of IC, which consistent with all the main definitions of IC found in the literature.

The human capital are supported by (1) knowledge created and stored by company employees, and embodiment, empowerment and infrastructure (Nawaz and Haniffa, 2017). Joshi et al. (2013) states that structural capital can be defined as knowledge created by an organization and cannot be separated from the entity. Structural capital consists of patents, databases, information technology systems, trademarks, organizational culture, and company operational systems. According to Bontis (1998) knowledge of marketing channels and customer relations is the main theme of customer capital. Stewart (1998) states that customer capital is the value of organizational relationships with people who do business with it. Joshi et al. (2013) explain that companies benefit

when building customer capital, such as customer loyalty and brand, customer satisfaction, image market and goodwill, the power to negotiate, strategic alliances and coalitions.

2.2. Intellectual Capital and Performance

Resource Based Theory (RBT), states that companies which can utilize their resources effectively, they will gain a competitive advantage. Barney (1991) concluded RBT recognizes intangible assets as important factors that help companies in generating sustainable competitive advantages, in order to create their superior performance.

The RBT also explains that one of the resources that the company needs to use is IC. It is important for a company to be able to use IC effectively because IC has an important role in achieving competitive advantage and improving the company's performance. Nawaz and Haniffa (2017) state that the higher the company's IC, the more successful the company will be and the greater the opportunity to gain competitive advantage.

Companies that are able to utilize well-owned resources will be able to produce competitive advantages, so companies can create opportunities to obtain good financial performance. Mondal and Ghosh (2012) state that generally, the term IC is used to refer to non-tangible assets that have a significant impact on overall business performance and success even though they are not explicitly listed in the balance sheet. IC measurement can be done using VAIC developed by Pulic. The dimensions of VAIC consist of Human Capital Efficiency (HCE), Structural Capital Efficiency (SCE), and Capital Employed Efficiency (CEE).

Nawaz and Haniffa (2017), Al-Musali and Ismail (2014), Nimtrakoon (2015), Razafindrambinina and Anggereni (2011) and Chen, et al.(2005) found a positive relationship between IC as measured by VAIC and firm performance. Furthermore, for each dimension of VAIC, HCE has a positive effect on firm performance (Nawaz and Haniffa (2017); Mondal and Ghosh (2012); Nimtrakoon (2015); Al-Musali and Ismail (2014); Janosevic et al. (2013) and Chen et al., (2005)), SCE also has a positive effect on firm performance (Janosevic et al., (2013); Mondal and Ghosh (2012); Razafindrambinina and Anggreni (2011); Chan (2009) and Chen et al. (2005)), and CEE also positively relate to firm performance (Nawaz and Haniffa (2017), Mondal and Ghosh (2012), Nimtrakoon (2015), Dzenopoljac et al., (2016), Al-Musali and Ismail (2014), Chan (2009), Chen et al., (2005), Janosevic et al., (2013), Puntillo (2009), Razafindrambinina and Anggreni (2011)). Based on the results of previous research and RBT, we come up with hypothesis as follows:

H1　　　　: Intellectual Capital positively influences bank performance.

H1a　　　: Human Capital Efficiency positively influences bank performance.

H1b　　　: Structural Capital Efficiency positively influences bank performance.

H1c　　　: Capital Employed Efficiency positively influences bank performance

3. DATA AND METHODOLOGY

3.1. Sample and Data

The Sample of this study consists of conventional banks that listed on the Indonesia Stock Exchange (IDX) and all Indonesian Islamic banks for periods 2012-2016. Table 1 shows the sample selection process The reasons for determining 2012 as the initial period of observation are in accordance with International Financial Reporting Standards (IFRS) which began to apply in Indonesia to in 2012 as a whole or full adoption (Indonesian Institute of Accountants, 2009)..

Table 1: Sample Selection

No	Indicators	Total
1	Listed conventional Banks and Indonesian Islamic banks	53
2	Banks have no complete reports or complete data during 2012-2016	(13)
3	The number of banks as a final sample	40
4	Total observations for 5 years	200

3.2. Variables Measurement

The dependent variable in this study is bank performance which is measured using 3 proxies. The first is Return on Assets (ROA) which is calculated as the ratio between net income and total assets of a bank, second is Return on Equity (ROE) obtained by

dividing net income with shareholders equity of a bank, and third is the Net Interest Margin (NIM) ratio of interest income / income from profit loss sharing to the average of productive assets.

The independent variable in this study is intellectual capital (IC) which is measured by the Value Added Intellectual Coefficient (VAIC) method developed by Pulic (2000). Zeghal and Maaloul (2010) state that this method is very important because it allows us to measure contributions from every resource - human, structural, physical and financial - to create added value by the company. There are three dimensions of VAIC namely Human Capital Efficiency (HCE), Structural Capital Efficiency (SCE), and Capital Employed Efficiency (CEE). Moreover, Pulic (2004) highlighted six steps to calculate VAIC. Firstly, obtaining value added (VA). The VA can be obtains by subtracting total income with operating expenses except employee expenses (Nawaz and Haniffa, 2017). The VA can be calculated from the bank financial statements in the following manner:

Value added = operating profit + employee expenses + depreciation + amortization.

Secondly, obtaining the HCE coefficient using formula:

HCE = VA / HC

Where HC refers to employees' wages and salaries paid annually

Thirdly, determining SCE coefficient uses the equation:

SCE = SC / VA

Where SC is calculated by subtracting HC costs from VA

Fourthly, determine the IC efficiency that represents the summary of HC and SC efficiencies. So IC efficiency obtained by summing HCE and SCE as follows:

ICE = HCE + SCE

Fifthly, calculate CEE or the efficiency of using physical capital in a bank, represents the ratio between VA and net assets:

CEE = VA / CE

Where the CE is also known as company's net assets

Lastly, Calculate the VAIC by summing the ICE and CEE.

4. FINDINGS

4.1. Descriptive Statistics

This section presents the values for minimum, maximum, mean, and standard deviation for each of used variables in the research (Table 2).

Table 2: Descriptive Statistics

Variables	Minimum	Maximum	Mean	Std, Deviation
ROA	-0,2013	0,0515	0,0100	0,0281
ROE	-1,4248	0,8379	0,0702	0,2017
NIM	0,0024	0,7099	0,0555	0,0519
VAIC	-3,7624	13,4016	3,1437	1,9329
HCE	-4,1431	12,3028	2,3058	1,7165
SCE	-3,9966	5,5211	0,5538	0,7032
CEE	-0,6852	1,9003	0,2842	0,2517
Size	27,3355	34,5768	30,8908	1,7659
Lev	0,0403	0,9479	0,6749	0,3158

4.2. Correlation

The results of the correlation analysis depicted in Table 3. Table 3 panel A showed that the HCE component positively correlate to ROA and ROE. The table also presented that CCE has the positive correlation with ROA, ROE, and NIM. However, the SCE

negatively correlates with ROE. This study also found that VAIC positively correlates with ROA and ROE. While, correlation analysis among independent variables was shown in Table. 3 Panel B, where there is no strong correlations among independent variables. It indicates there is no multicolinearity problem in this study.

Table 3: Pearson Correlation

Panel. A. Correlation between Independent and Dependent variables

	ROA	ROE	NIM
HCE	0.331**	0.351**	0.087
SCE	-0.191**	0.017	-0.069
CEE	0.198**	0.292**	0.270**

Panel. B. Correlation among Independent variables

	HCE	SCE	CEE
HCE	1		
SCE	0.024	1	
CEE	0.277**	-0.186**	1

4.3. Multiple Regressions Results

Multiple linear regression analysis was used to assess the influencing VAIC and its components on the bank performance measurement. Since there are three dependent variables two groups independent variables in the research, six distinct multiple regression models were identified as follows:

Model 1a : ROA = α + β1VAIC + β2Size + β3Lev + ε

Model 1b : ROE = α + β1VAIC + β2Size + β3Lev + ε

Model 1c : NIM = α + β1VAIC + β2Size + β3Lev + ε

Model 2a : ROA = α + β1HCE + β2SCE +β3CEE + β4Size + β5Lev + ε

Model 2b : ROE = α + β1HCE + β2SCE +β3CEE + β4Size + β5Lev + ε

Model 2c : NIM = α + β1HCE + β2SCE +β3CEE + β4Size + β5Lev + ε

The results are provided in Table 4 reveals the quality of the model and the influence of VAIC on ROA, ROE, and NIM as well. Table 4, the presented regression model has a low degree of fit because the R^2 value around 0.177, 0.197, and 0.038 respectively for model 1a, model 1b, and model 1c. after controlling for firm size and leverage. The model also shows that VAIC have a positive significant impact on ROA, ROE, and NIM. Therefore, hypothesis 1 is supported.

Table 4: Multiple Regression Results for VAIC

Variables	ROA			ROE			NIM		
	Coef	t	Sig.	Coef.	t	Sig.	Coef	t	Sig.
Constant	-0.169	-4.997	0.000***	-0.958	-3.966	0.000***	-5,932	-9,291	0,000***
VAIC	0.002	2.368	0.019**	0.031	4.387	0.000***	0,156	2,257	0,025**
Size	0.006	4.788	0.000***	0.031	3.748	0.000***	0,151	2,927	0,004***
Lev	0.001	0.051	0.959	-0.040	-0.889	0.375	-0,024	-0,394	0,694
R-Squared	0.177			0.197			0.038		
Adjusted R-Squared	0.165			0.174			0.024		
F	14,091			14.980			2.547		
Sig	0.000***			0.000***			0.057*		

Note: ***significant at the 0.01 level , **significant at the 0.05 level, *significant at the 0.10 level.

The second regression models is run to examine the influence of individual intelectual capital component (HCE, SCE, and CEE) on ROA, ROE, and NIM. Table 5, still presents regression model has a low degree of fit because the R^2 value around 0.257, 0.220, and 0.095 respectively for model 2a, model 2b, and model 2c. after controlling for firm size and leverage. The table also showed that

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HCE positively influence ROA and ROE. While, CEE positively affect ROA and NIM. In contrast, SCE has a negative impact to ROA. Therefore, hypothesis 1a and Ic are supported but hypothesis 1b is not supported

Table 5: Multiple Regression Results for VAIC Components

	ROA			ROE			NIM		
Variables	**Coef**	**t**	**Sig.**	**Coef.**	**t**	**Sig.**	**Coef**	**t**	**Sig.**
Constant	-0.155	-4.765	0.000***	-0.923	-3.862	0.000***	-0.092	-1.385	0.168
HCE	0.004	3.458	0.001***	0.027	3.367	0.001***	0.000	-0.168	0.867
SCE	-0.008	-3.133	0.002***	0.013	0.686	0.493	-0.001	-0.284	0.776
CEE	0.007	0.986	0.325	0.166	3.054	0.003***	0.051	3.379	0.001***
Size	0.005	4.545	0.000***	0.029	3.519	0.001***	0.005	2.067	0.040**
Lev	0.003	0.470	0.639	-0.022	-0.501	0.617	-0.016	-1.283	0.201
R-Squared		0..257			0.220			0.095	
Adjusted R-Squared		0..238			0.200			0.072	
F		13.445			10.963			4.062	
Sig		0.000***			0,000***			0,002***	

Note: ***significant at the 0.01 level , **significant at the 0.05 level, *significant at the 0.10 level.

4.4. Additional Multiple Regressions Analysis for Sub-samples

This conducts the additional multiple regressions analysis for sub sample Islamic bank and subsample conventional banks for model 1 and model 2. Table 6 reveals the quality of the model 1, as well as the influence of VAIC on ROA, ROE, and NIM for subsample Islmaic banks. The Table presented that the regression model has a low degree of fit because the R^2 value around 0.111, 0.265, and 0.143 respectively for model 1a, model 1b, and model 1c, after controlling for firm size and leverage. The model also shows that VAIC have a significant negatively impact on ROE. Therefore, hypothesis 1 is not supported.

Table 6: Multiple Regression Results for VAIC of Islamic Banks

	ROA			ROE			NIM		
Variables	**Coef**	**t**	**Sig.**	**Coef.**	**t**	**Sig.**	**Coef**	**t**	**Sig.**
Constant	-0.215	-1.853	0.070*	-1.400	-3.195	0.003***	0.004	0.051	0.959
VAIC	-0.003	-1.041	0.303	-0.012	-1.174	0.247	0.000	-0.291	0.772
Size	0.007	1.903	0.063*	0.047	3.199	0.002***	0.001	0.510	0.613
Lev	0.016	0.188	0.852	0.410	1.280	0.207	0.137	2.556	0.014*
R-Squared		0.111			0.265			0.143	
Adjusted R-Squared		0.053			0.217			0.087	
F		1,916			5.525			2.550	
Sig		0.140			0.000***			0.057*	

Note: ***significant at the 0.01 level , **significant at the 0.05 level, *significant at the 0.10 level.

While for conventional bank (Table 7) the R^2 value around 0.285, 0.252 and 0.040 respectively for model 1a, model 1b, and model 1c. The results also show that VAIC positively influence on ROA and ROE. Therefore, hypothesis 1 is supported

Table 7: Multiple Regression Results for VAIC of Conventional Banks

	ROA			ROE			NIM		
Variables	**Coef**	**t**	**Sig.**	**Coef.**	**t**	**Sig.**	**Coef**	**t**	**Sig.**
Constant	-0.122	-3.796	0.000***	-0.622	-2.102	0.037**	-0.136	-1.495	0.137
VAIC	0.004	4.849	0.000***	0.049	5.723	0.000***	0.002	0.713	0.477
Size	0.004	3.916	0.000***	0.018	1.912	0.058*	0.006	1.978	0.050**
Lev	-0.009	-0.654	0.514	-0.040	-.305	0.761	0.000	0.006	0.995
R-Squared		0.285			0.252			0.040	
Adjusted R-Squared		0.270			0.237			0.021	

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F	19,380	16.434	2.053
Sig	0.000***	0.000***	0.100*

Note: ***significant at the 0.01 level , **significant at the 0.05 level, *significant at the 0.10 level.

This study also examine the influence of VAIC components on the performance of Islamic and conventional banks sub samples. The results of multiple regressions for Islamic bank and conventional banks sub samples are presented in Table 8 and Table 9 respectively. Table 8 shows that CEE positively associate with NIM only and HCE negatively relate to NIM. Therefore, hypothesis 1c is supported. However, hypothesis 1a and 1b are not supported

Table 8: Multiple Regression Results for VAIC Components of Islamic Banks

	ROA			ROE			NIM		
Variables	**Coef**	**t**	**Sig.**	**Coef.**	**t**	**Sig.**	**Coef**	**t**	**Sig.**
Constant	-0.225	-1.652	0.106	-1.180	-2.322	0.025**	0.125	1.645	0.107
HCE	-0.003	-0.604	0.549	-0.027	-1.473	0.148	-0.006	-2.105	0.041**
SCE	-0.001	-0.290	0.773	-0.005	-0.255	0.800	-0.003	-1.063	0.294
CEE	-0.007	-0.266	0.792	0070	0.735	0.466	0.047	3.264	0.002***
Size	0.008	1.698	0.097*	0.040	2.329	0.025**	-0.003	-1.123	0.267
Lev	0.018	0.206	0.838	0.392	1.204	0.235	0.122	2.505	0.016
R-Squared	0..114			0.291			0.326		
Adjusted R-Squared	0..013			0.199			0.249		
F	1.128			3.438			4.256		
Sig	0.360			0,010***			0,002***		

Note: ***significant at the 0.01 level , **significant at the 0.05 level, *significant at the 0.10 level.

Table 9 provides the empirical evidence on HCE influence to ROA and ROE, while CEE has a positive impact to ROA, ROE, and NIM. In contrast, SCE negatively relate to ROA. Therefore, hypothesis 1a and 1c are supported. However, hypothesis 1b is not supported

Table 9: Multiple Regression Results for VAIC Components of Conventional Banks

	ROA			ROE			NIM		
Variables	**Coef**	**t**	**Sig.**	**Coef.**	**t**	**Sig.**	**Coef**	**t**	**Sig.**
Constant	-0.112	-4.203	0.000***	-0.599	-2.099	0.038**	-0.129	-1.451	0.149
HCE	0.006	6.702	0.000***	0.040	4.469	0.000***	-0.000	-.022	0.982
SCE	-0.014	-5.196	0.000***	0.054	1.887	0.061*	0.000	.050	0.960
CEE	0.016	2.529	0.013**	0.284	4.200	0.000***	0.062	2.944	0.004***
Size	0.004	4.429	0.000***	0.018	1.921	0.057*	0.006	1.965	0.051*
Lev	-0.006	-0.491	0.624	-0.100	-0.777	0.438	-0.014	-0.351	0.726
R-Squared	0..513			0.314			0.099		
Adjusted R-Squared	0..496			0.290			0.068		
F	30.387			13.189			3.156		
Sig	0.000***			0,000***			0,010***		

Note: ***significant at the 0.01 level , **significant at the 0.05 level, *significant at the 0.10 level.

5. DISCUSSIONS

(This study examines the influence of IC on bank performance proxied by ROA, ROE and NIM. This study found that IC positively effect on bank performance with the proxy ROA, ROE and NIM. In the context of IC dimensions, HCE and CEE positively effect on bank performance proxied by ROA, ROE and NIM. While SCE only positively effect on ROA. The results of the study are sensitive to samples. For Islamic banks subsample, this study found that IC positively effect on ROA, but it does not affect to ROE and NIM. HCE positively effect on ROA, but HCE negatively influence on ROE and HCE has no effect on the NIM. SCE negatively effect on ROA and ROE, but SCE has no effect on NIM. CEE Capital has a positive effect on ROA and NIM, but CEE has a negative effect on ROE. For conventional banks, IC has a positive effect on ROA and ROE, but IC does not affect the NIM. HCE and CEE have a positive effect on ROA, ROE and NIM. SCE has a positive effect on ROE, but SCE has a negative effect on the ROA and NIM.

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Mostly the findings of this study align with what some previous studies found. However for SCE components, this study found the different results from those of previous studies found such as Janosevic et al., (2013), Mondal and Ghosh (2012), Razafindrambinina and Anggreni (2011), Chan (2009) and Chen (2005))..

6. CONCLUSION

This study found that intellectual capital positively effect on Indonesian bank performance. Moreover, this study also found human capital and capital employed positively effect on bank performance. While, this study found that structure capital only positively effect on ROA. However, when this study examine the influence of intellectual capital on the performance of Islamic and conventional banks separately, this study found that intellectual capital negatively affect Islamic bank performance for ROA proxy only and intellectual capital positively effect on conventional bank performance ROA and ROE proxies. These findings indicate the optimum intellectual capital will be followed by better bank performance.

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MATURITY ASSESSMENT IN THE TECHNOLOGY BUSINESS WITHIN THE MCKINSEY'S 7S FRAMEWORK

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ABSTRACT
Purpose - In this study, it is aimed to evaluate the maturity of a technology firm under the Mckinsey's 7s criteria.
Methodology - In this maturity assesstment the criteria and sub-criteria of the 7S's framework will be modelled in accordance with the Multi-Criteria-Decision-Making methodology. In this study, McKinsey's 7S's dimensions have been clustered with the digital transformation criteria. In this clustering, the weights of the criteria have been determined by using AHP method. Afterwards, a survey of company employees has been conducted to evaluate the maturity for business.
Findings- In the model digital transformation criteria were defined for business according to McKinsey's 7S. Finally, the maturity of digital transformation of the enterprise has been determined.
Conclusion- The study provides a maturity assessment methodology which is an important part of digital transformation process. This is the first maturity assesstment study under the Mckinsey criteria in the literature.

Keywords: Maturity assesstment, McKinsey's 7S, AHP, multicriteria decision making, technology firms.
**JEL Codes:** O31, M15, C44

1. INTRODUCTION

Nowadays, it is seen that in many enterprises, organizational structures are used to evaluate the existing performance and increase productivity and as a result positive results are reached. One of the approaches that make an organizational structure consistent is the McKinsey's 7S Model. This model was developed in the early 1980's with the help of Julien Philips and Anthony G. Athos by consultants named Tom Peters, Robert Waterman, who worked for the consulting firm McKinsey and the Company. The model is widely used by academics and practitioners and remains one of the most popular strategic planning tools (Şalvarlı & Doğu, 2018). This model is a dynamic application that plays an active role in structuring businesses. Four important steps are followed in the implementation of the model. First of all, with current analysis and structure, identifying deficiencies and ineffective elements in line studies and processes, internal dynamics, shared values, vision and mission. In the second step, the determination of the change and transformation targets that can be applied to the enterprise. In the third step In line with the objectives that may be required in the job and making an action plan and the last step is the restructuring according to the plan.

It will be necessary to determine how possible changes in the model elements affect each other during the restructuring process. The McKinsey's model will be applied in order to achieve the goal of adapting to the national and international competitions, thus contributing to the restructuring of the enterprises (Davutoğlu, Akgül, & Yıldız, 2016). This model, mainly comprises seven independent factors (Figure 1), which are classified as hard elements (strategy, business structures, systems) and soft elements (management styles, shared values / corporate culture, human resources and capabilities).

It is found that the soft elements are generally influenced by corporation culture and more rigid elements are affected by management culture. Although it is more difficult to define and manage soft elements, they have strategic importance in terms of originality, establishment of organizational structure, and significant contribution to provide competitive advantage (Ülgen & Mirze, 2004), (Ravanfar, 2015).

Figure 1: McKinsey's 7S: Hard and Soft Strategies
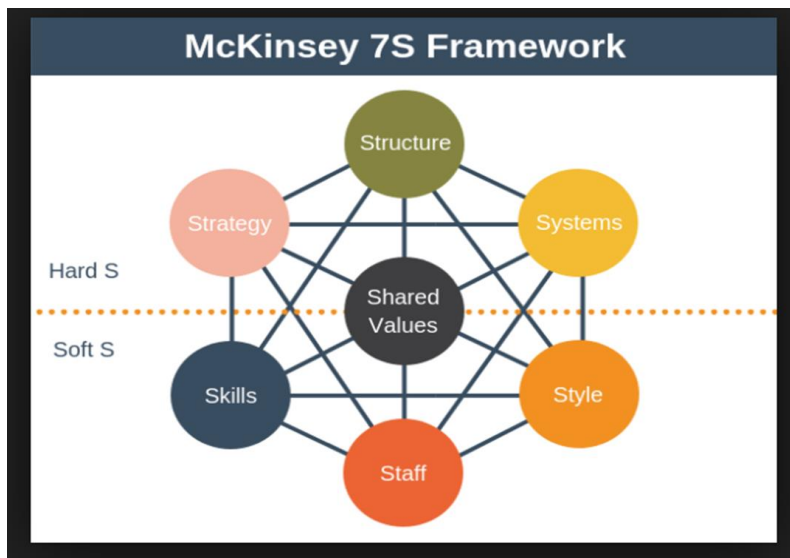
Source: Ravanfar, Analyzing Organizational Structure Based on 7s Model of, 2015.

As shown in the Figure 1, the shared values are in the middle of the model and are central to the development of other critical elements. There is an intense interrelation between the elements of the model. A change in any of the elements affects all other elements. Therefore, all operations related to the creation and management of elements should be carried out by competent and skilled managers who possess the necessary knowledge and skills to understand the scope and properties of the elements. In the context, digital transformations of the enterprises have been examined.

The digital transformation process should be carried out in accordance with the structure of the enterprise, the working system, the competence of the personnel, the vision and mission of the enterprise. With the advent of new digital technologies, companies have begun to use the digital technologies extensively (Reis, Amorim, Melao, & Matos, 2018). This type of transformation frequently involves the transformation of key business activities. In order to manage these complex transformations, companies must change management practices as well as product and process transformation (Matt, Hess, & Benlian, 2015). Thus, the companies is facing a completely fast and radical change due to the maturation of digital technologies and their ubiquitous penetration of all markets (Ebert & Duarte, 2016). To add to the increased demand from customers, companies are facing ever tougher competition due to globalization (Westerman, Calmejane, Bonnet, Ferraris, & Andrew, 2011) and forcing to be digitalized likewise others have done before, seeking to survive and attain competitive advantages (Bharadwaj, 2000).

In the light of this information, the objective of this study is to define the maturity assesment of the technology business for digital transformation. A maturity model consists of dimensions and criteria, which describe the areas of action, and maturity stages that indicate the evolution path towards maturity. For this aim, an integrated methodology including McKinsey's 7S methodology and digital transformation process with, Analytical Hierarchy Process (AHP) has been utilized. This proposed methodology is applied in a technology business in Turkey. The remainder of this study is organized as follows: "Section 2" provides the literature review. "Section 3" presents the data and methodology. Findings and discussions are given in "Section 4" and finally "Section 5" includes the conclusion with the references following.

2. LITERATURE REVIEW

There are many studies about McKinsey's 7S and digital transformation in literature. Therefore, two different literature studies have been discussed.

In this study, Mckinsey 7S and digital transformation process are discussed together with multi-criteria decision making method and it has been aimed to gain a new study to the literature.

2.1. McKinsey's 7S Framework

In the study, the studies about the performance evolution related with the institutions and enterprises using McKinsey's 7S criteria and other methods, have been examined.

In study of (Jing-xin & Wei, 2010) operational risk had become major field of research on risk management in global banking. The spirit of open, cooperation, equality and globalization advocated by Internet has changed the business of commercial banks completely and largered their operational risk several times. Based on introducing the definition and characteristics of operational risk, this paper analysed the development trend of operational risk and proposes the operational risk management framework for commercial banks based on McKinsey 7S Model in Internet World.

In study of (Alshaher, 2013) was about e-learning system. This paper proposed a new framework for assessing readiness of an organization to implement the e-learning system project on the basis of McKinsey 7S model using fuzzy logic analysis. The study considers 7 dimensions as approach to assessing the current situation of the organization prior to system implementation to identify weakness areas which may encounter the project with failure. Adopted was focus on Questionnaires and group interviews to specific data collection from three colleges in Mosul University in Iraq. This can be achieved success in building an e-learning system at the University of Mosul by readiness assessment according to the model of multidimensional based on the framework of 7S is selected by 23 factors, and thus can avoid failures or weaknesses facing the implementation process before the start of the project and a step towards enabling the administration to make decisions that achieve success in this area, as well as to avoid the high cost associated with the implementation process.

In study of (Spaho, 2014) was about project management. Project management is new science discipline which can be considered as science of new age. This discipline is common for technical sciences as well as social sciences but definitely it is not possible to deal with it without basic knowledge about business economy, or to be clear without basic knowledge in management. For the purpose of this paper the project as technical issue and tried to make a framework for project management by using some elements from management. Definitely, it is not possible to do any kind of project without clearly defined methodology. So the purpose of this paper has been to offer one approach in creating that methodology. So it has been trying to define the methodology of managing projects by using 7S McKinsey model which consists of next seven elements. 1. Strategy: This is system approach and allocation of resources in order to meet the goals of company. 2. Structure: This is organization structure and relation of power and responsibility. 3. Systems: These are procedures and processes such as information system, production process, budget, and control process. 4. Style: This is the way how top management acts and spend the time in order to meet company goals. 5. Staff: This is human resource in company and the it behaves in organization culture. 6.Shared values: These are values which are common to all members of organization. 7. Skills: These are visible capabilities of company. In this paper trying to apply these elements on project management using science method in order to create framework for successful managing projects.

In study of (Pothiyadath & Wesley, 2014) was about organisations used every possible methods and strategies to gain competitive advantage in the market place. Such a strategy involved gaining internal strength using the human resources of the organisation. Many methods have been evolved in the context; however, a composite framework has been developed by McKinsey called the 7S framework. However, a brief review of literature indicated that no fit scale is available to measure the implementation of 7S framework. The study maked an attempt to develop a measurement scale on 7S framework on the public sector undertaking company, the Kerala State Electricity Board (India).

In study of (Shiri, Anvari, & Soltani, 2015) was to identify and prioritize the organizational readiness factors for implementing ERP based on organizational agility. Along with the extension of McKinsey's 7S model (strategy, structure, systems, skills, style, staff, shared values) to 9S (7S+ self-evaluation and supportive factors) model, agility criteria were weighted and rated using group AHP with fuzzy logic approach; so that accountability, speed and flexibility have gained their maximum score. The nine organizational readiness factors were ranked using integrated FAHP and TOPSIS method based on five criteria of agility. The framework was proposed to a real case of Shiraz distribution cooperative firms. Results showed that among the nine organizational dimensions based on agility, the two added to McKinsey dimensions (self-evaluation and supportive factors) have been ranked. In the study, the proposed framework helped the firms "to implement ERP system with agility approach" concentrate on effective empowerments and develop strategies based on their own priority.

In an another study (Gökdeniz, Kartal, & Kömürcü, 2017), the strategic assessment of a business organization was conducted within the context of McKinsey's 7S model. The proposed model in the study has included the factors of strategy, structure,

style, systems and procedures, skills, shared values, and staffs. The interaction between the factors of the 7S model, which is grounded in the business assessment, was taken into consideration in the study. Therefore, the Analytic Network Process (ANP) technique, which enables to analyze the model's this interactional and relational situation, was used. It has been understood that the assessment of a business organization in the frame of the 7S model could be done with the model which was proposed in the conclusion of the study. Along with this, the current performance level of each sub-factor in the 7S model could be answered in consequence of analysis. These results of the study have given an idea about to what extent a business organization has access to their goals, in the context of the 7S model.

In study (Njeru, Awino, & Adwet, 2017) The study objective was to determine the relationship between strategy implementation of McKinsey's 7S Framework and performance of large supermarkets in Nairobi. Out of twenty one questionnaires has been administered, eighteen were received representing a response rate of 86. % and was considered adequate for further analysis. The finding of the study was a correlation coefficient of .868 when the relationship between McKinsey's 7S and firm performance was tested. This depicted a strong relationship between performance by the firm and the independent variables. The coefficient of determination ($R2$) was .753. Therefore, McKinsey's 7S dimensions accounted for 75.3% of the variations in firm performance. The study sought to assess the influence of Mckinsey's 7S framework, strategy adoption, barriers to strategy implementation, drivers to strategy implementation and firm performance. The results revealed a correlation coefficient (r) of 0.921 which show a strong relationship between performance by the firm and independent variables. The results showed a R^2 of 0.848 was established. The results suggested that strategy adoption, McKinsey 7S framework, drivers to strategy implementation and barriers to strategy implementation account for 84.8% of the variation in firm performance. Factor analysis found that cross-functionality of the strategy adoption, McKinsey 7S framework, drivers to strategy implementation and barriers to strategy implementation as the critical success factors for firm performance. The study concluded that the adoption of Mckinsey's 7S framework would lead to improved firm performance.

Finally, in study of (Bismark, Kofi, Frank, & Eric, 2018) , about efficient and effective implementation of organizational strategy that largely depends on several factors. Among these factors are the organizational structure, systems, style, shared values, skill among others which includes external threats and competition. McKinsey's 7S model and other tools such as PESTLE, BSC and SWOT Analysis have been the tools that most professional institutions use to evaluate overall performance of the organization. This study, the above was mentioned tools were used to ascertain in-depth analysis of the performance of The Community Hospital Group in Ghana. Survey analysed technique was used for the study to investigate the day to day operations of seven major units of the organization within the five corporate branches. Primary data was collected from fifty respondents, five management members for interview and forty-five core staff members for questionnaire, were used. The key among the findings of the study was the call for complete restructuring of the Community Hospital Group.

2.2.Digital Transformation

In study (O'Connor et al, 2007) was about Information and Communication Technology (ICT) literacy for digital transformation. The study reflects the growing importance and ubiquity of new technologies in work, education, and everyday life. In addition, it defines ICT literacy in the following way: ICT literacy has been using digital technology, communications tools, and/or networks to access, manage, integrate, evaluate, and create information in order to function in a knowledge society. And it has been defined important five critical components of ICT literacy. The five components represented a set of skills and knowledge presented in a sequence that suggested increasing cognitive complexity. After discussions regarding the kinds of tasks represented by each component, the report agreed on the following definitions: 1. Access - knowing about and knowing how to collect and/or retrieve information. 2. Manage - applying an existing organizational or classification scheme. 3. Integrate - interpreting and representing information. It involved summarizing, comparing and contrasting. 4. Evaluate - making judgments about the quality, relevance, usefulness, or efficiency of information. 5.Create - generating information by adapting, applying, designing, inventing, or authoring information.

 In study of (Ahmadi, Martin, Yeh, & Papageorgiou, 2015) was developed a new approach for managing interrelated activities using fuzzy cognitive maps (FCMs) and the fuzzy analytical hierarchy process (FAHP). The approach firstly enables the organization to identify the readiness-relevant activities, then determines how these activities influence each other, afterwards assesses how these activities will contribute to the overall readiness and finally prioritizes the activities according to their causal interrelationships to allocate management effort for the overall readiness improvement.

 The approach first used FCMs and a fuzzy connection matrix to represent all possible causal relationships between activities, then used FAHP to determine the contribution weights and used FCM inference to include the effects of feedback between the activities. Based on the contribution and interrelationships between activities, a management matrix was developed to

categorize them into four management zones for effective allocation of limited management efforts. An empirical study was conducted to demonstrate how the approach works.

In study of (Halepoto, Sahito, Uqaili, Chowdhry, & Riaz, 2015)**,** the smart city transformation process has distributed into three strategic phases; 1) Smart city vision and status assessment, 2) Smart city transformational initiatives and 3) Smart city development and implementation. The execution of every phase towards smart city transformation is somehow linked with each other and is impacted by different parametric factors which need to be identified. This paper attempted to identify those factors for every phase of smart city transformation based on SWOT analysis. Based on SWOT analysis, an integrative framework was also proposed to explain the relationships and impacts of those factors.

In study of (Schuchmann & Seufert, 2015), digital transformation was one of the major challenges in all industries. It embraced the realignment of technology and new business models to more effectively engaged digital customers at every touchpoint in the costumer experience lifecycle. Therefore, successful digital transformation began with an understanding of digital consumer behavior, preferences and choices. It then led to major consumercentric changed within the organisation that address these needs. Such a consumer-centric and self-directed client structure had significant consequences for banks. Banks will need to continue existing services, while developing strategies to manage the shift in mix. For that reason, banking organisations were challenged to consider exploration new business fields and not only focus on exploitation anymore. Finally they needed to ensure a successful balance between both. This means they had to establish a general development orientation and afford implementing innovations at the same time they focus on efficiencyn by utilizing and optimizing the existing. Pressure for doing this is definitely there and caused in current dynamic changed in the finance market, new competitors in the branch and little differentiation among offered banking services. Hence, they needed to enhance their continuous learning ability, which is an essential precondition for coping with innovations. This paper had followed the research question "how can the learning function foster the enhancement of the banking organisation's learning and innovation ability in times of digital transformation?" This was closely linked to the kind of services a learning function needs to enhance or integrate for supporting and designing a learning organization. With the idea underlying enterprise 2.0, social media platforms offered valuable opportunities for doing this. From an educational management perspective, the paper focused on the design levels of individuals, teams, and organisation in banks. Derived from its theoretical framework it was suggested a conceptual model for managing organisational learning for continuous innovation based on four action areas. It examined the appropriateness of this framework in the practice field through eleven case studies in banking organisations. This approach allowed a further development of these areas and to develop an understanding of what are current and future starting points for action in banking organisations. Finally, it identified new roles and services of the learning function for supporting the organisations.

In study of (Henriette, Feki, & Boughzala, 2015), about digital transformation literature. Digital market has never been so unstable due to more and more demanding users and new disruptive competitors. CEOs from most of industries investigate the digitalization opportunities. Through a systematic literature review, it was found that the digital transformation was more than just a technological shift. According to the study, these transformations have had an impact on the business models, the operational processes and the end-users' experience. Considering the richness of this topic, it has had proposed a research agenda of the digital transformation in a managerial perspective.

In study of (Berghaus & Back, 2016), about maturity of the digital transformation. This research derived from typical stages in a digital business transformation process from empirical data. The nine dimensions of the digital maturity model (DMM) provide a more profound understanding of the relevant levers for managing digital transformation. The DMM was implemented together with a survey of 547 individuals from 417 organizations in Switzerland and Germany. Based on the survey data, it was used the Rasch-algorithm and cluster analysis to derive five maturity stages. The findings was showed that while digital affinity and experimenting with digital technology are already prevalent in companies, a strategically planned transformation and usage of advanced data analytics in business processes are less common. The results from this study was yield insights into how activities in digital business transformation are currently tackled and prioritized and thus contribute to the body of knowledge about organizational transformation.

In study (Majchrzak, Markus, & Wareham, 2016) ICT literacy for digital transformation. It discussed four major implications of any Information System research that aims to contribute to the improvement of societal or business conditions. The implications were, 1.Information System researchers interested in societal or business change should expand their definitions of theory to include theories of the problem and theories of the solution. 2. That IS researchers interested in societal or business change should explicitly define the ICT artifact in both broad and specific ways, include affordances and constraints provided by the ICT artifact, and explicitly examine the unintended consequences of the ICT artifact. 3. That IS researchers

interested in societal or business change should consider emergent digital designing as a replacement for organizations. 4. That IS researchers interested in societal and business change should couple research findings with public policy and regulation recommendations where relevant.

3. DATA AND METHODOLOGY

3.1. The Proposed Methodology: An Integrated Approach of McKinsey's 7S Framework Criteria and Its Sub-Criteria to the Digital Transformation by Using AHP

In this paper, an integrated approach of McKinsey's 7S framework criteria and sub-criteria to the digital transformation by using AHP. The proposed model enables to obtain the percentage of the digital transformation maturity of the enterprise. The analysis of the maturity of digital transformation process of enterprises has come into question within the transition to industry 4.0 in recent years. In this process, McKinsey's 7S model, which is used dynamically in enterprises, is used. The criteria in the digital transformation process are grouped according to 7S dimensions in the enterprise. The digital transformation criteria have been weighted according to the AHP. AHP is an effective Multi Criteria Decision Making (MCDM) tool for setting priorities with calculated weighted values. A survey has been applied to the employees in order to examine the consistency of the criteria within themselves and to determine the maturity of the enterprise in the digital transformation process on a per-user basis. According to the results of the survey and the current situation of the enterprise, the performance of the enterprise has been obtained. By calculating the maturity level of enterprises as a percentage, then it is easily seen which variables are deficiencies on the basis of the enterprise. It is the first that the study has been conducted with the criteria in the digital transformation process. In addition, the digital transformation process has been applied in a firm in the software sector and then it has been presented as a solution proposal to that business. The flowchart of the study is shown in Figure-2 below.

Figure 2: The Flowchart of the Study
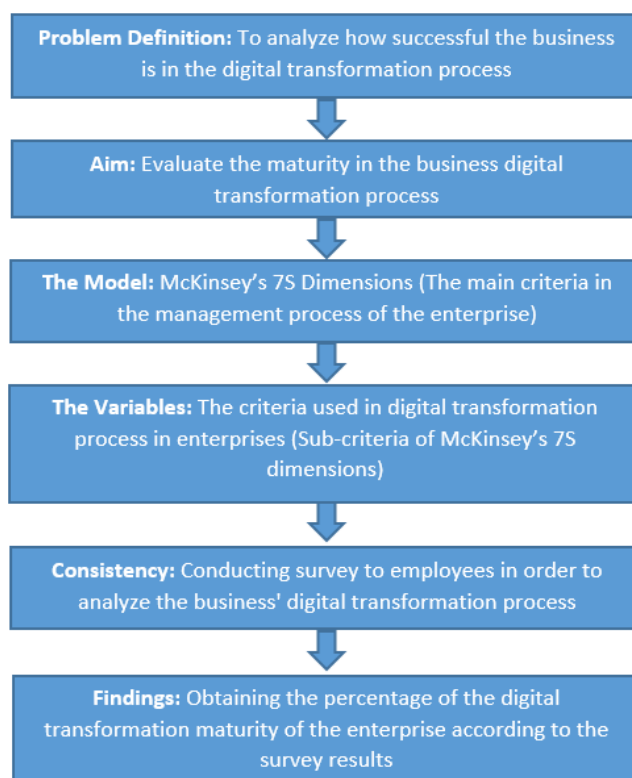
When the methodology of Analytic Hierarchy Method would be mentioned, AHP is a multi-criteria decision-making approach and was introduced by Saaty (1977 and 1994). In general, AHP is implemented to compute the vector of criteria weights, compute the matrix of option scores, rank the options. However, in this study AHP is used only for computing the vector of criteria weights. To specify the relative importance of criteria, the values between 1 and 9 is used. The related data have been derived by using a set of pairwise comparisons. These comparisons have been used to obtain the weights of importance of the decision criteria, and the relative performance measures of the alternatives in terms of each individual decision criterion.

3.2. Data

The study has been applied to a real business scenario. The company is located in Istanbul and serves in the software industry, and has been providing external consultancy services for 10 years. It has made the transition to the digital transformation in the last 3 years and aims to continue this transformation more effectively. In this study, a group of 3 experts has taken part. One of the experts is "project manager", and has a total of 20 years experience in the IT sector and business applications. The "specialist" in the expert group is a test engineer with 8 years of experience and previously used different softwares. Another expert is a professor in the related field. The academician has 25 years of work experience and teaches courses on project management and software. Before the meeting, a literature search has been made by the academician and a list of digital transformation criteria has been created (Shiri, Anvari, & Soltani, 2015), (Gökdeniz, Kartal, & Kömürcü, 2017), (Ahmadi, Martin, Yeh, & Papageorgiou, 2015), (Berghaus & Back, 2016), (Bismark, Kofi, Frank, & Eric, 2018), (Pothiyadath & Wesley, 2014) . At the first meeting, the literature has been examined with the project team and the number of criteria has been reduced and some new criteria has been added. In the second meeting, the evaluations regarding to the criteria has been weighted by the experts. After evaluating the data that had been entered, final values were agreed at the last fourth meeting. Meetings have lasted for an average of 75 minutes and have been completed on a for 6-week-calendar time. The criteria weights have been determined by AHP method and strategies for the enterprise have been weighted. And then, the application has been evaluated by the users in terms of the adaptation of the employees to the digital transformation process and the applications of the enterprise have been evaluated by the users. A survey has been applied to the employees within the scope of digital transformation transition process in the literature (Gill & Shan, 2016), (Henriette, Feki, & Boughzala, 2015). 100 people in the business are actively using digital transformation technologies. The survey has been applied to the employees and applied independently from the managers.

4. FINDINGS

After the application of the proposed methodology, the local weights, global weights and scale values from the survey have been obtained. As seen in Table 1, "Strategy" main criterion is found as the most important criteria for the digital transformation in case of the company because it has the highest dependent weights. Similarly, all the other criteria and sub-criteria have been obtained. And then expressions of the competences of the business on the basis of criteria and the corresponding linguistic evaluations have been obtained. Scale values have been ranged from 0 to 1, in which 1 is the best scale value.

Table 1: Empirical Maturity Assessment for the Business

7S Main Factors (Main Criteria)	Dependent Weights	7S Sub factors (sub-criteria)	Local Weights	Global Weights (GW)	Linguistic Evaluations	Scale Value (SV)	Level of Subfactors (GW*SV)
Strategy	0,21882627	SY1	0,38706813	0,084701	CE	1,00	0,08470068
		SY2	0,08472870	0,018541	PA	0,50	0,00927043
		SY3	0,09505428	0,0208	PA	0,50	0,01040018
		SY4	0,16570793	0,036261	CE	1,00	0,03626125
		SY5	0,26744094	0,058523	AE	0,75	0,04389232
Structure	0,14869488	SE1	0,27530165	0,04093594	CE	1,00	0,04093594
		SE2	0,23838081	0,03544600	AE	0,75	0,02658450
		SE3	0,18088017	0,02689595	AE	0,75	0,02017196
		SE4	0,11922245	0,01772777	AE	0,75	0,01329582
		SE5	0,10907562	0,01621898	PA	0,50	0,00810949
		SE6	0,07713927	0,01147021	PA	0,50	0,00573510
Style	0,11912677	SL1	0,06528529	0,00777722	PA	0,50	0,00388861

		SL2	0,16174117	0,01926770	AE	0,75	0,01445077
		SL3	0,37099274	0,04419517	CE	1,00	0,04419517
		SL4	0,12450999	0,01483247	CE	1,00	0,01483247
		SL5	0,10410407	0,01240158	AE	0,75	0,00930118
		SL6	0,17336671	0,02065261	AE	0,75	0,01548946
Systems	0,11634905	SS1	0,29282890	0,03407036	PA	0,50	0,01703518
		SS2	0,10951306	0,01274174	PA	0,50	0,00637087
		SS3	0,04895785	0,0056962	PU	0,25	0,00142405
		SS4	0,21360880	0,02485318	CE	1,00	0,02485318
		SS5	0,09879786	0,01149503	PA	0,50	0,00574751
		SS6	0,0619821	0,00721155	PA	0,50	0,00360577
		SS7	0,07996162	0,00930346	CE	1,00	0,00930346
		SS8	0,09434977	0,01097750	AE	0,75	0,00823313
Skills	0,14606638	SK1	0,22879188	0,03341880	CE	1,00	0,03341880
		SK2	0,10140105	0,01481128	AE	0,75	0,01110846
		SK3	0,17208139	0,02513530	AE	0,75	0,01885147
		SK4	0,19496211	0,02847741	AE	0,75	0,02135805
		SK5	0,12609176	0,01841776	PA	0,50	0,00920888
		SK6	0,07785003	0,01137127	PA	0,50	0,00568563
		SK7	0,09882176	0,01443453	PA	0,50	0,00721726
Shared Values	0,164190498	SV1	0,120502	0,01978535	AE	0,75	0,01483901
		SV2	0,085172	0,01398435	CE	1,00	0,01398435
		SV3	0,160245	0,02631071	CE	1,00	0,02631071
		SV4	0,299274	0,04913793	AE	0,75	0,03685345
		SV5	0,334807	0,05497213	AE	0,75	0,04122910
Staff	0,08674612	SF1	0,1724242	0,01495713	PA	0,50	0,00747856
		SF2	0,0907575	0,00787286	PA	0,50	0,00393643
		SF3	0,2857575	0,02478836	PU	0,25	0,00619709
		SF4	0,4646969	0,0403106	CE	1,00	0,04031066
TOTAL PERFORMANCE DEGREE							**0,776077**

5. CONCLUSION

In this paper, a maturity assessment model for the digital transformation has been proposed. For this aim, firstly, McKinsey's 7S dimensions have been identified as the main criteria for businesses and then digital transformation criteria have been investigated via literature review and survey methods. As an output of this part, the most important criteria categories have been stated as "Strategy", "Shared Values", "Structure", "Skills", "Still", "Systems", "Staff" in an descending order. And then the weights of sub-criteria which are the digital transformation criteria and corresponding linguistic evaluations have been determined according to the survey results. It has been seen that the business' current performance degree is approximately 78%. From this point of view, the maturity model in the digital transformation process has been obtained and it has been tried to explain the criteria that the enterprise ought to improve in order to bring the performance of the enterprise to 100%.

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INFORMATION AND COMMUNICATION TECHNOLOGIES DEVELOPMENT INDEX: GLOBAL ANALYSIS AND DIGITAL DIVIDES

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ABSTRACT
Purpose - The aim of this study is determining the development level of 80 countries in the ICT, measuring the performance of countries over time and revealing the digital divisions among the countries.
Methodology – Following the methodology used by the International Telecommunication Union, ICT Development Index (ICTDEV-I) of 80 countries are calculated separately for each year from 2010 to 2016. To calculate the index and determine the weight of each indicator, the Factor analysis is used and the Principal Component Analysis is chosen. The countries are grouped according to their ICT levels to reveal and compare digital divisions among them.
Findings- The countries are ranked according to the index values and comparative analysis are presented. The size of the digital divide and whether shrink of this division among the countries is analyzed.
Conclusion- There is an increase in the index values of all countries included in the ICTDEV-I. Digital divisions are increased between developing and less developed countries.

Keywords: information and communication technologies (ICT), ICT Development Index, digital divides, technology, human capital
JEL Codes: O11, O33, O34

1. INTRODUCTION

Information and Communication Technologies (ICT) has a strong impact on sustainable economic growth and global competition. The countries that have skills and required infrastructure to use these technologies and can access to adapt to the speed of these technologies benefit from the strong impact of ICT. In this direction, countries that can transform the information they produce into technology and invest in human capital on the basis of ICT can have the potential to be a leader in the global as well as a sustainable competitive advantage.

ICT has become a strategic power. Therefore, as much as the production of ICT, widespread usage, and the establishment of an appropriate infrastructure have gain importance in terms of increasing the efficiency of these technologies. In this process, countries take into account their dynamics in order to benefit from the strong impact of ICT. Therefore, they identify the areas that transformations are needed and making changes in their existing structures. Moreover, they develop a national strategy by enhancing various analyses, comparisons, and methods that measure the impact of ICT.

The aim of this study is determining the development level of 80 countries in the ICT, measuring the performance of countries over time in these technologies and revealing the digital divisions among the countries. In this context, the digital divide between the countries is considered within the scope of ICT Development Index (ICTDEV-I) and the countries are examined globally. For

this purpose, ICTDEV-I of 80 countries are calculated separately for each year from 2010 to 2016, and ICT development levels are examined on a global scale.

The organization of this paper is as follows; A brief review of the empirical literature is presented in section two. In the third section, the data set and the methodology are given. Findings and discussions are mentioned in the fourth section. These sections are followed by the conclusion part.

2. LITERATURE REVIEW

International Telecommunication Union is publishing "Measuring the Information Society" report as annually since 2009. The report examines the level of ICT development of countries over time and makes comparative analyses as global, regional, and according to the level of development of countries. In addition to this, digital divides between countries are being evaluated. In the report, countries are evaluated on the basis of 11 indicators in terms of ICT access, skills, and use. In this direction, the ICT Development Index (IDI) is composed. In the 2017 report, IDI is generated using data from 176 countries. While developed countries such as Iceland, Korea (Rep.), Switzerland are at the top of the index, the countries such as Eritrea, Central African Rep., Chad are bottom of the index. In the 2017 report, the regional analysis indicated that the highest region in terms of average IDI performance is the European Region. As to the average of Africa is below the average of other regions (ITU, 2017).

Camara and Tuesta (2017) composed an index called DiGiX in their study. The index consists of six dimensions as infrastructure, households' adoption, enterprises adoption, costs, regulation, and contents. It also includes 21 indicators. They evaluated the 100 countries in terms of their digital performances. While countries such as Luxembourg, the United Kingdom, and the United States are at the top of the index, lower African countries such as Algeria and Cameroon are in the lower ranks.

Erumban and Das (2016) examined the sources of economic growth in the Indian economy on the basis of ICT since the 1980s. In their study, they analysed the effects of ICT on economic growth in two ways as indirect and direct. They examined the direct contribution of ICT investments on total economy and manufacturing sector and they analysed the indirect effect of these technologies on total factor productivity increase in the sectors that use and produce ICT. Along with largely limited to the service sector, they concluded that ICT investment has an increasing role in driving economic growth in India.

Malisuwan et al. (2015) re-weighted the eleven indicators of ITU's ICT Development Index by taking into account the dynamics of Thailand. In this context, they investigated how Thailand could become a leading country in ICT among ASEAN countries. They analysed the weakness points of ICT development of Thailand and they found that there are 5 weak indicators out of 11. They also predicted that they could take first place among ASEAN countries in 2020.

Katz et al. (2013) constituted an index called "Digitalization Index" to demonstrate the digital progress of 184 Latin American countries, between the years of 2004-2011. The index is consisting of six factors as ubiquity, affordability, reliability, speed, usability, and skill. It is containing 24 sub-indicators. They divided the 184 counties into four categories as constrained, emerging, transitional and advanced in the index. In their study, they found that the Latin American region is relatively fast in increasing the level of digitalization and that there are significant differences between countries. They also stated that the difficulties faced by each of the countries that are divided into four categories in the index are different. They also indicate that digitalization contributed to economic growth in a certain proportion.

Farhadi et al. (2012) using the variables included in the ICT usage index, examined the effect of the use of ICT on economic growth between the years 2000 and 2009 in the framework of the dynamic panel data approach with Generalized Method of Moments (GMM). As a result of their studies, they suggested that there is a positive relationship between per capita GDP growth rate and ICT usage index. In addition, they divided 159 countries into four different income groups as high, medium-high, medium-low and low-income by using the ITU classification. They suggested that the impact of ICT usage on economic growth is greater in the high-income country group.

3. DATA AND METHODOLOGY

In this study, ICT Development Index is calculated for each year from 2010 to 2016 in order to reveal the level of development of ICT of 80 countries where the data is reached. Between the years mentioned in this study, primarily, 180 countries are taken into account. But, with the removal of missing data from the data set, the number of countries is reduced to 80. In this context, the ICT development levels of the countries are analyzed comparatively in terms of global dimension and digital divisions.

The data used to determine the level of ICT Development of the 80 countries included in the index and the resources used to reach these data are given in Table 1.

Table 1: Dataset and Resources

ICT Development Index	Resources
ICT Access Indicators	
1- Fixed telephone subscriptions per 100 inhabitants	
2- Mobile-cellular telephone subscriptions per 100 inhabitants	
3- International internet bandwidth (bit/s) per internet user	ITU
4- Percentage of households with a computer	
5- Percentage of households with internet access	
ICT Use Indicators	
6- Percentage of individuals using the internet	
7- Fixed-broadband subscriptions per 100 inhabitants	ITU
8- Active-mobile broadband subscriptions per 100 inhabitants	
ICT Skills Indicators	
9- Mean Years of Schooling	UNESCO
10- Secondary gross enrolment ratio	World Bank
11- Tertiary gross enrolment ratio	

The distance to the reference measure is used to normalize the data. The reference measure is the ideal value accessible for each indicator (similar to a goalpost). This value is taken as 100 for other indicators except for the five indicators in the Index. The weight of each of the 11 indicators that ITU weighted equally is recalculated using the weighting methods of the ITU. Factor Analysis, one of the dimension reduction methods, is used in order to calculate the index and to determine the weight of each indicator. In this analysis, the Principal Component Analysis method is chosen. In these methods, the variance explanation percentages and the values of the factor loads are used to calculate the weight of each of the 11 indicators in the index. The weight of each indicator is calculated according to the results obtained from the factor analysis which explained the relative importance of the indicators in each subgroup (Access, Use, Skills sub-indices) in the index[1] (ITU, 2009). The results derived from Principal Component Analysis are given in Table 2 and the results obtained from Factor Analysis for 12 regions, the calculated weights for each indicator, and ideal values are given in Table 3.

Table 2: The Results of Principal Component Analysis

	Eigenvalues	Share of Variance Explained (%)	Cumulative Share of variance Explained (%)
ICT Access Indicators			
Component 1	3.490	69.799	69.799
Component 2	0.884	17.684	87.483
Component 3	0.360	7.198	94.681
Component 4	0.235	4.704	99.385
Component 5	0.031	0.615	100.000
KMO / Bartlett's Test	0.76 / Ch-Sq (369.005)	(p-value = 0.000)	
ICT Use Indicators			
Component 1	2.549	84.982	84.982
Component 2	0.333	11.108	96.090
Component 3	0.117	3.910	100.000
KMO / Bartlett's Test	0.71 / Ch-Sq (177.942)	(p-value = 0.000)	
ICT Skills Indicators			

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[1] As a result of the factor analysis, the weights of each indicator are calculated following the ITU methodology. First, the component loadings are squared and divided by the share of variance explained by the component. Obtained results are multiplied by the ratio of the variance explained by the component and total variance. Then, the derived weights are rescaled to sum up to 100 to increase comparability.

Component 1	2.319	77.285	77.285
Component 2	0.384	12.809	90.094
Component 3	0.297	9.906	100.000
KMO / Bartlett's Test	0.73 / Ch-Sq (102.544)	(p-value = 0.000)	

Table 3: Component Loadings, Ideal Values, and Indicator Weight

	Component Loadings	Ideal Values	Indicator Weights	%
ICT Access Indicators				
1- Fixed telephone subscriptions per 100 inhabitants	0.683	60	0.13	
2-Mobile-cellular telephone subscriptions per 100 inhabitants	0.972	170	0.25	
3- International internet bandwidth (bit/s) per internet user	0.830	6.39	0.19	40
4- Percentage of households with a computer	0.904	100	0.22	
5- Percentage of households with internet access	0.920	100	0.22	
ICT Use Indicators				
6- Percentage of individuals using the internet	0.953	100	0.36	
7- Fixed-broadband subscriptions per 100 inhabitants	0.933	43	0.34	40
8-Active-mobile broadband subscriptions per 100 inhabitants	0.878	100	0.30	
ICT Skills Indicators				
9- Mean Years of Schooling	0.859	15	0.33	
10- Secondary gross enrolment ratio	0.890	100	0.34	20
11- Tertiary gross enrolment ratio	0.888	100	0.34	

In this respect, the ICT Development Index values of the 80 countries are calculated by using the weights are given in Table 3 and the ideal values applied in the normalization process of the data. Following the ITU methodology, equal weight is given 40 percent to each of the sub-indices of ICT access and ICT usage in the calculation of the final index. The ICT skills sub-index is given 20 percent weight because it is based on a proxy indicator.[2] In the final stage, the weights of the sub-indices are collected and the index value of each country is calculated. When calculating the index value of countries, the indicator values of countries are divided into ideal values and multiplied by the weights of each indicator. The derived values are collected and multiplied with the weight of each sub-index. As a result of this process, the values derived for each sub-index is collected and multiplied by 10 and the index values of the countries are found. All these transactions are calculated separately for each of the 80 countries in the index.

   The ICT Development Index is used to determine the magnitude of the digital divide between countries and examine its development over time. In this respect, countries are grouped according to their ICT levels and the digital divide between them is presented comparatively for the years of 2010 and 2016. The following steps are applied in the determination of digital divide between the 80 countries.

- The average of the ICT Development Index values of 80 countries is taken. While the average value for 2016 is 6.77, this value is calculated as 5.26 for 2010.
- Countries are divided into four groups as two groups above average and two groups below average. The countries above the average are called as the high group and upper-middle group. The countries below the average are called as lower-middle groups and low groups.
- The countries above and below the average are divided into two equal groups.

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[2] Since the indicators that are directly related to their ICTs are not available in many countries, the three indicators used in the skills sub-index to measure educational performance in countries are taken as proxy variables. Therefore, less weight (20%) is given to the skill sub-index according to the other two sub-indices. In addition, education indicators tend to move more slowly than indicators in the access and use sub-indices.

According to these calculations, the index values of the groups are given in Table 4.

Table 4: Country Groups with Different level of ICT

Group	Number of Countries 2016	ICTDEV-I Value 2016	Number of Countries 2010	ICTDEV-I Value 2010
High	23	8.08 and above	20	7.08 and above
Upper-middle	22	6.92– 8.06	20	5.34 – 7.05
Lower-middle	18	5.26 – 6.65	20	3.55 – 5.18
Low	17	1.87 – 5.15	20	1.43 – 3.45

4. FINDINGS AND DISCUSSIONS

The index values of the 80 countries, that are calculated separately for the years of 2010 and 2016 are comparatively given in Table 5. It is seen that there is an increase in the index values of all countries included in the ICT Development Index between 2010 and 2016. Overall, all the countries improved their scores over the seven-year period. The countries with high-income level such as Denmark, Republic of Kore, Sweden, Hong Kong, Iceland, Australia are rank top of the index between the mentioned years. In general, the least developed countries with low-income levels such as Benin, Pakistan, Bangladesh, Senegal, and Zimbabwe are rank at the bottom of the index. A little change is occurred in the index ranking of these countries within seven years. The index values of these countries are low consistently with their economic development.

Table 5: ICT Development Index (ICTDEV-I), Comparison of 2010-2016

Countries	2016 Rank	Index Value 2016	2010 Rank	Index Value 2010	Countries	2016 Rank	Index Value 2016	2010 Rank	Index Value 2010
Denmark	1	9.49	3	8.40	Hungary	41	7.08	33	6.02
Hong Kong	2	9.46	9	7.78	Kazakhstan	42	7.07	48	4.63
Australia	3	9.31	13	7.51	Argentina	43	7.04	42	4.96
Iceland	4	9.28	5	8.21	Bulgaria	44	6.94	40	5.34
Finland	5	9.19	6	8.18	Costa Rica	45	6.92	56	3.97
Sweden	6	9.17	2	8.40	Malaysia	46	6.65	47	4.71
Korea (Rep.)	7	9.13	1	8.59	Chile	47	6.65	46	4.75
Switzerland	8	9.09	10	7.71	Jordon	48	6.50	60	3.55
Netherlands	9	9.00	7	8.11	Romania	49	6.50	43	4.95
United Kingdom	10	8.97	11	7.68	Moldova	50	6.46	52	4.06
Norway	11	8.93	4	8.36	Lebanon	51	6.44	54	4.01
Japan	12	8.93	12	7.63	Turkey	52	6.19	49	4.27
Esthonia	13	8.83	22	6.77	Macedonia	53	6.13	45	4.83
Luxemburg	14	8.83	8	8.02	Brazil	54	6.07	53	4.05
New Zealand	15	8.59	17	7.29	Thailand	55	6.06	68	3.27
United States	16	8.57	15	7.30	Mauritius	56	6.00	55	3.97
Germany	17	8.51	14	7.44	Georgia	57	5.93	59	3.60
France	18	8.45	16	7.30	China	58	5.74	63	3.42
Belgium	19	8.45	19	7.16	Ukraine	59	5.71	50	4.22
Austria	20	8.39	21	7.05	Bosnia-Herzegovina	60	5.54	57	3.92
Ireland	21	8.29	20	7.08	Colombia	61	5.39	58	3.63
Canada	22	8.12	18	7.22	Mexico	62	5.26	61	3.45
Malta	23	8.08	25	6.59	Panama	63	5.26	51	4.20
Spain	24	8.06	26	6.51	Albania	64	5.15	62	3.45
Israel	25	8.00	23	6.71	South Africa	65	5.07	65	3.38
Cyprus	26	7.92	31	6.23	Ecuador	66	4.91	67	3.32
Qatar	27	7.66	36	5.94	Jamaica	67	4.82	64	3.40
Belarus	28	7.66	41	5.18	Tunusia	68	4.80	66	3.35
Latvia	29	7.55	32	6.21	Morocco	69	4.78	69	3.27
Slovenia	30	7.55	24	6.65	Algeria	70	4.65	72	2.78

Lithuania	31	7.47	29	6.33	Egypt	71	4.57	70	3.18
Uruguay	32	7.46	44	4.87	Dominican Rep.	72	4.51	71	3.08
Russia	33	7.44	38	5.71	Kyrgyzstan	73	4.39	73	2.74
Greece	34	7.44	34	6.00	Indonesia	74	4.37	74	2.66
Czech Republic	35	7.36	28	6.34	India	75	3.00	75	1.91
Portugal	36	7.32	37	5.88	Zimbabwe	76	2.82	76	1.64
Croatia	37	7.28	39	5.67	Senegal	77	2.57	79	1.51
Slovakia	38	7.26	35	5.96	Bangladesh	78	2.56	80	1.43
Italy	39	7.21	27	6.43	Pakistan	79	2.37	77	1.62
Poland	40	7.14	30	6.29	Benin	80	1.87	78	1.53

As it can be seen from the Table 6, the average of the ICTDEV-I increased by 28.7% from 5.26 to 6.77 between 2010 and 2016. When the average changes in the sub-indices are taken into consideration, the access sub-index is 15.7%, use sub-index is 68.8%, skill sub-index is 6.3% increased within seven years. The average value of the ICT use sub-index increased by 68.8% over 7 years and increased faster than the other two sub-indices. The skill sub-index increased less than the other two sub-indices, as previously mentioned, the indicators that make up this sub-index consist of proxy indicators and less weight than the other two sub-indices (20%).

Table 6: ICTDEV-I and Change Values of the Sub-Indices between the Years 2010-2016

	Average Value	Average Value	Change in Average Value in 2010-2016	
	2010	**2016**	**Difference**	**%**
ICTDEV-I	5.26	6.77	1.51	28.7
Access sub-index	5.81	6.72	0.91	15.7
Use sub-index	3.78	6.38	2.60	68.8
Skills sub-index	7.12	7.57	0.45	6.3

The average of the ICTDEV-I values for the countries divided into four groups in order to reveal the digital divisions between countries is shown in Table 7. There is an increase in group averages within the seven-year period. The increase in high and upper-middle groups is less than the lower-middle and low groups. The reason is that, most of the countries in these groups are developed countries with high-income levels. In this respect, it can be concluded that the ICT infrastructure, services, and acquisition in these countries are already maturing and that these countries have more advanced digital services and high-speed broadband connections.

Table 7: ICTDEV-I Group Averages

Group	ICTDEV-I Average Value 2010	ICTDEV-I Average Value 2016	Difference	%
High	7.77	8.83	1.06	13.6
Upper-middle	6.23	7.40	1.17	18.8
Lower-middle	4.32	6.03	1.71	39.6
Low	2.72	3.95	1.23	45.2
All the countries	5.26	6.77	1.51	28.7

While most of the countries in the lower-middle group comprise of developing countries, the countries in the low group consist of less developed and developing countries. The average index values of developing countries reveal that these countries perform better than less developed countries. On the other hand, the initial index values of the less developed countries in 2010 are lagging behind the developing countries. Although, these countries have slightly improved their index values within seven years, their ranking in the general index is not remarkably changed. For instance, Benin took third place with 1.53 points at the end of the index rank in 2010. Although increased the index value to 1.87 in 2016, it remained at the end of the index rank.

In order to evaluate whether the digital divide between the countries is growing or shrinking, the changing in the index values of the groups over time are taken into consideration. The variation of the digital divide between the groups is evaluated in Table 8.

Table 8: Evaluation of the Digital Divide between the Groups

		The Magnitude of The Digital Divide		Change in the Digital Divide
		2010	**2016**	**2010-2016**
High	Low	5.05	4.88	-0.2
High	Lower-middle	3.45	2.80	-0.7
High	Upper-middle	1.54	1.43	-0.1
Upper-middle	Low	2.28	3.45	1.2
Upper-middle	Lower-middle	1.91	1.37	-0.5
Lower-middle	Low	1.60	2.08	0.4

The rate of closure of the digital divide varies between countries. For instance, the difference in the magnitude of the digital divide between the high and low group (-0.2) is slightly shrinking. It can be said that the difference between developed countries and especially developing countries with high per capita GDP is decreased. Likewise, among the developing countries with relatively low per capita GDP levels in these countries, the digital divide in essential services is relatively reduced by the widespread use of mobile phones and mobile broadband. Despite all, digital divides and inequalities continue to affect the countries, although continues progress in connectivity and use of ICTs in all over the world.

5. CONCLUSION

In this study, ICT development levels of 80 countries are considered within the scope of the ICT development index and evaluated globally. In this direction, the performance of countries in these technologies over time is measured. In addition to this, digital divides between countries are revealed. For this purpose, ICTDEV-I of 80 countries are calculated separately for each year from 2010 to 2016, and ICT development levels are examined on a global scale. The ICT Development Index is used to determine the magnitude of the digital divide among countries and examine its development over time. In this respect, countries are grouped according to their ICT levels and the digital divide between them is presented comparatively for the years 2010 and 2016.

When the calculated ICT Development Index is evaluated, it is seen that the average of the index increased by 28.7% in seven years. It can be said that the countries placed at the top of the index rank invest in the ICT infrastructure at a high level and have high-speed networks and broadband services. They also develop comprehensive action plans, policies and strategies from education to the business world in order to maintain their position as the leading country in digital transformation and to compete in this change process. The countries in the lower ranks of the index shown little change in the index ranking within seven years. ICT development index values of these countries can be said to be low, consistent with their economic development.

Considering the digital divisions between countries, it can be said that the difference between the ICT level of developing countries and the ICT level of less developed countries are increased. Considering that the ICT has a positive impact on the social and economic development of the countries, it can be concluded that this difference between the groups of countries may open the gap between the other development indicators. However, the difference between developed countries and especially developing countries with high per capita GDP is decreased. Likewise, among the developing countries with relatively low per capita GDP levels in these countries, the digital divide in essential services is relatively reduced by the widespread use of mobile phones and mobile broadband. But, especially, new technology trends such as differences in broadband technologies between countries, big data analysis, artificial intelligence, autonomous robotics technology, cloud computing, cyber-physical systems, the Internet of things are expected to lead to an expansion of the digital divide between countries.

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CORE VISION, STRATEGIC VISION AND VISIONARY LEADERSHIP: A QUALITATIVE FIELD STUDY BY MINTZBERG TYPOLOGY

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ABSTRACT
Purpose - The aim of our study is to reveal the existence and difference of the concepts of strategic vision, visionary leadership and core vision that have been tried to be differentiated since the study of Westlet and Mintzberg (1989).
Methodology - Qualitative research method was used based on the discourses of strategic leaders of logistic enterprises which operate as an important support function at strategic level. Data were analyzed with Nvivo 12 program.
Findings- The results of word tree analyzes of R & D, new and project concepts that emerged in the context of our research as a result of frequency analysis are supportive as they point to the basic concepts that form the core vision of the sector in our research field.
Conclusion- Survival in a chaotic and complex global business world highlights strategic leaders and their strategic visions. However, strategic vision alone is not enough for enterprises to have sustainable competitive advantage.

Keywords: Core vision, visionary leadership, strategic vision, qualitative research, logistics sector.
JEL Codes: L21, M10, M12

VİZYON ÇEKİRDEĞİ, STRATEJİK VİZYON VE VİZYONER LİDERLİK: MINTZBERG TİPOLOJİSİYLE NİTEL BİR ALAN ARAŞTIRMASI

ÖZET
Amaç – Bu çalışmanın amacı Westlet ve Mintzberg'in (1989) çalışmasından bu yana birbirinden ayrıştırılmaya çalışılan stratejik vizyon, vizyoner liderlik ve vizyon çekirdeği kavramlarının varlığını ve farklılığını ortaya çıkarmaktır.
Yöntem - Küresel iş dünyasında stratejik düzeyde önemli bir destek fonksiyonu olarak faaliyet gösteren lojistik işletmelerinin stratejik liderlerinin söylemleri temel alınarak nitel araştırma yöntemiyle betimlenmeye çalışılmıştır. Veriler Nvivo 12 programı ile analiz edilmiştir.
Bulgular- Frekans analizi sonucu araştırmamız bağlamında ortaya çıkan ar-ge, yeni ve proje kavramlarının kelime ağacı analizlerinin sonuçları, araştırma alanımızdaki sektörün vizyon çekirdeğini oluşturan temel kavramlara işaret etmesi nedeniyle çalışmanın varsayımlarını destekleyici niteliktedir.
Sonuç- Kaotik ve karmaşık bir çevre olan küresel iş dünyası içerisinde hayatta kalma zorunluluğu stratejik liderler ve onların stratejik vizyonunu ön plana çıkarmaktadır. Ancak stratejik vizyon işletmelerin sürdürülebilir rekabet avantajına sahip olmaları için tek başına yeterli değildir.

Anahtar Kelimeler: Vizyon çekirdeği, vizyoner liderlik, stratejik vizyon, nitel araştırma, lojistik sektörü
JEL Kodları: L21, M10, M12

1. GİRİŞ

Yaşanan son gelişmeler ışığında rekabet ortamındaki değişim evrimsel olmaktan ziyade devrimsel bir nitelik arz etmektedir. Dünya ekonomisini, sistem yaklaşımı bakış açısıyla işletme ve endüstri sistemlerinin bir üst sistemi olarak ele aldığımızda bu sistemi bir bütün olarak gören, bu sistemin içindeki oyuncuları stratejilerini analiz edebilen kuruluşların, bu bilgiler ile faaliyetlerini kendilerine rekabet avantajı kazandıracak doğrultuda yönlendirebilecekleri beklenmektedir. Günümüzde üretim imkan ve maliyetlerinin ürün bazında birbirine çok yakın değerler arz etmesi, diğer taraftan pazara hızlı çıkış ve paranın zaman değeri gibi kavramlarla birlikte göz önüne aldığında, ürüne odaklı rekabet anlayışının rakipler karşısında yetersiz kalacağı değerlendirilmektedir. Literatürde yer alan çalışmalarda da vurgulandığı üzere lojistik, global işletme dünyasında rekabet gücünün temel belirleyicilerinden birisi olmuştur (Bakkalcı ve Argın, 2013). Dış ticaretin artmasını ve rekabet edebilir olması ülkelere sürdürülebilir bir rekabet gücü sağlamakta ve buna bağlı olarak ekonomik (GSYİH, kişi başı GSYİH) ve ekonomik olmayan (sağlık, eğitim, yaşam kalitesi vb.) refah göstergelerini yükseltmektedir (IMD, 2017; WEF, 2017). Bu noktada uluslararası lojistik firmalarının faaliyetlerini maliyet ve/veya farklılık temeline dayalı rekabetçi bir stratejiyi (Porter, 1980) benimseyerek icra etmesi özellikle gelişmekte olan ülkelerin uluslararası pazarlarda rekabet üstünlüğü elde edebilmesi için kritiktir.

Yukarıda açıklanan bu karmaşık ve yoğun rekabetçi ortamda lojistik hizmet sunan işletmelerin tepe yöneticilerini gerek kendi işletmeleri, gerek hizmet verdikleri işletmeler ve gereke ekonomiye olan etkileri açısından; genel ve rekabet çevresi analizini uzun vadeli perspektifte yaparak gerekli dönüşümleri sağlayabilecek bir stratejik vizyon ve liderlik becerilerine sahip olmalarını gerektirmektedir. Aksi durumda sergileyecekleri zayıf liderlik ve iyileşmeye etki eden vizyon olmaksızın uygulamaya konan değişim hiçbir kazanç getirmeyebileceği gibi işleri daha da kötüleştirebilir. Dolayısıyla literatürde vizyoner lider ve stratejik vizyon başlıklarıyla ele alınan bu kavramların başarılı, ulusal ve uluslararası çapta ön plana çıkmış lojistik hizmet sağlayıcı işletme liderlerinde bulunduğu iddiası bu araştırmanın temel varsayımını oluşturmaktadır. Vurgulanan bu nedenlerle değişen rekabet koşulları bu araştırmayı, Henry Mintberg'in 1989 yılında sunduğu tipolojiyi oluşturan vizyon çekirdeği, stratejik vizyon ve vizyoner liderlik kavramlarını günün şartları bağlamında ve daha kapsamlı olarak tekrar mercek altına almaya yöneltmiştir.

Vizyoner liderlik, liderden lidere önemli ölçüde değişebilir. Liderin tarzı ise vizyonunun içeriği ve rekabet koşulları ve yer aldığı ekonomi gibi kök saldığı bağlamdan dolayı değişiklik gösterebilir. Vizyonun çekirdeği, ürün veya hizmet, pazar, süreç, organizasyon veya idealler üzerine odaklanabilir, çevreyi ikna becerisi ve metaforunu içerir. Öngörülen süreç iç gözlem veya kişiler arası etkileşim yoluyla ateşlenebilir. Lider tarafından önceden tasarlanmış veya öngörülmemiş, acil olarak deneyimlenebilir. Yoğunluğu ve süresi değişebilir. Olasılıklar muazzam derecede çeşitlidir. Öte yandan diğer liderler, diğer kategorileri açığa çıkarabilir veya deneyimleyebilir. Bu nedenle, vizyoner liderlik, psikolojik sürprizler, sosyolojik dinamikler ve zamanlamanın şansa dayalı gerçeğini içerir. Stratejik vizyon ise stil, süreç, içerik ve bağlamdan kısmi unsurlar içerir. Gerçek stratejik vizyondan doğar ve yapılır, ancak kendiliğinden üretilmiş değildir. Bunlar, tarihsel anın ürünüdür (Westley ve Mintzberg, 1989). Diğer bir ifadeyle tarihsel perspektifte deterministik olarak gelişen zaman kesitlerinin çıktılarını içerir.

Bu kavramsal çerçevenin ışığında çalışmamızın amacı literatürde sıklıkla birbirinin yerine kullanılmasına rağmen Westlet ve Mintzberg'in (1989) çalışmasından bu yana birbirinden ayrıştırılmaya çalışılan stratejik vizyon ve vizyoner liderlik kavramının varlığını ve farklılığını ortaya çıkarmaktır. Bu amaç doğrultusunda, gelişen ve globalleşen iş hayatında vizyoner liderlerin yarattıkları farklılığın somut bir şekilde ortaya çıkarılabileceği varsayımı ile, bir destek fonksiyonu olmasına rağmen stratejik düzeyde önemi olan ve üretimle ilişkili tüm reel sektörleri destekleyen lojistik işletmelerinin stratejik liderleri bu araştırmanın çerçevesine dahil edilmiştir. Bu bağlamda söz konusu kavramların varlığı ve farklılığı lojistik ve taşımacılık sektöründeki işletmelerin stratejik liderlerinin söylemlerini temel alarak nitel araştırma yöntemiyle betimlenmeye çalışılmıştır.

Bu çerçevede giriş bölümünün ardından konuyla ilgili temel kavramlara dair literatür özeti verilerek araştırmanın genel çerçevesi çizilecektir. Üçüncü bölüm araştırma metodolojisine ayrılmıştır. Dördüncü bölümde araştırmanın bulgularının verilmesinin ardından bulgulara dair yorumlar ve tartışma son bölümde yapılandırılmıştır.

2. LİTERATÜR İNCELEMESİ

2.1. Liderlik

Liderlik, üzerinde en çok çalışma yapılan örgütsel davranış ve yönetim konularından bir tanesidir. Ancak, farklı disiplin ve yaklaşımlar tarafından yapılan bu çalışmalarda liderlik kavramının tanımı üzerine bir uzlaşma sağlanamamıştır. Liderlik tanımları liderin yetenekleri, kişilik özellikleri, nüfuz ilişkileri, bilişsel ya da duygusal yönelimi, bireysel ya da grupsal yönelimi ve kişisel ya da topluluçu çıkarlar gözetmesine yapılan vurgu açısından da farklılık göstermektedir. Dünya literatürüne 14. yüzyılda giren ancak son yüzyıllarda sıklıkla kullanılan "lider" kelimesi; yol gösteren, aydınlatan, ileriyi gösteren, öğreten, birlikte çalıştığı kimselerin istek ve ihtiyaçlarını zamanında sezen yaratıcı kimse olarak tanımlanabilir (Saruhan ve Yıldız, 2009).

Liderlik ve liderlik etkinliği, 20. yüzyılın başlarından beri yönetim alanında araştırmacıların odak noktasındadır. Araştırmacıların liderlik konusundaki sürekli ilgisinin bir sonucu olarak liderlik stilleri olarak adlandırılan bir dizi liderlik davranışı tespit edilmiştir. Bu liderlik davranışları arasında karizmatik liderlik, işlemsel ve dönüşümsel liderlik, etik liderlik ve vizyon sahibi liderlik daha öne çıkmaktadır (Dhammika, 2014). Liderlik, bireylerin farklı durumlarda nasıl tepki vereceği ve kendilerini nasıl ele alacakları konusunda önemli bir rol oynamaktadır (Daft, 2005). Genellikle, bir organizasyondaki her kişi bir patrona sahiptir, yüksek mevkideki bireylerin bile rapor ve hesap vermesi gereken üstleri veya patronları vardır. Bunun sebebi çoğu kişinin liderlik etmek yerine takip etmeye eğilimli olmasıdır.

Önceki araştırmalarda, çoğunlukla vurgulanan liderlik tipleri, bireysel liderlik ve stratejik liderliktir (Avery, 2004). Hızlı değişen endüstri gereksinimlerine göre ve rekabet avantajı kazanmak için kuruluşların vizyon temelli liderlik üzerine araştırma yapmaları önerilir (Bass & Stogdill, 1990; Conger, 1991; Tichy, 1986). Bunun yanında, öncelikle dört tutum hedeflenmiştir: ilerleme, açık ifade, bağlantı ve uygulama. Geçmişte yapılmış araştırmalarda, takipçinin rolü araştırmacılar tarafından büyük ölçüde göz ardı edilmiştir (Cheema, Akram ve Javed, 2015). İyi bir lider, problem tanımı geliştirmede önemli bir rol oynar, ancak tek başına bir rol oynamaz. Paylaşılan bir problem tanımının geliştirilmesi, personelin ve paydaşların katıldığı anlamı birlikte inşa eden bir süreçtir ve fikir birliği oluşturulmasını gerektirir. Toplu anlayış ve satın alma tek taraflı olarak üstten empoze edilemez. Sorunlar ortaya çıktığında, liderliğin rolü açıklık, ilham ve güvenilirlikle iletişim kurmak ve daha iyi bir vizyon oluşturmaktır (Archbald, 2013).

2.2. Vizyon

Geleceğin neye benzeyeceğini tespit etmek kadar güç olan vizyonu belirleme isinin kolayca başarılabileceğini iddia etmek mümkün değildir. Vizyon, gelecekte yapılması düşünülen tüm faaliyetlerin değerlendirilmesi, tanımlanması, açıklanması ve paylaşılması sürecidir. Vizyon bildirisi olarak ortaya konan her gelecek resminin kesin bir doğruluk taşıdığını söylemek de zordur. Vizyon, belirlenmesi dâhiyane bir iştir. Geçmişi tekrarlamanın gelecekteki başarıyı güvence altına almayacağını kavramadan hiçbir organizasyon geçmişin bir bölümünü terk edemez. Geçmişin çekim kuvvetinden kurtulabilmek için yöneticilerin ve yönetilenlerin gelecekteki başarının kaçınılmaz olduğuna ikna olması gerekir.

Vizyon, liderin yeniliğe, orijinalliğe ve yaratıcılığa bakış açısıdır. Burada lider, personelin görüşlerinden ve katkılarından ilham alır, değişime ve geleceğe dönük fotoğraf çeker. "Başarılı liderlerin zihninde stratejik bir amaç vardır. Bu onun kafasını sürekli meşgul eder ve uzun süre bu fikri gerçekleştirmek için vizyon arayan bir yaklaşım içindedir" (Ülgen ve Mirze, 2004). Vizyon gerçekçi, inanılır, çekici bir gelecektir. Vizyon, insanların geleceği neden yaratmaya çalıştıklarına dair bazı örtük veya açık yorumla geleceğin bir resmini ifade eder (Kotter, 1996). Etkili tüm liderlerin temel özelliklerinden biri, nereye gitmeye çalıştıklarına dair bir vizyona sahip olma ve onu potansiyel takipçilere açıkça ifade etme yeteneğidir; böylece bu vizyona ulaşma konusundaki kişisel rollerini bilirler (Wilhelm, 1996). Vizyon doğal olarak iletişimsel bir işlemdir. Vizyon şu andaki gerçekliğe dayanmaktadır ve şu andan çok farklı olan bir geleceğe ilişkin bir gerçekliktir (Burtis ve Pond-Burtis, 2001).

Araştırmacılar, vizyonun takipçilerin kendine güvenlerini olumlu etkilediğini ortaya koymuşlardır. Takipçiler vizyona ulaşmak için motive olurlar, çünkü anlamlı bulurlar, onunla özdeşleşirler ve vizyona ve bunlara ulaşma yeteneklerine inanırlar (Dhammika, 2014). Küreselleşen rekabet ortamında başarılı olmak, geleceğin bugüne yansıması olan vizyon olgusuna bağlıdır. Organizasyonel bağlamda vizyon ise örgüte yönelik hayal edilen geleceği tasarlayabilme, geliştirebilme ve paylaşabilme kapasitesidir. Bununla birlikte örgütsel geleceğin resmedilmesi de diğer önemli bir unsurdur. Senge' in vizyon tanımlaması ise bu görüşü desteklemektedir. Senge'e göre vizyon bir organizasyonun geleceğe yönelik hedeflerinin belirtilmesidir. Vizyon gidilecek yolu gösteren, geleceğe biçim ve yön veren ve hedeflere ulaşıldığındaki reel durumu ortaya koyan bir olgudur (Tekin ve Ehtiyar, 2011).

2.3. Vizyoner Liderlik

Vizyoner lider, geleceğe uzanan vizyonuyla stratejik tercihlerini birleştirebilen kişidir. Ayırt edici özelliği; vizyon, strateji, mali politika, pazar odaklılık, ürün ve hizmetler, kurum kültürü gibi "liderlik silahları"nı, şirketin rakiplerinden farklı ve kalıcı kılmak için kullanmasıdır. Bunun için, kısa dönemli sonuçlarla uzun dönemli bakısı bağdaştırması ve çok seçenekli ve geniş bir perspektif benimsemesi gerekir. Her organizasyon tarafından 4 liderlik yetkinliği ihtiyacı vardır; bunlara aşağıdakiler dahildir: 1) Çevre konusunu ve insanları anlamanın duyusu; 2) Örgüt içinde ve arasında ilişki kurulmasını anlamlandırmak; 3) Geleceğin kabul edilebilir resmini yapmak için vizyonlama, 4) Vizyonu gerçekleştirmek için yeni kuralların geliştirilmesini sağlamak (Yordsala, Tesaputa ve Sri-Ampai, 2014). Vizyoner liderlik, bireysel ve grup eylemi için belirlenmiş hedefler ve amaçlarla yaptığımız ya da yapmak istediğimiz şeyleri tanımlayan bir yaklaşımdır. İlham veren vizyon öteki liderlik biçimlerinden ayrılır ve lider bu vizyonu alt bölümlere ilettiği zaman örgütlerin iyiden iyiye doğru hareket ettiği söylenir (Jul-Chan ve Colin, 2004).

Vizyoner liderlik, mevcut durumu açıklığa kavuşturan ve daha iyi bir gelecek için güveni uyandıran arzulanan bir durumun ortaya çıkışını sağlayarak ve ileterek örgütlerde olumlu sonuçları ortaya çıkarmaktadır (Conger, 1991 aktaran Dhammika, 2014). Vizyoner liderlik davranışı, vizyon geliştirme ve iletişimin ötesine geçmekte ve liderlik teorileri arasında farklılık göstermektedir. Vizyoner

liderliğin, liderin güvenine, lidere yüksek bağlılığa, takipçiler arasında yüksek düzeyde performansa ve genel olarak yüksek kurumsal performansa neden olan takipçi sonuçları üzerinde olumlu etkileri olduğu söylenir (Kirkpatrick ve Locke, 1996). Vizyoner liderlik, karizmatik liderliği, vizyoner liderliği ve kültürel liderliği kapsayan geniş işlemsel liderlikten geliştirilmiştir. Vizyoner liderlik makro bağlamda incelendiğinde, kültürel faktörler ortaya çıkar ve bu unsurlar sektörel kalkınmada önemli bir engel oluşturabilir. Kültürel uygulamalar ve inançlar derinden gömülüdür ve ulusal kimlik konularını içerdiğinden, bu kültürel engelleri ele almak düşük gelirli ülkelerin vizyon sahibi, ev sahibi liderleri yetiştirmesini gerektirir. Kendi ülkelerindeki şirketleri yenilikçi, esnek ve rekabetçi şirketlere nasıl dönüştüreceklerini bilenler işte bu vizyon sahibi liderlerdir. Vizyoner liderlik, dönüşümcü bir liderlik türü gibi düşünülür ve şirket standartlarını karşılama görevini hızla yerine getirebilme becerisine sahiptir (Breevaart ve diğerleri, 2014). Dikkat çekici bir liderin her zaman çalışanlarını çalışmalarına güçlü bir şekilde dahil etmesi beklenir; böylece çalışan, motive olmuş, duygusal olarak bağlı, geleceği taahhüt eder ve liderlerinin katkısıyla gelecek vizyonunu anlamış olur (Kantabutra ve Avery, 2011). Farklı araştırmalar, "vizyon" liderlerinin kârı başarıya taşımak için büyük bir role sahip olduğu sonucuna varmıştır (Breevaart ve ark., 2014). Vizyoner liderler yeteneklerini birçok farklı kaynaktan edinebilir; Güçlü vizyon ve motive olmuş çalışanlar, ana unsurlardan ikisidir (Kantabutra ve Avery, 2011). Vizyoner liderlikte, liderin odak noktası gelecek misyonu ve işinde en iyisini yapmaya devam eden süreçtir.

Çalışanların liderlerinin vizyonuna angaje olmaları, gelecekteki vizyonun istenen sonuçlarını elde etmek için çok önemlidir; çalışanın motivasyonu ne kadar fazla olursa o kadar etkili sonuçlar ortaya çıkacaktır (Kantabutra & Avery, 2011 aktaran Cheema, Akram ve Javed, 2015). Vizyoner liderliğin 5 ilkesi vardır: 1) liderlerin performansı, zorlu iş, yenilik yaratma ve başkalarını yeni insiyatif kullanma konusunda geliştirme ve sınırları aşan düşünme tekniği 2) başkaları ile paylaşılan vizyon geliştirerek ilham kaynağı ve coşku ortaya çıkarmak; 3) ekip çalışmasının teşvik edilmesi ve diğerlerinin desteklenmesi; 4) Başkaları için iyi bir örnek teşkil etmek; 5) ruhsal çalışmada nihai başarı (Bennis, 1997). Vizyoner lider mevcut durumu anlar, hedef durumunu anlar, hedeflerin beklentileri karşılayacağına inanır, mevcut durum ile hedef durum arasında bir boşluk olduğuna inanır, hedef duruma ulaşmanın mümkün olduğuna inanır, bunun başarılması için katlanılması gereken maliyetleri bilir. Hedef duruma ulaşır (Archbald, 2013).

2.4. Gömülü Kuram

Gömülü kuram araştırılan olgu ile ilgili bireylerin davranışlarının ve inançlarının ne olduğu anlaşılmaya çalışılmaktadır. Gömülü kuram ile gömülü halde olan esas kategoriler araştırılarak davranışların nedenini açıklayan teoriler geliştirilmektedir. Bu yöntemde kavramların yaratılması veya oluşturulması oldukça önemli olduğu için, kavramlar ve kavramlar arasındaki karşılıklı ilişkilerle ilgilenilmektedir (Kocabıyık, 2016). Gömülü kuram ortaya çıktığı 1967 yılından bu yana önemli bir değişime uğramamıştır. Yöntem pratikte geliştikçe prosedürlerin özgüllüğü detaylandırılmıştır. Gömülü kuram prosedürleri, sosyal fenomenlerin teorik açıklamasını eksiksiz bir biçimde sağlayan entegre edilmiş kavramlar geliştirmek için tasarlanmıştır. Gömülü kuram sadece özel koşullarla ilgili olarak, belirli bir düzeye kadar öngörülebilirlik sağlayabilir (Corbin ve Strauss, 1990). Nitel araştırmalarda önemli araştırma yöntemleri olarak görülen olgubilim ve gömülü kuram yöntemlerinin bir arada ele alınıp incelenmesi gerekli görülmektedir (Kocabıyık, 2016). Mevcut çalışmanın nitel araştırma metodolojisini destekleyen gömülü teori hem bir araştırma stratejisi hem de veri çözümleme yoludur. Temellendirilmiş bir kuram keşfetmedeki temel fikir verilerde asıl önemli olan şeyi açıklayan yüksek bir soyutluk derecesine sahip fakat verilere dayanan merkezi bir kategori bulmaktır. Araştırmacı kodların üç temel kategoride toplandığını belirtmiştir. İlk kod düzeyi, soyutlama düzeyinde verilerdeki kavramsal kategorileri bulmaktır. Diğer kod düzeyi ise bu kategoriler arası ilişkileri bulmaktır. Son kod düzeyi ise daha yüksek bir soyutluk düzeyinde bu ilişkileri kavramlaştırmak ve açıklamaktır (Ilgar ve Ilgar, 2013).

3. METODOLOJİ

3.1. Araştırma Tasarımı

Araştırmamız epistemolojik tabanda nitel araştırma yöntemlerinden içerik analizi deseni ile desteklenmiştir. Bu yaklaşımla araştırmamızın bulguları yorumsamacı ve dışsal perspektiflerle ele alınmıştır. Lojistik sektöründe faaliyet gösteren firmaların yöneticilerinin demeç ve mülakatları derlenip ikincil veri olarak araştırmamızda kullanılmıştır. Veriler Nvivo 12 programı ile analiz edilmiştir.

3.2. Araştırmanın Çerçevesi

Uzun bir süredir resmi veri üretilmeyen Türkiye lojistik sektörünün (ulaştırma ve depolama) büyüklüğü 2016 yılında yapılan çeşitli sektörel çalışmalarda ülke GSYH'nin kabaca % 12 olduğu tespit edilmiştir. Bu oran 2018 yılı GSYH'sine uyarlandığında karşımıza 444 milyar TL'lik bir büyüklük çıkmaktadır. Ancak, bu değer içerisinden yolcu ve boru hattı taşımacılığı çıkarıldığında ise büyüklük 220-230 milyar TL olmaktadır. Ancak GSYH hesaplamasında üretim ve ticaret şirketlerinin kendi gerçekleştirdiği lojistik faaliyetler,

şirketlerin ana faaliyetleri kapsamında değerlendirilmektedir. Bu potansiyel kısım da dâhil edildiğinde lojistik pazar büyüklüğü yaklaşık 350 milyar TL olarak öngörülebilir.

Sektörün yıllık büyüme hızı 2000'li yıllarda %10'un üzerinde gerçekleşmiş olup uluslararası kimliğiyle turizmden sonra ikinci büyük hizmet ihracatını gerçekleştirerek ulusal ekonomiye önemli katkılar sağlamaktadır. Bunun yanında TUİK Hane Halkı İşgücü Anketi 2017 verilerine göre 28,189 milyonluk toplam istihdamın 1,235 milyonu ulaştırma ve depolama iş kolunda yer almaktadır (UDHB, 2018). 2017 yılı sonu itibariyle yetki belgeli firmalar bünyesinde yük taşıma yetki belgeli taşıt sayısı 1.240.543 olup (UDHB, 2018), bunlar arasından 838.718 adedi muhtelif büyüklerde çekici, kamyon vb. araç yurtiçi ve yurtdışı taşımacılık faaliyeti yürütmektedir (UDHB, 2018). Dolayısıyla araştırma çevremizi oluşturan Lojistik (ulaştırma ve depolama) sektörü özellikle stratejik yönetim alanının çeşitli dallarında incelemeye değer görülmüştür.

TUİK verilerine göre sektörün %95'i KOBİ niteliğinde firmalardan oluşmaktadır. Sektörün en büyük 10 firması ise toplam işlem hacminin yarısından fazlasını gerçekleştirmektedir. Bu kapsamda, Araştırmamızda ülke içerisinde gerek gelirler, gerek istihdam ve gerekse araç parkı açısından ilk 10'a giren ve tamamı uluslararası çapta faaliyet gösteren lojistik hizmet sağlayıcı firmaların üst düzey yöneticilerinin 2010 yılından itibaren verdikleri demeçler dikkate alınmıştır.

4. BULGULAR

Bu araştırmada kullanılan veriler Nvivo 12 programı ile frekans ve kelime ağacı analizine tabi tutulmuştur. Bu doğrultuda, öncelikle frekans analizi yapılıp sonrasında öne çıkan kavramların kelime ağacı analizi ile öncülleri ve sonuçları incelenmiştir. Tablo 1'de, Mintzberg'in bakışıyla vizyon çekirdeği, stratejik vizyon ve vizyoner liderlik kavramlarının boyutları ve alt boyutları ortaya konmuştur. Bu kavramlar çalışmamızın bulgularıyla örtüştürülmüştür. Diğer taraftan, vizyoner liderlik ve stratejik vizyon ikileminde oluşturduğumuz varsayımımız sonucu ''Ar-Ge'' kavramını analiz etmeyi uygun gördük.

Tablo 1: Mintzberg'in bakışıyla Vizyon Çekirdeği, Stratejik Vizyon ve Vizyoner Liderlik

Temel Konseptler			Tekrar
Vizyon Çekirdeği	Ürün/hizmet, pazar, süreç, organizasyon, idealler	Hizmet	100
		Ürün	14
		Pazar (Müşteri)	28
		İdealler	
		• Ar-Ge	87
		• İnovasyon	38
		• Teknoloji	33
		• Büyüme	33
		• Değer	41
		• Çevre	34
		• Marka	16
Stratejik Vizyon	Stil, süreç, içerik, bağlam	Stil	
		• İnsan	8
		Süreç	
		• Yeni	103
		• Proje	49
		• Yatırım	38
		İçerik	
		• Lojistik çözümler	
		• Lojistik merkezler	44
		• Lojistik maliyetler	29
		• Lojistik hizmet kalitesi	30
			21
		Bağlam	
		• Lojistik	378
		• Türkiye	184

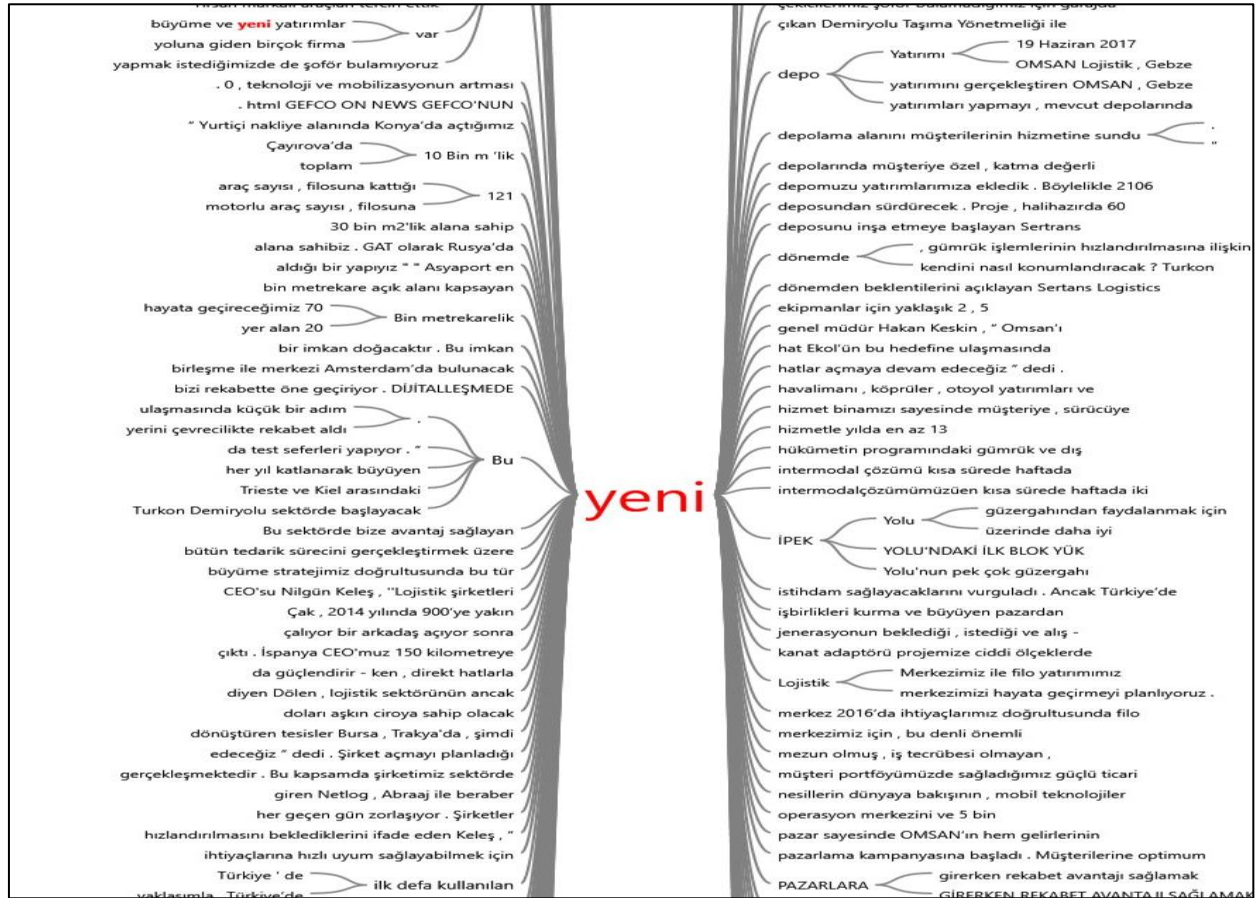|			
		• Uluslararası	48
		• Sektör	378
		• Strateji	17
Vizyoner Liderlik	Psikolojik sürprizler, sosyolojik dinamikler, zamanlamanın şansa dayalı gerçeği	Sosyolojik dinamikler • Dijitalleşme Zamanlamanın şansa dayalı gerçeği • Hız	14 46

Çalışma grubundan elde edilen verilerin frekans analizleri sonuçlarına göre sıklıkla karşılaşılan kavramlar Tablo 1'de görülmektedir. Bu kavramlar araştırma alanımız dahilindeki teori ve kavramları kapsaması nedeniyle çalışmamızın güvenilirliğini desteklemektedir. Bu kavramlar kelime ağacı ve kodlama analizleriyle derinlemesine incelenmiştir. Araştırmamızın varsayımı kapsamında ortaya konulan vizyon çekirdeği, stratejik vizyon ve vizyoner liderlik temel konseptleri faktör ve alt boyutlara ayrılmaktadır. Vizyon çekirdeği öncelikle ürün/hizmet, pazar, süreç, organizasyon, idealler faktörlerinden oluşmaktadır. Hizmet, ürün, pazar (müşteri) tek boyutlu çıkmıştır ancak idealler faktörü yedi alt boyuttan oluşmaktadır. Bunlar; ar-ge, inovasyon, teknoloji, büyüme, değer, çevre ve marka kavramlarından oluşmaktadır. Şekil 1'deki analiz sonuçları ise; ar-ge merkezleri, inovasyon, ar-ge projeleri ve teknoloji gibi kavramların bu çatı altında toplandığını göstermektedir. Liderlerin söylemlerinden oluşan verinin analizi sonucu vizyon çekirdeğinden idealler boyutuna ait konulara odaklanmış oldukları ortaya çıkmıştır. Bu bağlamda liderlerin vizyon çekirdeğine yöneldikleri savı desteklenmiştir.

**Şekil 1: Ar-Ge Kavramının Kelime Ağacı Analiz Sonuçları**
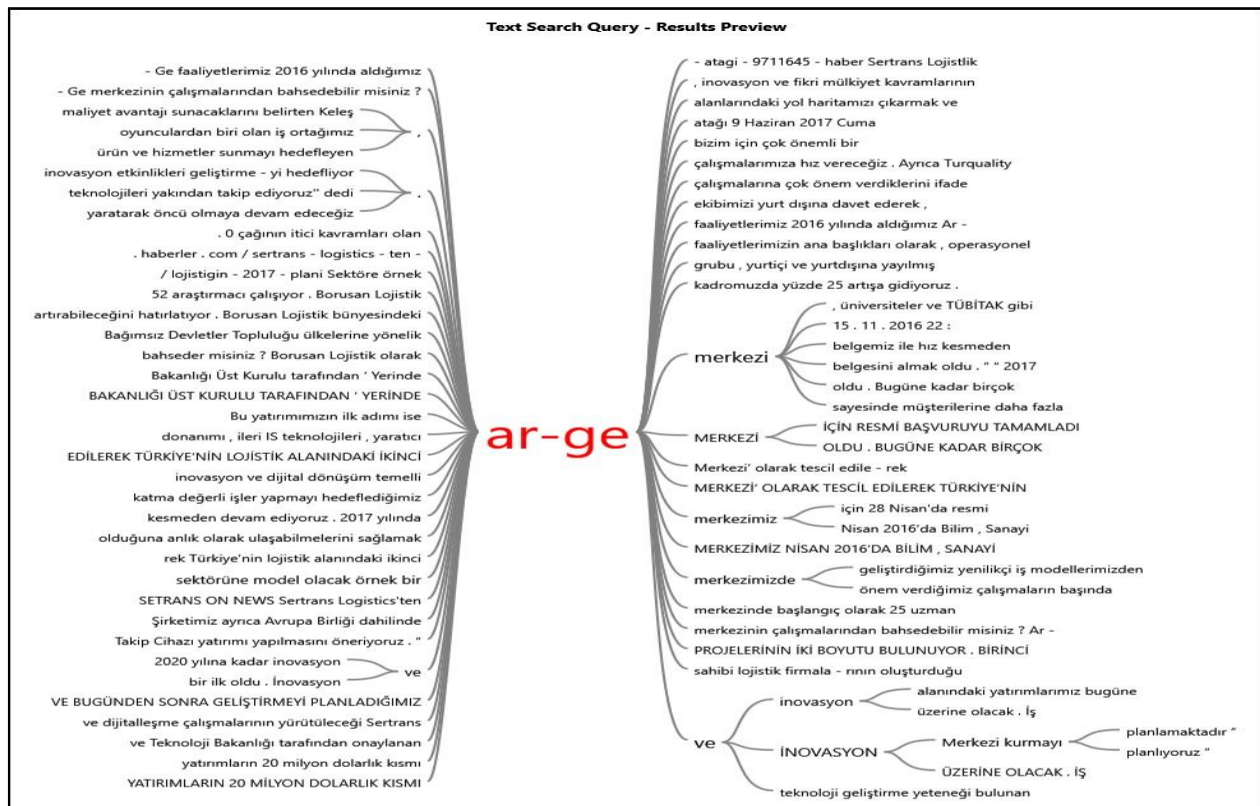
Stratejik vizyon temel konsepti; stil, süreç, içerik, bağlam faktörlerinden oluşmaktadır. Stil faktörünün alt boyutu; insan, süreç faktörünün alt boyutları; yeni, proje ve yatırım, içerik faktörünün alt boyutları; lojistik çözümler, lojistik merkezler, lojistik maliyetler, lojistik hizmet kalitesi, bağlam faktörünün alt boyutları; lojistik, Türkiye, uluslararası, sektör ve strateji kavramlarından oluşmaktadır. Şekil 2'de görülmekte olan "yeni" kavramının analiz sonuçlarına göre; depo, ipek yolu, intermodel çözüm, pazar, teknoloji, yatırım ve yetenek gibi kavramlar bu çerçevede ortaya çıkmıştır. Liderlerin söylemlerinden oluşan verinin analizi sonucu vizyon çekirdeğinden idealler boyutuna ait konulara odaklanmış oldukları ortaya çıkmıştır. Bu bağlamda liderlerin stratejik vizyona yöneldikleri savı desteklenmiştir. Çok rekabetçi ve makro ekonomik açıdan stratejik öneme sahip olan lojistik sektöründe son yıllarda yaşanan çalkantılı ekonomik döneme rağmen ayakta kalmayı başarabilmiş ve halen sektörün üst sıralarında yer alan firma yöneticilerinin söylemlerinde ortaya çıkan bu bulgular örgütsel gelişim ve değişim sürecinde destekleyici ve katkı sağlayıcı niteliktedir.

Şekil 2: Yeni Kavramının Kelime Ağacı Analiz Sonuçları

Vizyoner liderlik temel konsepti; psikolojik sürprizler, sosyolojik dinamikler, zamanlamanın şansa dayalı gerçeği faktörlerinden oluşmaktadır. Sosyolojik dinamikler; dijitalleşme alt boyutundan oluşurken, zamanlamanın şansa dayalı gerçeği ise hız alt boyutundan oluşmaktadır. Şekil 3'de görülmekte olan "proje" kavramının analiz sonuçlarına göre; multimodel, online veri aktarımı, değer, müşteri memnuniyeti ve operasyonel mükemmellik gibi kavramlar bu çerçevede ortaya çıkmıştır. Liderlerin söylemlerinden oluşan verinin analizi sonucu vizyon çekirdeğinden idealler boyutuna ait konulara odaklanmış oldukları ortaya çıkmıştır. Bu bağlamda liderlerin vizyon çekirdeğine yöneldikleri savı desteklenmiştir.

Şekil 3: Proje Kavramının Kelime Ağacı Analiz Sonuçları
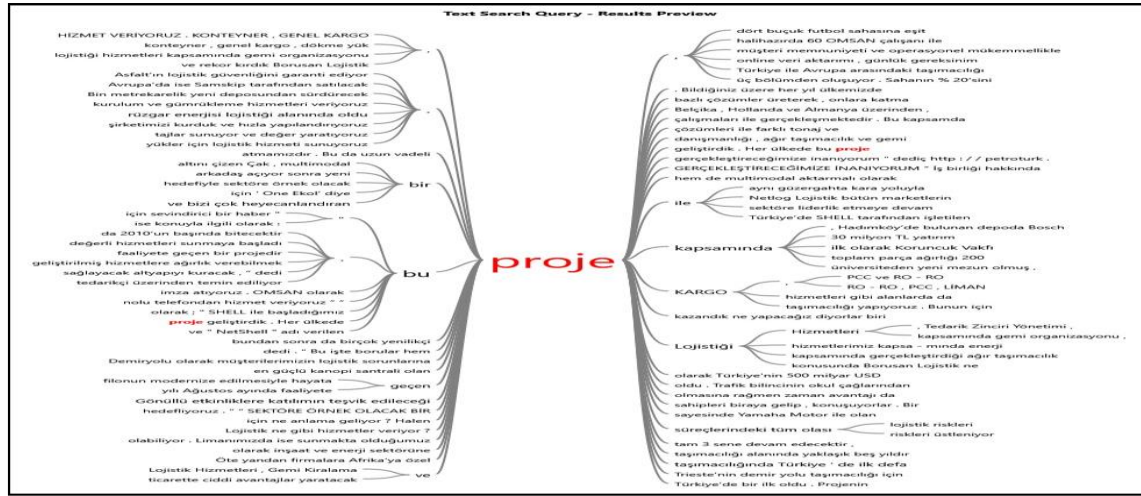
5. SONUÇ VE ÖNERİLER

Araştırmamız, Mintzberg'in ortaya koyduğu vizyoner liderlik ve stratejik vizyon ikileminden yola çıkarak bu çerçevede işletme yönetimindeki güncel değişimlere uygun bir varsayım oluşturmuştur. Vizyoner liderlerin, ileride yapılacak değişikliklere neden olan yenilik yapma kapasitesi de dahil olmak üzere, belirli bir yönde çalışacak personel için yönerge olarak kesin vizyona sahip olmaları gerekiyordu. Vizyoner liderlerin vizyon gereksinimleri şunlardır: Vizyoner iletişim, örgüt ve çevre anlayışına dayalı davranış tarzı, geleceği şekillendiren açık fikirli düşünce, ekip çalışmasının yanı sıra şebeke oluşturma yetkinliği ve mükemmel çalışma desteği için kültür geliştirme, insanların ve katılımın önemini kabul eden, iki yönlü iletişim yoluyla insanlarla etkileşim geliştirme yetkinliği (Kananurak, 2011; Elumti, Minnis ve Abebe, 2005; Pounder, 2001; Tepsaeng, 2009 aktaran Yordsala, Tesaputa ve Sri-Ampai, 2014).

Araştırmamızın kapsamındaki liderlerin söylemlerinde vizyon çekirdeği bağlamında hizmet/ürün, pazar ve idealler (Ar-Ge, inovasyon, teknoloji, büyüme, değer, çevre ve marka) boyutlarını keşfettik. Diğer taraftan stratejik vizyon bağlamında stil (insan), süreç (yeni, proje ve yatırım), içerik (lojistik çözümler, lojistik merkezler, lojistik maliyetler ve lojistik hizmet kalitesi) ve bağlam (lojistik, Türkiye, uluslararası, sektör ve strateji) boyutlarını ortaya çıkardık. Son olarak vizyoner liderlik bağlamında sosyolojik dinamikler (dijitalleşme) ve zamanlamanın şansa dayalı gerçeği (hız) boyutlarını keşfettik. Sektörde giriş engellerinin düşük olması ve özellikle uluslararası oyuncuların yerli pazara girmesi nedeniyle karlılıklar düşmüş ve rekabet oldukça artmıştır. Bu bağlamda fiyat bazlı rekabetten kaçmak için sektörün önde gelen oyuncuları ar-ge, yenilik ve inovasyon üzerine odaklanarak stratejilerini farklılaştırmaya doğru yönlendirmektedir. Bu araştırmanın bulguları da bu güncel eğilimi desteklemektedir.

 Yukarıda değindiğimiz gibi sektörde farklılaştırma stratejilerine doğru bir yönelim bulunmaktadır. Rekabetin yoğunlaştığı günümüz şartlarında ekonomik açıdan sürdürülebilir olabilmenin yöntemlerinden birisi de büyümeye devam etmektir. Büyüme stratejilerini büyüme vektörü bağlamında değerlendirdiğimizde, sektördeki firmaların pazara nüfuz etme stratejilerinden yeni pazar ve yeni ürün/hizmet alanlarına doğru hareket ederek, ürün/hizmet ve pazar geliştirme stratejilerini uygulamaya başladığı görülmektedir. En gözde fiziksel dağıtım kanalı olan ipek yolu, yeni pazarlara erişmek anlamında açılacak yeni depo/dağıtım merkezleri, müşterilere yeni sunulacak hizmetler çerçevesindeki teknolojinin bulgularımızda ön plana çıkması bu stratejik yönelimi desteklemektedir. Taşımacılık bakış açısından lojistik bakış açısına evrilen sektör, globalleşmenin arttığı son 20 yılda tedarik zinciri bakışına geçişi tamamlamak üzeredir. Tedarik zinciri Porter'ın (1980) öncülüğünü yaptığı bazı araştırmacılar tarafından değer zinciri olarak da adlandırılmaktadır. Bu kavramın özü, hammaddenin elde edilmesinden nihai ürünün son müşteri nezdinde bir değer atfedecek şekilde sunumuna kadar geçen süreçleri içermektedir. Bu süreç içerisinde en önemli performans kriterleri zaman ve maliyettir. Bu bağlamda, farklı taşımacılık modlarının kullanıldığı intermodalite, ürünün izlenebilirliğini sağlayan dijital veri akışı, müşteri memnuniyetini sağlayacak şekilde bir değer akımını en hızlı ve en uygun maliyetle yapılabilmesine aracı olmaktadır. Bu bulgularımız, araştırma alanımızdaki sektörün vizyon çekirdeğini oluşturan temel kavramlara işaret etmesi nedeniyle destekleyici niteliktedir.

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ORGANISATIONAL CULTURE AS A TOOL FOR MANAGING A MULTIGENERATIONAL WORKFORCE IN PROJECT MANAGEMENT

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ABSTRACT

Purpose - This study proposes a best practice organisational culture for managing the multigenerational workforce in project management. Organisational culture is an important tool for managing employees therefore it is quite useful for managing generational differences
Methodology – The relevant literature about organisational culture, its effects on project management and X & Y generations, are compared and contrasted.
Findings- Five aspects of organisational culture: *Result Orientation, Decentralized Decision Making and Low Levels of Hierarchy & Bureaucracy, Encouraging Innovation & Autonomy and Not Having Standardized Procedures, Learning Environment* and *High Level of Integration and Communication within the Organisation* are identified as decisive for managing a multigenerational workforce.
Conclusion- Generational differences are an area of concern with the increasing participation of Y generation into the workforce. Employee commitment and satisfaction are highly influential on productivity therefore they should be handled with care. Organisational culture can be used as a tool for generating an ideal workplace for a multigenerational workforce.

Keywords: Project management, organisational culture, multigenerational workforce, generation X, generation Y
JEL Codes: M10, M12, M14

1. INTRODUCTION

People have different expectations from their lives, from their careers and from their jobs. Some expect power, some expect money, some expect autonomy and for achieving what they desire they go through different ways. The different expectations are shaped by one's conception of the world which is a result of his/her character. Being born in different generations and growing in different environments are influential on character development (Scar & McCartney, 1983). The characteristic differences between generations affect their expectations and priorities.

Employees from different generations are working together in organisations and soon the younger generations will be the majority. The aging part of the workforce is highly active in senior level management positions compared to the younger generations. When older generations face the challenge of managing younger generations, conflicts occur. Organisational culture is essential in comprehending the employee behaviours, desires and interactions (Alvesson, 2002). Organisational culture can roughly be defined as the normal way or style of doing things in an organisation which is encouraged by the more experienced workers (Kotter & Heskett, 1992). This is why the organisational culture can be a setback or a challenge for the newcomers, especially if there are generational differences between the experienced workers and newly recruited.

Organisational culture could be a useful tool in managing the differences between generations however, how the different generations would fit into the conventional organisational cultures is a matter of question. Organisations like Google and many others try to address the methods and expectations of younger generations by building more flexible organisational cultures. In a project management perspective, he importance of organisational culture is critical for achieving successful project delivery (Suda, 2006).

The majority of the current workforce are the X (born between the years 1965-1980) and Y (born between the years 1981-2000) generations (UNJSPF, n.d.). When talking about today's multigenerational workforce the two main actors are these two generations.

The older generations such as the Baby Boomers (1946-1964) or the Traditionalists (1925-1945), have been participating in the workforce for decades which make them easier to be managed compared to the newer generations. Numerous studies have been done analysing the differences between generations in terms of their expectations and preferences (Myers & Sundram, 2012; Schoch, 2012) however the there are no studies in a project management framework.

The main motivation behind conducting this research is to discover the influence of generational differences on project management and propose a best practice in terms of organisational culture to deal with the multigenerational workforce. To narrow the scope on different generations, the X and Y Generations are chosen since they consist the majority in the current workforce all around the world. Each generation has its own qualities, strengths and weaknesses. Identifying these characteristics would enable the managers to minimize the conflicts and maximize the efficiency in multi-generational teams especially in project management where teams have great importance on project delivery.

Following this introduction, this paper proceeds as follows. The next section provides the methodology and the literature regarding organisational culture. Section 3 introduces fundamental project management tools and techniques and Section 4 presents the findings and the discussion. Finally, Section 5 concludes this study.

2. RESEARCH METHODOLOGY AND LITERATURE

The relationship between generational differences and project management is an area which has not been studied before so the two subjects has to be investigated separately for establishing links. The investigation is done through reviewing the existing literature. The literature review provides the required information for being able to comprehend the subjects subject to discussion. The findings from the current literature, about X and Y generations and managing a multigenerational workforce, are reviewed so that the preferences and expectations of each generation can later be addressed by the appropriate aspects of organisational culture.

Three main types of literature review are widely recognized, which are: Narrative Review of the Literature, Systematic Review of the Literature and Meta-Analytic Review of the Literature (Cronin, et al., 2008).

In this study, a systematic literature review is conducted. The fundamental theories are reviewed about organisational culture such as Schein's layered model for organisational culture, Handy's typology of cultures or Burns & Stalker's classification of organisations in terms of their openness to change and flexibility. For being able to understand the organisational culture and its influence on project management, comprehending the fundamental theories is essential.

2.1. Systematic Review of the Literature

Systematic reviews have a well-defined scope of literature and mostly used for reaching conclusions about objectives which have a narrower focus. A system is built for selecting literature such as studying a subject by chronologically reviewing the studies written about the subject. The reviewer investigates the development of theories through history by paying attention to the dates of the articles and books which were written about the chosen topic. The systematic reviews aim to provide the reader with a list of all studies done in the regarding matter both published and unpublished. (Cronin, et al., 2008)

The literature review is conducted to meet the following five objectives,

1. Determine the unique characteristics of X and Y Generations by investigating the influential factors on their development.
2. Clarify the effects of organisational culture on project management.
3. Analyse how organisational culture can address the different needs and expectations of different generations.

4. Investigate the usability of organisational culture for managing the multigenerational workforce.
5. Determine the appropriate aspects of organisational culture for formulating a best practice organisational culture for managing a multi-generational workforce in project management.

Objective 1 requires to investigate the multigenerational workforce and to identify the characteristic traits of X and Y generations. Theories on organisational culture and its effects on project delivery are analysed so that Objective 2 can be achieved. The first two objectives supply the background knowledge which is needed for being able to move on to Objectives 3, 4 and 5 which are the main motives behind this study.

2.2. X & Y Generations and the Multi-Generational Workforce

Generation can be defined as an age group born into the same environment and go through the similar experiences and teachings in the first 20 – 23 years of their lives which shape their understanding of the world, values, beliefs and expectations (Underwood, 2007).

The generational classifications are made according to birth dates however there are some differences from definition to definition. In this study, UNJSPF's (United Nations Joint Staff Pension Fund) birth periods were used due to its reliability.

The influence of environment on children development have been studied numerous times and as underlined by A. Rigolon and M. Alloway (2011), the environment and the people interacting with the child affect its development. Another influential factor in child development is, the guardians' style of parenting. Parent-child relationship affects the child's development in terms of information processing and perceptual skills which would eventually result in different values, beliefs or ways of doing things (Bernier, Carlson & Whipple, 2010).

Generations share life experiences such as the popular culture, the economic recessions, political events, natural disasters or technological advancements. Being born into different environments affects a child's development in two different ways; first, changes in daily lives due to the technological advancements such as playing computer games instead of reading books and second, difference between the parents of different generations and the inevitable difference between their parents' style of parenting.

Figure 1: Generational Time Line and Characteristic Traits

Traditionalist Born 1925 – 1945	Baby Boomers Born 1946-1964	GenX Born 1965-1980	GenY Born 1981 and after
TEAM PLAYERS	BIG PICTURE/SYSTEMS IN PLACE	POSITIVE ATTITUDE	CONFIDENCE
INDIRECT IN COMMUNICATING	BRING FRESH PERSPECTIVE	IMPATIENCE	SOCIABILITY
LOYAL TO THE ORGANIZATION	DO NOT RESPECT THE TITLES	GOAL ORIENTATED	MORALITY
RESPECT THE AUTHORITY	DISAPPROVE ABSOLUTES AND STRUCTURE	MULTI-TASKING	STREET SMARTS
DEDICATION AND SACRIFICE	OPTIMISM	THINKING GLOBALLY	DIVERSITY
DUTY BEFORE PLEASURE	TEAM ORIENTATION	SELF-RELIANCE	COLLECTIVE ACTION
OBEDIENCE	UNCOMFORTABLE WITH CONFLICT	FLEXIBLE HOURSE, INFORMAL WORK ENVIRONMENT	HEROIC SPIRIT
RESPOND WELL TO DIRECTIVE LEADERSHIP	PERSONAL GROWTH	JUST A JOB	TENACITY
SENIORITY AND AGE CORRELATED	SENSITIVE TO FEEDBACK	TECHNO-LITERAL	TECHNOLOGICAL SAVY
ADHERENCE TO RULES	HEALTH AND WELLNESS	INFORMAL - BALANCE	LACK OF SKILLS FOR DEALING WITH DIFFICULT PEOPLE
	PERSONAL GRATIFICATION	GIVE THEM A LOT TO DO AND FREEDOM TO DO THEIR WAY	MULTITASKING
		QUESTION THE AUTHORITY	NEED FLEXIBILITY

The United Nations Joint Staff Pension Fund (UNJSPF) released a study (n.d.) about the generations and their typical characteristic traits. Figure 1 presents the 4 different generations which existed in the last century in a timeline as well as summarizing their characteristic traits.

As O'Bannon (2001) points out different generations need to be managed differently since the failure of the recognition of the differences between generations would cause misunderstandings and lack of communication and it would create an unpleasant working environment.

2.3. Generation X

The record divorce rates, parents sacrificing their lives for work and the coloured TV are the key elements influenced the Generation X'ers which caused them to be sceptic and self-sufficient (Faber, 2001). Most of the X'ers grew up alone watching TV since their parents were either divorced or working long hours. They have contradictory values in matters of personal life and work such as avoiding marriage because of the fear of divorce or having the fear of getting fired while looking for a better job (Faber, 2001).

Generation X'ers, prefer developing a skill set consisting of different skills rather than excelling on one subject. They believe that job-security can only be achieved by constantly updating their skill set. Their main goals are just being self-sufficient and providing a good-life for their families which is something they did not have while growing up. X'ers are just trying to find the balance between work and home so that they can look after their own interests (Fogg, 2009).

It is also important to mention that the Generation X has witnessed some of the milestones in the history such as the fall of the Soviet Union or the demolition of the Berlin Wall, these incidents have influence on their sceptic and resentful character (Faber, 2001). They have seen that the world is constantly changing and there is no point in dedicating one's life into an organisation or an ideology. Generation X'ers don't believe in status because they have witnessed numerous times that authorities fall. This is why they need to be led and directed by credibility and know how rather than position and status.

It's quite common to see an X'er to start working alone instead of waiting for his/her team members to take a collective action (Patterson, 2007) which makes them bad team players. It should be kept in mind that X'ers work for financial gains, if they are not provided they'll seek the rewards somewhere else (Martin & Tulgan, 2006). Generation X'ers are result oriented which means that sometimes choose unorthodox methods in order to get things done (Eisner, 2005). The X'ers are productive but they prefer to work smarter instead of harder so they come up with new methods of doing things which is a result of their entrepreneurial spirit.

The typical characteristic traits for the Generation X can be summarized as follows:

- Self-sufficiency and self-orientation which make them bad team players (Faber, 2001; Patterson, 2007; UNJSPF, n.d.).
- Sceptic and resentful, they are hard to convince and they have difficulty trusting others (Dennis & Owen, 1997; Faber, 2001).
- Value skill and know how over status and position. (UNJSPF, n.d.)
- Try to set up a balance between home and work (Fogg, 2009; UNJSPF, n.d.).
- Main focus on their family and children (Bennett, et al., 1997; Fogg, 2009; Schoch, 2012; UNJSPF, n.d.).
- Motivated by pay checks rather than accomplishments and contribution to the organisation (Bennett, et al., 1997; Martin & Tulgan, 2006; Schoch, 2012).
- Lack of loyalty, commitment and idealism (Dennis & Owen, 1997; Eisner, 2005; Faber, 2001).
- Prefer having a skill set of different attributes rather than exceling in one (Eisner, 2005; UNJSPF, n.d.).
- Result oriented (Eisner, 2005; Patterson, 2007; UNJSPF, n.d.).
- Technologically literate (Fogg, 2009; UNJSPF, n.d.).

2.4. Generation Y

Growing up with caring parents, made the Y'ers to value their homes. Typically, Generation Y'ers got praises for every accomplishment therefore they are seeking constant feedback and attention (Raman, et al., 2011). In addition to their needy nature, the freedom of expressing themselves they had while growing up turned them into occasionally over-confident individuals who value autonomy a lot (UNJSPF, n.d.)

Computers and internet provide an environment where the users can participate, unlike TV, so they turn into actual users not just viewers or followers. Computers enable children to start accomplishing things even in the age of five or six. Y'ers are born into a world where they can start achieving things at an early age (Tapscott, 1998).

The increasing awareness of environmental problems, inequalities, discrimination etc. affected Y'ers while growing up. They've become idealistic with strong moral and ethical values. Many Y'ers participate in social campaigns or NGOs for being a part of a bigger cause.

For the first time in history, the Generation Y has accomplished something which is to create an upside down knowledge hierarchy as defined by Tapscott (1998). The children of today, have more knowledge than their parents about digital tools, computers and internet which affects the family dynamics and child development. Parents started learning from their children therefore started respecting them which changed the orthodox child-parent relation. The changing household hierarchy caused the children to ask for more at school or at work in terms of respect.

Y'ers value self-development and they are constantly looking for learning opportunities. If they feel like there's nothing left to learn in the organisation they'll start looking for another place where they can learn some more. Their sense of security is to feel like they can find another job somewhere else so for making sure that they can they try to get knowledge and experience from wherever they go (Martin & Tulgan, 2006). Generation Y dislikes formality, bureaucracy and hierarchical structures, they enjoy rapid progress and due to the fact that they can multifunction they prefer challenging tasks which push their limits (Eisner, 2005).

Generation Y have integrated technology into their problem-solving techniques so, often they approach problems with different methods compared to other generations (Fogg, 2009). Social networks are an important part of life for the Generation Y'ers, they communicate and build up professional or personal relationships using social networks so this enables them to integrate their personal and professional lives together (Nikravan, 2011; Underwood, 2007; UNJSPF, n.d.).

The typical characteristic traits of the Generation Y can be summarized as follows:

- Value autonomy and freedom so they can be creative and perform efficiently. (Eisner, 2005; Fogg, 2009; UNJSPF, n.d.)
- Idealistic and have high moral values. (Martin & Tulgan, 2006; Schoch, 2012; Tapscott, 1998; UNJSPF, n.d.)
- Need for constant feedback and appreciation. (Raman, et al., 2011; Tapscott, 1998)
- Need for instant rewards and they often get impatient. (Fogg, 2009; Martin & Tulgan, 2006, Schoch, 2012)
- Born into technology and natural users of it. (Fogg, 2009; Schoch, 2012; Tapscott, 1998)
- No distinction between personal life and career but it is important that they can socialize at work. (Nikravan, 2011; Underwood, 2007; UNJSPF, n.d.)
- Good at taking collective action and teamwork. (UNJSPF, n.d.; Underwood, 2007)
- Able to multitask and motivated by challenging tasks. (Eisner, 2005; Martin & Tulgan, 2006)
- Like to be recognized as individuals and they dislike hierarchy. (Eisner, 2005; Tapscott, 1998; UNJSPF, n.d.)

2.5. Digital Immigrants and Digital Natives

Marc Prensky (2001) came up with the typology of digital natives and digital immigrants while studying the differences between the learning behaviours of students of the past and present. He suggested that, the students of the present are born into digital technology and their learning behaviours differentiate from the students of the past. Students of the present are the digital natives, their learning experience started as they watched TV and played video games which inevitably resulted with different perception of knowledge and different habits of learning compared to the students of the past. Today's teachers are digital immigrants who are trying to adapt to the new technology and what it has brought to the daily life. For the case of X and Y Generations, most of the X'ers are digital immigrants whereas the Y'ers are digital natives.

Having a workforce of different generations makes it challenging to manage however it also means having a broader skill set since the different generations have unique abilities to offer. Even though the multigenerational workforce needs managing it is also an opportunity.

2.6. Organisational Culture and Human Capital

Human capital is one of the most important assets of an organisation since it can create competitive advantage for an organisation (Campbell et al., 2012). If an organisation fails to provide a workplace which can addresses the different needs and expectations

of its employees, it cannot use its human capital efficiently. Also creating a sense of harmony and commitment is extremely important for the employee performance since there is a negative correlation between the amount of conflict and stress and the performance of project management professionals (Gray, 2001). Communication, integration and commitment are all essential elements of organisational culture which are also key in managing human capital (Smith, 1997).

2.7. Organisational Culture

Organisational culture has become a critical issue especially in the recent past. Corporations have started paying attention on building an effective organisational culture since companies with strong organisational cultures have made more returns on investment and gains (Deal & Kennedy, 2001). Organisational culture also affects the level of commitment of the employees to the organisation as displayed by Moon (2000) which yields returns in terms of productivity and efficiency.

Senge's (2006) theory of shared vision claims that when employees start sharing the same ideas, thoughts and emotions about the organisation, it means that they are committed and when the employees are committed they are more productive. It is important that the culture is adopted by everyone and employees are fully committed to the culture so that the organisation is able to act as a whole instead of just being a group of people working together.

Before going further in detail, it would be beneficial to define organisational culture however it is not as simple as it sounds. There are different definitions of organisational culture, for example Hofstede & Hofstede (2005) define organisational culture as "the collective programming of the mind that distinguishes the members of one organisation from another" whereas Deal & Kennedy (2001) define organisational culture as "the glue holding that holds an organisation together". Buchanan & Huczynski's (2010) definition is a bit more complex, they claim that the organisational culture is "the shared values, beliefs and norms which influence the way employees think, feel and act towards others inside and outside the organisations". Organisational culture is the unique way of doing things which differs from organisation to organisation.

2.8. Models of Organisational Culture

Schein's Model

Edgar Schein's (2010) model of organisation culture is beneficial for being able to determine to what extent the organisational culture can be influenced by internal and external factors. It categorizes culture into three layers based on its visibility and accessibility.

Three Layers of Culture

1.   Artefacts
     - Visible and feelable structures and processes
     - Observed behaviour
          -   Difficult to decipher
2.   Espoused Beliefs and Values
     - Ideologies
     - Rationalizations
          -   May or may not be congruent with behaviour and other artefacts
3.   Basic Underlying Assumptions
     - Unconscious, taken-for-granted beliefs and values
          -   Determine behaviour, perception, thought and feeling

From one to three, the layers of culture get deeper, harder to see and more embedded in the organisation. The first level is the Artefacts in an organisation, these are things which are easier to see such as how people dresses, how people talk to each other or the firm's products. Artefacts are very easy to change, such as free-Fridays or putting small plants on every employee's table. Although it is easy to the notice artefacts it is difficult to interpret them. For being able to do that, one most go deeper into the organisation in order to interpret what these artefacts really mean (Schein, 2010).

The second layer is the Espoused Beliefs and Values in an organisation. These are assumptions that are accepted as truth within the organisations such as the strategy or the goals of the organisation. There might be need for the validation of these assumptions

from time to time. Some of these values and beliefs, which are validated by the employees and managers, even might be socially unacceptable behaviours such as sexist discrimination (Schein, 2010).

Last layer is the Basic Underlying Assumptions beneath the first and second levels. These are hypothesis which have been validated numerous times and turned into reality slowly gradually over time and became unconscious behaviour. The basic underlying assumptions are non-debatable and they cannot be challenged, this is why they are extremely difficult to change and whoever denies the basic assumptions in the organisations face the threat of being dismissed or ex-communicated (Schein, 2010).

Kotter & Heskett's Model

Kotter and Heskett (1992) also claims that culture has layers: the first layer, which is shallow and easier to understand and change and the second layer, which is deeper and harder to analyse and change.

Another key characteristic of an organisation culture is its adaptability. Kotter and Heskett (1992) argue that adaptive cultures focus on the interests of the stakeholders such as customers, suppliers, employees and this is why they are able to react to externalities. On the other hand, inadaptive cultures are narrow sighted and the main focus is the current circumstances, managers try to avoid risk as much as they can and the level of bureaucracy is high which decreases the organisations flexibility and ability to react to changes.

Handy's Typology

Handy (1993) examines the organisational culture in four main groups where structural differences are easily visible as well.

Types of Culture

1. The Power Culture
2. The Role Culture
3. The Task Culture
4. ThePersonCulture

Figure 2: Power Culture

The power culture shows resemblance to a spider's web, there is a strong central power either a person or a group who has unlimited authority. There is low level of bureaucracy and personal conversions are the most important tool of communication, furthermore due to the low level of formality these organisations are flexible. The success of the organisation depends on the person or the group who is in charge. As the web gets bigger the spider's ability to monitor and control decreases this is why this culture is common in start-up businesses or small entrepreneurial firms. Individuals who work in power structures will be satisfied in terms of the power and freedom they have since the organisation is goal oriented rather than mean (Handy, 1993).

Figure 3: Role Culture

The role culture has a hierarchical structure and there is a lot of bureaucracy in it, there are defined roles and clear descriptions of who needs to do what. Expertise is valued more than creativity. The main focus for the organisation is stability and survival not growth on the other hand status is important and all the processes are formally done which creates a slow decision-making process. Individuals working in role cultures will be offered predictability and security with a previously set career ladder to climb as long as the individual sticks to the methods of the firm (Handy, 1993).

Figure 4: Task Culture
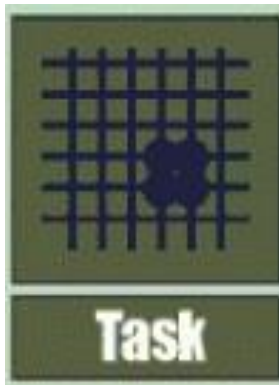
Task culture shows resemblance to a net in the sense that the power and influence lies at the intersection points of the strings. Even though some strings are thicker and stronger than the others it is not possible to talk about a strong central authority. The flexible structure task culture provides, is very suitable for project management due to the autonomy it provides. The groups consist of individuals with different skills and creative power however expertise is not present. (Handy, 1993)

Figure 5: Person Culture

In person culture, it is very hard to talk about any kind of structure or organisational objectives. This culture serves the individual desires and objectives so there is no hierarchic decision-making mechanism or status influence, the only way to decide is mutual consent. Person culture is very hard to find among organisations however occasionally individuals act accordingly. Such as a professor in a university where he/she just teaches to fit into the organisation and work on his/her own interests or focuses on his/her career rather than feeling as a piece of the organisation or contributing to it. (Handy, 1993)

Like people organisations have different way of doing things, some develop over time through the actions of individuals or groups within the organisation and some are structurally shaped. It is not possible to isolate structure from the picture while talking about organisational culture therefore it is important to mention Burns & Stalker's (1961) structural classification before moving on.

Burns & Stalker's Classification

Burns and Stalker (1961) classify organisations in to two, as mechanistic and organic. According to their definition, mechanistic organisations have: high level of bureaucracy, clear and standardized definitions of methods, hierarchical structure of control, low level of autonomy and high respect for status and experience whereas organic organisations have: personalized methods and individual tasks, exchange of thoughts and consultancy rather than instructions, lower level of bureaucracy and more autonomy.

Comparing Models

The correspondence between Burns and Stalker's classification of organisations and Handy's (1993) typology of organisation culture is not surprising, as mentioned before it is not possible to talk about organisational culture or structure without mentioning the other.

The role culture mentioned earlier, shows resemblance to the mechanistic structure in the sense that there is hierarchy and bureaucracy in both. Also, experience and status are valued more than creativity and innovation. On the other hand, task culture is quite similar to the organic structure since there is high level of autonomy. Employees have more freedom, there is no pre-determined method for most of the duties so the individuals are able to take initiative as long as they complete the task because the orientation is goals not the methods. Cultural elements are present in structural frames and structural elements are an important part of cultural classifications. As Kotter and Heskett (1992) state: sometimes the organisational structure requires some behaviour which are already "basic underlying assumptions" in Schein's (2010) words. Quite often strategies fail because of their incompatibility with the organisation's culture.

Porter (2004) argues that, whatever the organisational structure or the culture is, organisations must establish horizontal mechanisms for management for enhancing the organisation's ability to function. These horizontal mechanisms will have their own decision-making mechanisms, own practices and own communication schemes. He claims that, the horizontal mechanisms will increase the organisation's flexibility and its ability to change regardless of its structure and culture.

The essence of generating a successful corporate culture is to integrate employees over a "shared vision" in Senge's (2006) words. Even individuals from the same generations experience conflicts so when the generational differences are considered it is sensible to expect more disorder. Organisational culture can affect an organisation's performance in numerous ways as demonstrated.

3. PROJECT MANAGEMENT

Gilbert (1983) defines a project as an organisational set up to deliver a task within previously set constraints in terms of time, cost and quality. Managing projects cannot be separated from managing the organisation as a whole even though delivering projects requires a different set of expertise (Roberts, 2013). Reiss's (2007) definition of a project highlights the importance of human factor in project management. He defines a project as a "human activity that achieves a clear objective against a time scale" and furthermore he mentions that one of the common characteristics of projects is that they all have a team of people.

For delivering successful projects, it is important to implement the appropriate tools and techniques. These tools and techniques can be named as the best practices of project management which contributes to projects and their chance of success (Loo, 2002). Like many others, Besner and Hobbs (2006) investigated the best practice tools in project management for delivering successful projects and have identified the following seven tools:

Tools of Best Practice in Project Management

1. Lessons learned/post-mortems
2. Requirements analysis
3. Scope statement
4. Work breakdown structure (WBS)
5. Project management software for monitoring of schedule
6. Project management software for task scheduling
7. Project management software for resource scheduling.

The tools of best practice are reviewed in three sub groups; tools related to the organisational learning, tools related to the planning and the software tools.

3.1. Tools of Organisational Learning

As projects progress, circumstances, resources and people change which creates a need for flexibility. For being able to address these changes there is a constant need for improvement in knowledge and skills which can only be achieved by creating a sustainable learning environment in the organisation (Koskinen, 2012).

3.2. Tools of Project Planning

As mentioned earlier, planning is the most important stage of a project which starts with analysing the requirements of the project. The organisation must make sure that it has the required resources to deliver the project as well as to set the project's scope clearly (Besner & Hobbs, 2006). Work breakdown structure (WBS) is a tool which is used to divide the project in to smaller tasks which all create deliverables in the end and using a WBS enable the project planners to schedule the project and the required resources (Norman, 2011).

Figure 6: A WBS Sample
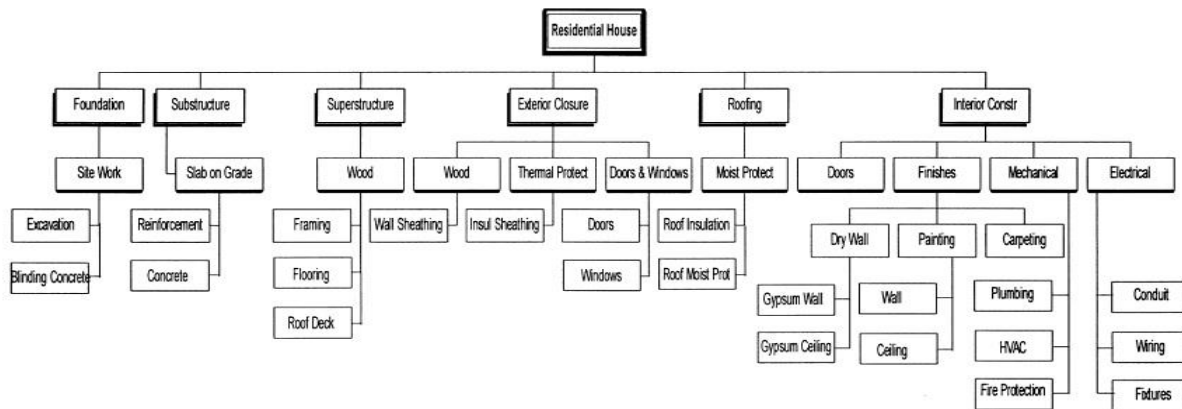
3.3. Tools of Project Management Software

Technology is widely used in project management through software which are used for monitoring and scheduling. Software, enable the users to enter information into the computer so that progress can be tracked and information can be shared swiftly. Such systems provide, increased project efficiency and improved decision-making capability due to the enhanced communication ability which result in increased overall project success (Deng, et al., 2001).

Project management tools and techniques are essential in delivering successful projects however they are not sufficient by themselves. Human is the key factor in project success therefore organisational culture is crucial to project management.

3.4. Effects of Organisational Culture on Project Management

There is a strong connection between an organisation's project success and it's because managing projects require collective action, being able to react instantly, high level of integration, flexibility (Gray & Larson, 2011; Kerzner, 2000). Some aspects of organisational culture enhance the organisation's ability to deliver projects (Ford & Randolph, 1992; Gray, 2001; Kerzner, 2000).

Standardizing project procedures is beneficial for project success (Rada & Craparo, 2000) however as pointed out by Tatikonda and Rosenthal (2000) there is often need for coming up with alternative ways of problem solving instead of using the formal methods. These, will enhance the organisation's adaptability and by doing so the balance between flexibility and firmness would be achieved.

Gray and Larson (2011) state that, a project friendly organisational culture will encourage cross-departmental cooperation and integration while creating harmony and commitment within the organisation. Even though it is possible to talk about a best practice for project management, the good project management needs to be customized according to needs. Result orientation and being proactive have great importance (Kerzner, 2000) and therefore an organisational culture which is goal oriented increases the project management ability.

Making decisions while managing projects is not easy for several reasons such as the scarcity of resources or the presence of multiple stakeholders, both external and internal, (Lock, 2013) and furthermore, often project managers are obliged to take hasty decisions. Having a strong hierarchical structure would slow down the process therefore an organisation should be comfortable with a more decentralized decision-making scheme (Morrison, et al., 2006). A culture which is more decentralized, less hierarchical and less bureaucratic would increase the level of autonomy of the employees and as advocated by Young (2013) the high level of autonomy and freedom of action of the employees will have a positive impact on achieving success on projects. Tatikonda and Rosenthal (2000) point out, sometimes developing new methods is needed as well which can be only possible by providing autonomy and creating a learning environment.

Communication is another important aspect of project management and there is a close link between the efficiency of communication and project success (Tushman & Katz, 1980). There is a need for fast and free flow of information for being able

keep up with the rapidly changing project environment. It is important that the organisation has a culture of open communication where people can express opinions without hesitation and in mutual trust.

Project management supporting organisational cultural elements which were discussed are summarized below:

Elements of Organisational Culture for Increasing Project Success

1. High willingness to change and develop new methods, open to innovation, adaptive and flexible.
2. High level of integration and cooperation between departments.
3. Goal orientation.
4. High level of autonomy and encouraging risk taking.
5. Decentralized decision-making procedures, low level of hierarchy and low level of bureaucracy.
6. Outward orientation and market focus.
7. Promoting learning and training.
8. Eased flow of communication and mutual trust among the organisation.

Previous studies provide information about the differences between generations in terms of their expectations and priorities but also about their different approaches towards solving problems. Organisational culture's influence on human capital can be used as a tool for addressing these differences.

Even though studies have been made to uncover the effects of organisational culture on generational differences, the project management literature lacks well established links between them. This chapter summarized the relevant literature to create the knowledge base required for being able to discuss this connection.

4. DISCUSSIONS & FINDINGS

Organisations seek ways to increase their efficiency or productivity and one of the ways of doing it, is creating a workplace which would increase employees' commitment, satisfaction and happiness by addressing their needs and wants (Goffee & Jones, 2013). The information provided in the previous section is used for discussing the points where they would be able to work in harmony and the points where they might experience conflicts in terms of organisational culture. It is possible to say that there are correspondences between the generational traits and some aspects of the project management delivery enhancing organisational culture.

4.1. X and Y Generations Together in the Workforce

The differences between X'ers and Y'ers in terms of their values, beliefs and expectations are easily observable. Hicks and Hicks (1999) advocate that there are three key elements of overcoming differences between generations which are: understanding, acceptance and forgiveness. Understanding the generations is essential for being able to get the most out of the multigenerational workforce and by contrasting the unique traits of each generation, an organisational culture which is suitable for both generations can be established.

4.2. Perception of Matters and Technology

One of the main differences between X'ers and Y'ers is their point of view about the world. X'ers are generally more sceptic and have difficulty trusting people, they are used to doing things on their own, whereas Y'ers are usually more sociable, high spirited, positive and better team players.

Creating a balance between home and work is in general very important for X'ers, they highly value their family and children whereas Y'ers tend to not have such a strong distinction between their professional and personal lives, they often prefer working in an environment where they can socialize and make friends.

Previous generations were introduced to technology in their adulthood but X'ers were introduced when they were still young so most of them are technologically literate and know how to benefit from it. Y'ers were born into technology and have integrated technology and related tools to their daily lives. X'ers generally use technology when they need it and it's a part of their problem-solving approaches. Y'ers use technology as much as possible since they believe the easiest and fastest way of doing something is using technology.

4.3. Expectations and Priorities

Working Style and Satisfaction

The workplace is like a playground for the Y'ers, they often feel like they can make new friends, socialize, learn new things and they have fun while doing them which creates a sense of commitment to the organisation. X'ers do not value these things as much as Y'ers do, especially the sociability of the organisation. They mostly believe that professional and personal lives should be separated from each other.

Both X'ers and Y'ers value self-development and training. Providing these might develop a loyalty to the organisation which is something they often lack (Underwood, 2007). Even though they might not feel fully committed to the organisation, creating a learning environment would be attractive to them, so an organisational culture which provides a learning environment for its employees would be beneficial for managing the both generations.

Y'ers are usually more willing to work for long hours in order to get things in the right way, the methods they use are generally as important as the results they get in the end which is a result of idealistic nature but when working together with X'ers their idealistic nature might cause problems. Because X'ers value a balance between home and work, they usually don't like spending long hours in the office.

Project Teams and Management Aspects

A project team consisting of only X'ers would face some difficulties in progressing since X'ers are not very good at taking collective action, often they tend to progress on their own without taking their co-workers into consideration whereas Y'ers are in general, better in working in groups since they enjoy interacting with people. X'ers usually do not develop very good personal relations and interact with others however communication and mutual understanding is extremely important for overcoming generational differences (Goffee & Jones, 2013; Hicks & Hicks, 1999).

The social skills Y'ers have might be useful in terms of "breaking the ice" between the members of different generations and develop trust between them, so an organisational culture enhancing the interaction and communication between employees within the organisation would be beneficial for managing the multigenerational workforce.

Both generations would value skill and capabilities over position and experience, which is beneficial in a sense because X'ers would respect and listen to the Y'ers even though they are younger, less experienced and possibly hierarchically lower than them.

Y'ers and X'ers both value freedom and autonomy and they usually prefer to be mentored instead of managed. Y'ers generally feel that they need space to be efficient and creative. The absence of bureaucracy and hierarchy would give both generations the flexibility and freedom they need as well as saving them from unnecessary time-consuming procedures and regulations.

Different levels of technology integration create different problem-solving approaches for generation X and Y. Both generations are capable of using technology so they are able to understand each other most of the time in terms of technology. Still there might be differences, so an organisational culture which does not standardize problem solving approaches and which is open to innovation and change would be suitable for managing these two generations together.

Y'ers perform more efficiently when they have clear even though they are not result oriented (Underwood, 2007). It was already said that X'ers are generally more goal focused, so both generations will perform more effectively if the organisation sets clear objectives for its employees. Even though different generations have different ways of reaching to targets it is important for both of them to be goal oriented.

Organisational Culture as a Tool for Managing X and Y Generations

Organisational culture is influential on how employees fit into an organisation (O'Reilly, et al., 1991) so in attempts towards finding an organisational culture best practice, to address the generational differences, is a reasonable effort.

A list, of organisational culture elements required for managing a multigenerational workforce, is provided below. The elements are showing correspondence to Handy's (1993) typology of task culture. The flexibility and adaptability provided by this type of culture would create a desired working environment for both generations. The task culture is result oriented and it provides its employees the freedom to develop their own methods as long as the tasks are completed.

Elements of Organisational Culture for Managing the Multigenerational Workforce

1) Decentralized decision-making mechanism consisting of employees from every level to be able to take quick and sensible actions.
2) Supporting internal communication and integration between employees.
3) Low levels of hierarchy and bureaucracy.
4) Must be adaptive and flexible while providing both short-term and long-term rewards in return for achieving goals.
5) Providing freedom to come up with own techniques and methodologies to for problem solving and not having standardized procedures for every task.
6) Creating a learning environment.
7) Having clearly set targets and objectives.

The next section discusses the project management tools and techniques in a generational context for checking the usability of the tools in a multigenerational environment.

X & Y Generations and the Project Management Tools & Techniques

Previously, the tools and techniques for achieving the project management best practice were presented in three sub headings which will now be used to discuss in a generational context.

Learning Tools

The importance of creating a learning environment was illustrated in the literature review. X and Y generations are both attracted by the opportunity of self-improvement, so a project environment where X and Y generations will be working together would be more successful if the organisation manages to create a learning environment by promoting life-long learning and training.

Planning Tools

Project management requires standardized project procedures even though it was discussed earlier that not having standardized procedures and having flexibility would enhance an organisation's ability to deliver projects. Due to X'ers tendency do things in their own ways, they should be closely monitored. Y'ers on the other hand work better with a sense of direction so procedures such as small work packages determined by a WBS, might increase their efficiency. Also using a WBS would also enable the Y'ers to have the achievement feeling they look for all the time since they would be completing tasks which will produce visible outcomes.

Project Management Software

Both generations are technologically literate so they will be capable of using the software and they would not struggle. The tools and techniques which are used by organisations for increasing project delivery capabilities are mostly suitable for both X and Y generations.

Project Management in the Multigenerational Environment

The corresponding elements of organisational culture which are project management enhancing and which are appropriate for a multigenerational workforce would provide an organisational culture to deliver to successful projects in a multigenerational workforce.

Table 1: Comparing Aspects of Organisational Culture

A- Project Management Enhancing	B- Multigenerational Workforce Managing
1) High willingness to change and develop new methods, open to innovation, adaptive and flexible.	1) Need for a decentralized decision- making mechanism consisting of employees from every level.
2) High level of integration and cooperation between departments.	2) Supporting internal communication and integration between employees.
3) Goal orientation.	3) Low levels of hierarchy and bureaucracy.

4) High level of autonomy and encouraging risk taking.	4) Adaptive and flexible while providing both short term and long-term rewards.
5) Decentralized decision-making procedures, low level of hierarchy and low level of bureaucracy.	5) Freedom for developing personalized techniques and methodologies, no standardized procedures.
6) Outward orientation and market focus.	6) Creating a learning environment.
7) Promoting learning and training.	7) Having clearly set targets and objectives.
8) Eased flow of communication and mutual trust within the organisation.	

Table 1 summarizes the previously discussed aspects of organisational culture. Column A presents the project delivery enhancing traits and Column B presents the multigenerational workforce management enhancing traits. The correspondences between the two columns are easily observable. A1 and B4 & B5 are all about the adaptability of the organisation and its willingness or openness to implementing new methods and problem-solving approaches. An organisation which gives freedom to its employees to be innovative and which is flexible enough to adapt to changes will be an organisation delivering successful projects and meeting the expectations of the multigenerational workforce. A2 and A8 are both aligned with B2 which means that fast and reliable communication enhance an organisation's ability to deliver projects with a multigenerational workforce. For organisations with a multigenerational workforce, integration and interaction of departments and employees are key factors which shows significant similarity to what Porter (2004) suggests about having horizontal mechanisms within the organisation. A3 and B7 show resemblance to each other since both aspects require the organisation to focus on goals and clearly state them. A4 is related with B5 since in order to be able to have the freedom of personalized methods, employees need to have autonomy and willingness to take risks. A5 and B1 & B3 are almost the same so having a decentralized decision-making system, a low level of hierarchy and a low level of bureaucracy are all enhancing an organisation's ability to deliver projects and also beneficial for managing X and Y generations together and enable them to perform effectively. Creating a sustainable learning environment is beneficial for delivering projects and attracting both X'ers and Y'ers by addressing their demands as pointed out in A7 and B6.

The presence of multigenerational workforce can have a strong effect an organisation's ability to deliver projects through the organisational culture. The probable negative effects can be mitigated or the efficiency of the multigenerational workforce can be increased to get the most out of the employees by an appropriate organisational culture.

In the next section a best practice in terms of organisational culture is suggested for managing the X and Y generations together in project management.

Organisational Culture to Mediate the Differences

Certain aspects of organisational culture can be used to address the needs and expectations of generations X and Y. Organisational culture is influential on increasing the cooperation between employees regardless of their generations.

Numerous studies have been conducted about the relation between organisational culture and employee commitment and furthermore commitment is highly influential on employee performance. Commitment is a psychological contract between the employee and the organisation which is often much stronger than a one on paper. When the different perspectives of different generations are taken into consideration the influence of organisational culture is tremendous. Organisational culture can be used to mediate between generations.

Organisational culture is critical, especially in project management since employee productivity is an extremely important factor in project management. The generational differences cause disparity between employees and it is not possible to be productive and to perform as a whole. To be able to that organisational culture is an extremely valuable tool because it can mediate the differences between generations.

An Organisational Culture Best Practice Proposal for Managing the X & Y Generations

A best practice is a method, technique or a way of doing something which is better at delivering the desired outcome compared to the other ways or approaches (Camp, 1989). In project management a best practice can enhance an organisation's ability to deliver successful projects. Due to its nature, project management brings employees from different departments and forms

project groups where the key resource is the employees themselves (Clark & Colling, 2005). The employees in project groups are not just from different departments but also from different generations.

In the previous section, the findings regarding the coincidence between aspects of organisational culture which are beneficial for managing the multigenerational workforce and which are beneficial for delivering successful projects were presented. Now, these aspects are outlined in a framework leading to an organisational culture best practice proposal.

1)   Result Orientation

One of the fundamental steps of project management is setting clear objectives (Metaxiotis, et al., 2005) and as discussed earlier, organisations that are goal oriented are more successful in delivering projects. Members of the generation X are result oriented and generation Y'ers sometimes lose their sense of direction, so having an organisational culture which focuses on goals is extremely important for managing the multigenerational workforce in project management.

2)   Decentralized Decision Making and Low Levels of Hierarchy & Bureaucracy

An organisation should be comfortable with a decentralized decision-making mechanism since often project groups need the autonomy do make decisions. The natures of both generations are against having a positional or an experienced based decision-making structure where there is a central authority.

3)   Encouraging Innovation & Autonomy and Not Having Standardized Procedures

The organisations which are flexible and adaptive are more successful in project management. Also due to the differences between the problem-solving approaches of the generations, there is need for autonomy and room for creativity. In a multigenerational environment, having standardized procedures would diminish the efficiency of both generations since they won't be able to perform in line with their aspirations.

4)   Learning Environment

Promoting learning and training is important for a project organisation since it allows the organisation to prepare its employees for the future. X'ers and Y'ers are both looking for opportunities where they can develop themselves. The X'ers believe in "what is in it for me" philosophy and Y'ers believe that one should be always developing him/herself for being able to be successful so creating a such environment is needed.

5)   High Level of Integration and Communication within the Organisation

The need for taking collective and quick actions in project management creates a need for fast flow of information and integration among departments within the organisation. The generational barriers can be overcome by mutual understanding and to achieve that, there is need for interaction and integration between employees.

The five aspects of organisational culture which are mentioned above are the five crucial points for achieving the desired organisation culture scheme. In other words, the best practice organisational culture in project management for managing a multigenerational workforce, consisting of X and Y generations is made up of these five main cultural elements.

Productivity of an organisation is highly dependent on creating a workplace which would increase employees' commitment, satisfaction and happiness. Organisational culture is an important tool for generating the ideal workplace. The correspondence between the appropriate organisational culture types would be a key in managing a multigenerational workforce.

5. CONCLUSIONS

The interest in the generational differences has been increasing especially in the last decade after the entry of the Y generation in the workforce. Organisations are trying to find ways to attract young talent as well as making the most out of the old ones. Human is the most valuable asset in project management which needs to be managed very efficiently. Generational barriers might reduce the effectiveness of the human capital in an organisation. This study aims to establish a relationship between the two phenomena which were previously subject of numerous studies independently from each other.

The main objective of this study is to develop a best practice organisational culture for managing the multigenerational workforce in a project environment. Five key elements: *Result Orientation, Decentralized Decision Making and Low Levels of Hierarchy & Bureaucracy, Encouraging Innovation & Autonomy and Not Having Standardized Procedures, Learning Environment* and *High Level*

of Integration and Communication within the Organisation are identified as being required for the best practice organisational culture for managing a multigenerational workforce in project management.

Even though this study established substantial links between the two aspects of project management, the relationship between the two is still open for further development. The best practice which was suggested needs to be tested so that the pros and cons can be observed and certain improvements can be suggested. Future researchers who are interested in the link between project management and generational differences should take this study as a starting point and investigate the relationship in further detail.

This study discovers the relationship between project management and multigenerational workforce. The contribution of this research to the literature is the relationship it uncovers between project management and generational differences furthermore this study suggests a best practice in terms of organisational culture to enhance an organisation's ability to deliver projects using a multigenerational workforce.

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INDUSTRY 4.0 AND COMPETITIVENESS

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ABSTRACT

Purpose- Recent developments in information technology lead to a new industrial revolution, transforms the entire eco-system. The last industrial revolution of the information society is referred to as Industry 4.0. This paper tries to explain fourth industrial revolution with its basic concepts and draws attention to dramatic changes in the production systems and competition environment in the World and Turkey.
Methodology- This paper used a qualitative method, present and discussed the opportunities and challenges in implementation of Industry 4.0 especially in terms of competitiveness.
Findings- Industry 4.0 have a substantial potential to change global competition environment and can be seen as a great opportunity Turkey's development and improvement in competitiveness, although the state of preparations for its implementation are very limited for now.
Conclusion- The present study contributes the Industry 4.0 literature by drawing attention to its relationship between competitiveness.

Keywords: Industry 4.0, competitiveness, innovation, technology, production systems.
JEL Codes: O14, 025, 030

1. INTRODUCTION

In recent years, growing implementation of digital technologies to manufacturing process lead a new industrial revolution concept to have emerged. The term "Industry 4.0" has become an increasingly important discussion topic in the last few years.

Industrial revolutions have emerged as the periods in which technological progress and productivity in production gained high momentum in historical process. Throughout history, three industrial revolutions took place. The first industrial revolution (Industry 1.0) started at the end of the 18th century when James Watt discovered the steam engine, using steam-powered machines in the production (weaving looms) and the establishment of mechanical production facilities. In second industrial revolution (Industry 2.0), production efficiency has increased with the widespread use of oil and the development of production line systems. The third industrial revolution (Industry 3.0) has emerged as an informatic revolution with the rapid development of electricity, electronics, computers and the Internet. The last industrial revolution of the information society is referred to as Industry 4.0.(EBSO, 2015)

Industry 4.0 can be defined as the ability of machines to be able to manage production processes by replacing manpower. The new industrial revolution is the era of technological change in production, cyber- physical production techniques and smart factories. This revolution, which is expected to happen at any moment, points out to the organization of all production equipment integrated into a network, from the idea to delivery stage to the final consumer, including the after-sales services, self-management and the adaptation of a new organization and management model.This whole process emerged as the elements that increase competitiveness.

In this paper, we discuss about industry 4.0 with the new concepts it's brought to our lives and draw attention paradigm changes in the production system and to the effects of this changes on economy in terms of competitiveness

2. INDUSTRY 4.0

Industry 4.0 was conceptually mentioned for the first time in 2011 at the Hannover Fair in Germany. It was stated by experts who participated in the fair that the information era started a new period in the production processes and a new Industrial Revolution was taking place.(EBSO, 2015) The development of a new economic concept based on advanced technology strategies has been proposed as an offer.(Roblek et al., 2016)

The 4th Industrial Revolution has gained a formal qualification, with the Government of Germany taking these views as a new industrial strategy. Indeed, the German government's Industry 4.0 project "High-Tech Strategy" launched in 2011, transformed into a research agenda in 2013.(Roblek et al., 2016)

The effects of Industry 4.0 on the business world are defined in three main areas. These are integration and digitalization of vertical and horizontal value chains, digitalization of products and services, creation of a digital business model and customer relations.(PWC,2016)

Since the beginning of the 21st century, it has been observed that there has been a digital transformation in every area of life. In particular, recent developments in information technology lead to a new industrial revolution, transforms the entire eco-system. Unlike its predecessors, the Industrial Revolution is regarded as the beginning of a process that affects every aspect of life, which has many implications for the modern life and influences the way of doing business. Indeed, innovations in digital technology alter our relationship with environment and objects also the way we percept them permanently.

Digitalization is a phenomenon that connects people and things with the help of information and communication technologies and convergence real and virtual worlds. Indeed, the process of digitization has accelerated rapidly in recent years. This trend transforms the entire infrastructure in areas such as energy, transportation, health manufacturing.(Kagermann, 2015) Of course it also transforms goods and services production patterns.

At this point, traditional production systems are in a transformation towards digitalization with increasing technological innovations. This digital transformation is triggered by new technologies such as intelligent robots, cyber physical systems, sensors, 3d printing, cloud systems, the internet of objects, big data and so on. These new technologies lead to a new era in manufacturing by creating a new production environment that is integrated with the physical and the virtual.

Industry 4.0 can be defined as a revolution in the production process with advanced information technologies and automation applications, bring new values and services for the customers and organization itself.(Khan, Turowski, 2016) Industry 4.0 as a new production system implys that without the need for manpower machines has the ability to manage the entire production process.(EBSO, 2015)

The notion behind Industry 4.0 is the introduction of information and internet technologies to industry. Industry 4.0, which has Cyber Physical Systems (SFS) and the Internet of Things in its base, is constructed as a system that combines the physical with the virtual. This system consist with full integrated machines that provide mutual information flow continuosly. These machines are programmed with the ability to manage and optimize the production in a way that minimizes errors and faults in the production processes by providing coordination, either side to people or independent.

Industry 4.0 expresses an integrated industry vision to be implemented via computer, software and internet technologies. In this context, Industry 4.0 vision represents a digital revolution in production, where a new production order, high efficiency, self-governing smart factories, all equipment, machines, and all components in the production process communicate and cooperate with each other. Furthermore, this vision is designed to include all stages of a product's value chain, from the initial idea stage of the product to engineering, production, usage and recycling stages.(Lydon, 2016)

There are new technologies which makes industry 4.0 possible and will shape the industry production. These; Intelligent robots, simulation, horizontal-vertical software integration, Internet of Things, cyber security, cloud technologies, additive production, augmented reality, big data analysis .(TUSİAD, 2016) These new technologies, which make Industry 4.0 possible and some of them started to be implemented in a small scale in industrial production, point out to the era of decreasing costs and increasing productivity during the production process.

2.1. Technological Concepts of Industry 4.0

In order to reveal Industry 4.0 effects, technological factors, which are used, are decisive. The fourth industrial revolution is shaped by the Internet of things, smart factories, cyber physical systems, big data, smart robots, simulation, horizontal and vertical integrations, cloud computing system, cyber security, additive manufacturing and augmented reality.

2.1.1 Internet of Things (IoT)

As a most important and influential invention of history, internet, already influenced many areas of our lives permanently. Major impact of internet can be seen on education, communication, work, health, environment, economy, etc. Internet of things can be seen as the next step in the evolution of the Internet. It is a major breakthrough in the ability of the Internet to collect, analyzes, distribute and translate data.(Evans, 2011)

The term "Internet of Things" (IoT) was used by Kevin Ashton, a RFID (Radio Frequency Identification) researcher in 1999 to describe the use of networked data sensors in retail, manufacturing, healthcare, consumer products and other industries. These sensors can collect data about device usage and ambient conditions. Sensors can be used to allow people and machines to better understand their environment. (Martin, 2016)

Internet of Things describes the real-time networking of objects and things and in particular the convergence of the real and virtual worlds. (Kagermann, 2015) The objects that will be connected to the internet which are essentially a network, it can be anything that you can imagine. The system enables for a large number of things in the network, independent machines or electronic devices to communicate and provide flow of information with each other. Through embedded sensors, light, temperature, pressure, vibration, airflow, humidity, pressure and movement can be measured at a high speed and transmitted as data. With this system, the machines will not only perceive their environment but will be used more effectively with the ability to regulate it. (Guban&Kovacs, 2017) In other words, objects from machine to machine via internet (M2M) or human to machine (M2H) will be able to manage their production process independently by interact with their physical environment. Internet of Things will be applied areas such as infrastructure, health, logistics, business life, community, environment, value-chain management, smart cities, smart water, aviation, smart home and office, automotive, media and entertainment, natural disaster monitoring, production lines, intelligent buildings, recycling and waste management .(Martin, 2016) Today, only a small part of the machines are networked but in the near future more devices will be connected to the network, products or even unfinished products will be allowed to reach common data. (TUSİAD, 2016)14 billion devices are planned to interact with each other through the Internet of Things by 2020.(EBSO, 2015)

2.1.2. Smart Factories

Smart factories undertake the production process with high technology automation systems. The aim is to minimize the human-based errors in production, Machines and equipment will have the ability to improve processes through self-optimization and autonomous decision making.(Roblek et al., 2016)

All tools, equipment, products and even raws providing coordination with each other through embeded sensors, for maximum efficiency. In a study carried out by Aegean Region Chamber of Industry mention three feature of smart factories. Smart factories are very successful in managing complex production processes quickly and smoothly. Products from smart factories are more trouble-free and last longer. In a smart factory, people, machines and production resources interact deeply with each other.(EBSO, 2015)

2.1.3. Cyber-Physical Systems

The convergence of real and digital worlds lead to physical objects are enriched with the flexible capabilities of dijital functions, transforming embedded systems into Cyber-Physical Systems.(Kagermann, 2015) National Science Foundation defined cyber-physical systems as follows: **"**cyber-physical systems; The basic principles of production processes such as monitoring, coordination and control are managed by mixed technology consisting of a combination of computing and communication. This mixed technology makes it much more intelligent by integrating physical machines with cyber technology.(EBSO, 2015)As a result, the process is referred throughly as cyber-physical systems. Cyber Physical Systems are software and computing power that embedded in physical things .(Almada-Lobo, 2015) Cyber physical systems mean that mechanical and electronic accessories are all interconnected and communicated within a network. This network covers everything that exists in the production cycle, not just the machines in it. Products and services or even raw materials and unfinished products are included to this network as part of the value system.

2.1.4. Big Data

Cyber physical systems gather substantial amount of data from its digital environment, hence requires a huge size of storage for the management of this data. (Kagermann, 2015) Therefore**,** the cloud computing systems are expected to play a very important role in the industry 4.0 (KPMG, 2015) The data is analyzed and generate new information will be used in the entire production line to optimization, quality and efficiency, real-time detection of defects and malfunctions**.** With the analysis of the information coming from a wide variety of sources, it will be possible to solve the defects in production.

2.1.5. Smart Robots

Robot is an electro-mechanical device that capable of performing autonomous or pre-programmed tasks.(Wikipedia) But smart robots can learn also teach to people, work with people, perform complicated tasks in production line and provide support, competent to decide independently. Intelligent robots will interact with machines, materials and other agents to increase productivity in production. (EBSO, 2015) Robots are used in various industries for a long time. Robot technology is becoming more flexible and prone to come together to work on by developing the competencies and also their purchasing costs are decreasing gradually.

In the future robots will increase their interaction with each other and people and workside by side with more secure and flexible .(TUSİAD, 2016) Today, robots are mostly used in industrial purposes. Especially a large number of robots are used in the automotive industry (EBSO, 2015)

2.1.6. Simulation

Simulation enables the products to be designed and tested in digital environment before actual production for take necessary measures to determine possible defects and errors that may occur in the production process. The use of three-dimensional simulations of products, materials and production processes during the design phase is expected to become increasingly widespread in the future. These virtual models, which are created by taking real time data, increase the quality and efficiency that will enable the product to be tested before production in the virtual world. (TUSİAD, 2016)

2.1.7. Vertical and Horizontal System Integration

Integration is defined as multiple systems coming together through programming, computer networks or corporate applications to form a single system. The higher the integration with the subsystem the more increase in functionality. At this point, engineers are ought to add integrated modules in the design phase to be integrated into other systems.(EBSO, 2015)

2.1.8. Cloud Computing Systems

A cloud system is to store large amounts of data on a server that can be accessed at any time with an internet connection instead of being stored on local data servers .(Guban&Kovacks, 2017) Cloud computing has originated from a search engine platform, and is a computing technology that capable of delivering low cost and high performance. It is currently an important platform that offers a variety of Internet services.(Zhou et al., 2016) Computer theorists predict that the cloud system will significantly shape the future of the Internet. According to this, in the future, it will be possible to reach the applications via direct cloud without creating any infrastructure in the devices due to the use of online clouds instead of computer hard disk. Moreover, cloud computing systems, as a growing sector, will be a field that has lots of competitions and companies make this information distribution will have a significant position. Also it would result a number of legal problems, as well as issues such as ensuring the security of personal information and preventing unwanted access to the clouds. (EBSO, 2015) In the following period, a large amount of data will be shared between companies and facilities. With increased performance of cloud technologies, processing times will drop to milliseconds. The data of the machines will be transferred to the cloud platforms and even the systems that carry out process control will be transported to the cloud system.(TUSİAD, 2016)

2.1.9. Cyber Security

Companies produce by using independent management and production systems. In order to protect the production lines and cyber physical systems against security threats and cyberattacks, with the increase in ability of connection with the systems, secure communication is getting more importance to determine the identity of each machine in the system and provide access to them.(Evans, 2011) Cyber security ensures that data security is kept under control. Otherwise, regular presence of the devices on the internet can cause data loss and inability to provide information security.

2.1.10. 3D Printers (Additive Manufacturing)

3D printer is a device that converts virtual three-dimensional computer data into real objects. Nearly everything can be produced with 3D printers, except for electronic components and motors. The printer works; firstly, the product is modeled as a 3D object by creating a prototype in the computer environment and divided into layers as virtually. In the printing process, the product is printed by pouring the melted raw material each layer as overlapping. With 3D printers, everything from artificial veins and human tissues to toys and wrenches can be produced and also it is even possible to construct buildings from giant printers in the construction sector. (EBSO, 2015) Today, aviation companies benefit from additive manufacturing techniques to reduce raw material costs and reduce the weight of vehicles. (TUSİAD, 2016)

2.1.11. Augmented Reality

Augmented reality blurs the line between the virtual and the real universe, ensures that our senses such as; seeing, touching, feeling, hearing, sniffing, take an action in virtual world which was created. With the application of augmented reality, inputs which arouses human senses and emotions is being reproduced and enriched by computer in a virtual environment, emerging reality is presented to the user's perception. Enrichment occurs in real time and communicates with surrounding objects. Augmented reality is an innovation to be used intensively in many activities in production processes. For instance, it helps industrial designers to examine operations and their designs before they are completed. With augmented reality, you can show your customers what's inside, without opening a product's package by preview. The use of augmented reality also provides benefits for assembly lines. Boeing, BMW and Volkswagen use augmented reality in the assembly line to improve manufacturing and assembly processes. In big machines, because of multiple layers or structures, maintenance is also difficult. Employees with the help of augmented reality will be able to make maintenance easier because they will see the location and cause of the problem more clearly. Augmented reality applications has already been started to benefit from**.** For instance, Siemens has developed a three-dimensional virtual training module with augmented reality feature. This module which is connected to database teaches employees what to do in case of emergency. (RüBmann et al., 2015)

3. INDUSTRY 4.0 IN THE WORLD AND IN TURKEY

The emergence of Industry 4.0 is closely related to shifting global production from the west to the east.(Khan, Turowski, 2016) In the last two decades, there has been a serious axis shift in global industrial production. Currently, most of the of the giant brands moved production facilities to China, Indonesia and other Asian developing countries, to benefit from the advantages of cheap labor. The share of developing countries in worldwide production is 40% and in the last two decades they have doubled their share. Western Europe as part of the traditional manufacturing industry has lost 10% of value added in production. (Roland Berger, 2014) Industry 4.0 is the product of R & D studies developed to stop this trend. Extracting human from production, also provide cost reduction and decrease in error rates are main objectives for the fourth industrial revolution.

Industry 4.0 is expected to come up with benefits in four areas. These are; productivity, revenue growth, employment and investment. (RüBmann et al., 2015) There will be significant improvement in efficiency. According to survey conducted by PWC companies expect 3.6 % p.a reducing on operational cost on average while increasing efficiency by 4.1% annually (PWC, 2016)

In the next 5-10 years, the conversion costs which exclude the cost of materials are estimated to improve between 15% and 25% in German manufacturing sectors. When raw material costs are included, productivity gain is expected to be between 5% and 8%. These improvements, for instance, will impact an 90-150 billion euros in German manufacturing sector. Industry 4.0 will also drive revenue growth. The increase in revenue growth would be 1% of the GDP in Germany, which corresponds to an increase of about 30 billion. On the other hand, in order to adapt the production processes to Industry 4.0, 1-1.5% of the revenue of the producers should be allocated to the investment. (RüBmann et al., 2015)

Employment is another area where the effects of Industry 4.0 will be deeply felt. With the employment of robots and machinery rather than low-skilled workforce, a significant reduction is expected in employment for this type of workforce. However, employment is expected to increase by 6-10%.(TÜSİAD, 2016) According to a research conducted by Oxford in February 2016, it's concluded that artifial intelligence will take away 50% of jobs in the United States, 35% in the UK, 77% in China, 57% in OECD countries from people. However, the fourth industrial revolution, like other industrial revolutions, will reveal its own professions. In this context It is expected that many new professions emerge which does not needed today. For example; Data Center Technician, Digital Sense Developer, Robot Mechanic, Digital Data Garbage, etc. (MTSO, 2017)

It is obvious that the qualifications required by the employees will change as the employment of the low-skilled workers will be replaced by the automation systems. More efficient workforce will be needed to effectively manage new technologies. Also have a wide acquaintance with network systems, statistics and programming principles will gain importance. This competency transformation is one of the most important challenges ahead. (RüBmann et al., 2015) In the next 10-year period, while the non-qualified labor force is expected to decrease by 400-500 thousand, there will be about 100-500 thousand new job opportunities which will be brought up by economic growth as well as 100 thousand qualified labor force. Decrease in the number of employees will compensate for employment losses of 2-3% annually. (TÜSİAD, 2016)

Industry 4.0 is also projected to cause structural changes on sectoral basis. All these digitalization and automation processes will have significant impacts on small and medium-sized enterprises. Although the severity of this effect cannot be precisely predicted, it is likely to deepen the existing differences between large and small enterprises. As a matter of fact, while large enterprises are starting to move towards Industry 4.0, small enterprises have not yet reached the level of awareness about the process.(Sommer, 2015)

Industry 4.0 and related technologies are becoming more important in terms of global estimation. Some of the predictions can be listed as follows:

-In 2018, the number of robots will be used in industry will be 3 million and the number of connected devices will be 29 billion.

-In 2020, the market size of Internet of things will be $ 1.7 trillion,

-In 2025 the manufacturing process in developed countries will be based on automation at 15-25% (TÜBİTAK, 2017)

Until 2020, it's estimated that 6.5 billion people and 18 billion objects will have been connected to the mobile network, (Kagermann, 2015) also in 2020, it is foreseen that approximately 50 billion devices will communicate with each other. As a result of the combination of intelligent production systems, smart city, home, logistics, network, device elements with social and e-commerce networks; data, services, objects and the ecosystem network will be established by individuals by using the internet environment is predicted to affect approximately 46 percent of global trade volume in the next quarter century.(Sahin, 2017)

Industry 4.0 approach in term of Turkey means that competitiveness in production, sustainability and produce high value-added products and services.(Sahin, 2017) In the report prepared by TUSIAD and BGG expressed that with the adaptation of industry 4.0 technologies, total productivity increase in manufacturing sectors will be around 4-7% in Turkey and yield between 5-15% increase in the cost of conversions. It is expected that the competitive advantage gained through the economy that will be formed within the framework of Industry 4.0 will increase by 3% annually in industrial production. In order to incorporate the Industry 4.0 technologies into the production process, it is estimated that approximately 10-15 billion TL investment should be made, which corresponds to approximately 1-1.5% of the annual revenues of the producers in the next 10 years.(TUSİAD, 2016)

Industry 4.0 is an opportunity for Manufacturing Industry in Turkey to leave the low value-added production cycle. Developments in other countries of Industry 4.0 applications will intensify the competition pressure on Turkey. If Turkey does not realize Industry 4.0 investments, it will face increasing competitive pressure caused by both developed and developing countries via the improvement in productiviy with the implemention of ındustry 4.0. This will cause a fall in the market share and trapped Turkey in a vicious circle of low value-added production. (TUSİAD, 2016)

Digital maturity level of turkish manufacturing industry is somewhere between industry 2.0 and Industry 3.0. Three sectors with the highest maturity are; Material (plastic, rubber), computer electronics and optical products, Automotive and white appliances. Three technologies that are considered to provide the highest value added; automation and control systems, advanced robotic, additive production. The three sectors where the added-value is expected to be the highest; will be machinery and hardware, computer and electronics, automotive and white appliances.(TÜBİTAK, 2017)

However, the implementation of industy 4.0 succesfully with cost efficiency, high production pace, flexibility, high quality, increasing qualified workforce; increases Turkey's global competitiveness, share of high value added products in total production, changes the labor profile and new employment fields are expected to emerge. (TUSİAD, 2016)

4. COMPETITIVENESS

The concept of competitiveness is generally handled and defined at three different levels: firm-level industry and international (national). Firm-level competitiveness described as any firm can produce at a lower cost than its competitors in national or international markets equal to or better than its competitors in terms of product quality, service offered or

attractiveness of the product, and also have the ability to innovate and invent. Industrial competitiveness is the ability of an industry to achieve and maintain a level of efficiency equal to or higher than its competitors, or its ability to produce and sell products at an equal or lower cost than its competitors. National (or more commonly used international) competitiveness is defined as the ability of a country to produce goods and services in accordance with the conditions and standards of international markets while increasing the real income of its people in the long term under free and fair market conditions.(Aktan, Vural, 2004)

The competitiveness express the competitiveness at the level of relatively higher incomes and employment in international competition of firms, industry, region, country or economic integrations, in other words in terms of price, quality, design, credibility and on-time delivery a country's goods can compete with other countries.(Demir, 2001)

The competitiveness of the a country depends on factors such as the level of development and efficiency of R & D activities, the performance of various sectors, the country's foreign trade surplus, the production of high-tech goods and the presence of skilled, trained labor force. While analyzing competitiveness with all these indicators; factors like democratization, tax structure, human rights, quality and freedom of education etc. which plays an important role in determining the position of the country in the world must be taking into consideration.(Çivi, 2001)

4.1. The Impact of Industry 4.0 on Competitiveness

According to the US Competitiveness Council, the factors that determine the competitiveness have changed over time. Whereas in the past "quality and low production costs" were an important determinant of competitiveness, the impact of these factors has decreased today. According to this institute, which states that it is not possible to compete via low labor costs, equal access to markets with other firms and production of standard products by using standard production methods; Nowadays, it is expressed that competitiveness can be achieved by having innovation capability and launching produced goods and services depending on this ability before the competitors. (Porter,Stern, 1999)

Technology and innovations are very important in terms of competitiveness of firms. Enterprises which renew their technologies, products and other factors can increase their competitiveness more easily. R & D activities should be given importance for changing technologies and making innovations. (TİSK, 1995) In order to increase the competitiveness of the companies by using new products and technology, there should be an encouraging environment. According to Porter, innovation is the source of competitiveness. In today's industries, where knowledge is intensly used, prosperity is based on innovation capabilities rather than low cost. Innovation provides increase in added-value and productivity for countries also raises the competitiveness, as well as helps figuring out global problems. In a competitive environment created by new technologies and globalization, specialization in technological innovation is the underlying reason for the ability to achieve international competitiveness. (Sarıçoban, 2013)

R & D leads to technological development, technological development leads to efficiency and high quality production, which bring along profitability and wealth by increasing competitiveness and global market share. Therefore, it can be said that the main factor determining the competitiveness is high and sustainable productivity increase arise from R & D and innovation. Effective competitiveness institutions and rules that nourish the competitive environment and the labor force with high level of education and superior skills that can use innovation to improve production processes and products are also the main factors that inreases competitiveness.(Taş, 2005)

As a new production model industry 4.0, new generation products and production processes are designed, controlled and coordinated by the digital and smart elements in its content and thus faster, efficient and error-free production is realized. Undoubtedly, thanks to these new generation production processes, significant savings will be achieved as a result of cost reductions in production stages, mass production and customizable products will increase, and national economic growth and macroeconomic growth and welfare will increase. (Salgar and Dereli, 2018)

In this century, competition in trade has perhaps reached the top. At this point, the competition has a mission to meet the basic requirements of the country in terms of productivity, welfare and high income level. Adaptation of new technologies has a vital role for sustainability of competitive power in industry.

Countries that adopt Industry 4.0 technologies are expected to be advantageous in terms of global competitiveness due to serious cost advantages, and those who do not adopt are at the risk of losing their existing competitive advantage. As a result of that, if Turkey do not change it's cost structure while Germany realizing industry 4.0 transition, it is obvious that Turkey will lose it's regional competitive advantage. (TUSİAD, 2016)

Turkey already has structural problems in terms of competition structure and most important problems are; high dependence on imports, low share of high value-added products in total production, inadequacy of skilled workforce and low R & D expenditures.

In recent years ranking of the Global Competitiveness Report, it is shown that there is a decrease in Turkey's competitiveness power. While in 2014-2015 period Turkey was on the 45. Rank, it has dropped to 51. in 2015-2016 period. The next year, with a four-point decrease, took place in 55th place among 140 countries and raised by two points in the 2017-2018 period to 53th place among 137 countries. In terms of the sub-index, market size as the most advantageous point take 14th place. Also technological readiness ranked at 62th and innovation ranked 69th (WEF, 2018) Industry 4.0 report by TUSİAD express that Turkey is at a crossroads that between losing dünya çapında competitiveness or taking a giant step to participate developed countries. If Turkey's economy does not keep up to new innovations, can be lost global competitiveness it already has.

5. CONCLUSION

The process of industry 4.0 will provide many advantages to the production process. Smart products, individualized special production, saving on raw materials and resource use, productivity increase, smart self-governing factories, a new production order, unskilled workforce reduction in employment caused by the increase of using robots in production, minimum margin of error in production are just a few of them.

Traditional production systems are eventually doomed to disappear in the long run. This is why Industry 4.0 vision adaptation is very important for developing countries like us. According to some experts, it is our way out from the middle income trap. At this point, the change in mentality is one of the most important problems we face. It is a necessity for us to notice quickly the developing trends and intensify our efforts in this direction. The adaptation of new technologies requires a change of mantality as well as many structural and organizational changes. The most primary need of Turkey, which is positioned between Industry 2.0 and 3.0, is a method accounting.

In addition to many advantages brought by Industry 4.0, it's disadvantages should be taken into consideration. The change of the necessary skills in the labor force and the phenomenon of unemployment is one of them. Considering inadequately trained workers and required time for society to become familiar with new technologies, it is possible to say that the future projections about unemployment are not very bright.

Industry 4.0 have a substantial potential to change global competition environment. If Turkey wants to stay competitive, Industry 4.0 should be analyzed in detail with respect to its advantages and disadvantages in the global level and road maps should be prepared for the integration of the digital innovations that can be implemented urgently to the production systems and for the ones that will requires more time and cost, road maps should be prepared for integration into the manufacturing industry within a plan. Although, the coordination of the major industrial organizations and the relevant units of the state is very important, inclusion of universities to the process will be very beneficial.

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