The Mediator Role of Artificial Intelligence in the Influence of Corporate Strategies and Competitive Strategies on Company Performance

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Submitted: *14.03.2023* ***Accepted:*** *20.10.2023* ***Published:*** *30.11.2023*

Abstract

The purpose of this study is to explore the mediator role of artificial intelligence (AI) in the influence of corporate strategies and competitive strategies on company performance in finance, telecommunication and information technology (IT) sectors in Turkey. This study focuses on the mentioned sectors since they are pioneers and heavy users of digital technologies. Data was collected from 569 employees in these sectors. Frequency distribution analyses, explanatory and confirmatory factor analyses, reliability analysis, correlation analysis, structural equation modeling, and mediator variable analysis were conducted to the data. According to the findings of the research, corporate strategies and competitive strategies have significant influences on AI and company performance. It is observed that AI has a significant influence on company performance. In addition, there is a partial mediating role of AI in the influence of corporate strategies and competitive strategies on company performance.

JEL classification: M10

Key Words: Corporate Strategies, Competitive Strategies, Company Performance, Artificial Intelligence.

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1. Introduction

The Digital Age lead businesses to act inline with their end users and ecosystems while fostering proactivity in both work and personal life. The adoption of new digital technology is upending traditional business models and procedures. The majority of artificial intelligence (AI) related work is technical, focusing on its engineering and technological aspects. The possible influences of AI integration on the business environment and procedures are the subject of the limited academic research. The support of AI technologies in corporate strategy and business strategy formulation needs to be examined while the use of AI technologies in business continues to grow.

The purpose of this study is to explore the mediator role of AI in the influence of corporate strategies and competitive strategies on company performance in finance, telecommunication and information technology (IT) sectors in Turkey. In the beginning of the thesis, concepts of the study are explained: growth strategy in the concept of corporate strategies; cost leadership and differentiation strategies in the concept of business (competitive) strategies; financial and innovation performance in the concept of company performance. Then, the AI is presented and the drivers of the digital technologies for the strategy are explained by focusing on finance, telecommunication and IT sectors. In the later sections of the thesis, the mediator role of AI is examined, and the research methodology and research findings are presented. Then, the conclusion will sum up the findings.

2. Conceptual Framework

2.1 Corporate Strategies

Corporate strategy is a decision-making framework which identifies and articulates organizational goals and objectives, develops fundamental policies to carry out these goald and describes the variety of commercial and economic organizational activities as well as the details of the financial and non-financial contributions to plans as stated by Andrews (1980) (Kurien, 2013: 12).

2.1.1 Growth Strategy

Alfred Chandler (1962) recommends that businesses alter their growth plans to make better use of their resources in the light of evolving technology, income, and demographic trends. Chandler (1962) was also upfront about how strategy and structure develop. He asserted that

straightforward volume expansion was the primary driver of initial growth followed by geographic expansion, vertical integration, and lastly product diversification (Kalinowski, 1987: 22).

Zahra and Covin (1993), and Adler (1989) emphasize the need for relationship between strategy and technology (Parker, 2000: 55). In order for a company to succeed in a certain industry, Porter (1983) asserts that strategy must lead to the development of technology to be competitive. As stated by Zahra and Covin (1993) and Itami and Numagami (1992), technology development can provide a company a variety of competitive weapons and a technological foundation applicable to other industries (Parker, 2000: 56).

A company with a stabilization strategy maintains its current market share to utilize opportunities. When a company implements a retrenchment strategy, it reduces external/internal flaws by downsizing, withdraws finances, and cuts budgets (Lu, 2006: 529). In the literature, there is no relationship between retrenchment strategy, stability strategy, technological advancements and utilization, and company performance. Therefore, retrenchment and stabilization strategies are not addressed in this study.

2.2 Business Strategies (Competitive Strategies)

Companies have strategies which enable them to maximize their performance most effectively (Snedegar, 2009: 35). According to Porter (1980), these strategies include competitive strategies such as brand recognition, technology leadership, channel selection, and cost positioning (Dess and Davis, 1980: 470). Porter (1980) developed three generic strategies for establishing a defensible position in the industry and outperforming competitors: Strategies for cost leadership, differentiation, and focus (Dess and Davis, 1984: 469).

2.2.1 Cost Leadership Strategy

According to Porter (1980), a cost leadership approach emphasizes low costs relative to rivals without sacrificing service, quality, etc. (Dess and Davis, 1984: 469). Achieving cost leadership strategy leads building efficient scale facilities, focusing on experience, costs and overhead reductions, avoiding marginal customer accounts, and integrating service, R&D, advertising, sales, etc. (Regner, 2007: 14-15). Porter (1980) suggested that the status of cost leadership has three organizational benefits: (1) Cost leadership enables a company to reach higher profits than its competitors; (2) An industrial cost leadership position forms a barrier

against competitors to undercut the cost leader in price competition; (3) A cost leader company forms a new market entry barrier (Hudson, 2001: 29-31).

2.2.2 Differentiation Strategy

Porter (1980) believes that differentiation strategy leads the company to create unique products and services in the sector so it can charge above-average prices (Dess and Davis, 1984: 469). This requires atracting customer demands, investing in researches, finding out customer needs, and producing higher quality products and services (Al-Sukkar vd., 2013: 3). According to Porter (1980), differentiation may be based on brand image, product design and attributes, distribution, technology, customer service, etc (Frambach et al., 2003: 381). Porter (1985) added that differentiation strategy could include aspects such as customer service, brand name, sales network, technology, and the optimal strategy for a company is to differentiate itself in several dimensions (Kurt et al., 2016: 101).

Ibrahim and Ellis (1998) state that a focus strategy is focusing on a specific product/service offering and a specific market group of customers (Giguere, 2004: 33). Cost focus and differentiation focus strategies are implemented by companies with limited resources which serve to specialized markets since they concentrate on certain product or market segments. Thus, focus strategies are not taken into consideration this study.

2.3 Company Performance

According to Saraf et al. (2007) and Venkatraman and Ramanujan (1986), a company performance is "organizational effectiveness in terms of its financial and operation performance" (Ong vd., 2013: 74). Measuring performance is essential for initiating, implementing, and controlling a strategic plan. It helps managers assess if the company is moving into the intended direction (Teeratansirikool et al., 2012: 169). Besides financial performance indicators, there are also non-financial performance indicators such as stakeholder performance, R&D spendings, process and product innovations (Wen et al., 2008: 150).

2.3.1 Financial Performance

The idea of company performance is one of the fundamental subjects in strategic management. According to Beard and Dess (1981), corporate strategies and business strategies play significant roles in influencing the profitability (financial) performance of the company. Due to this, academic studies analyzing the organizational performance have tendencies to

emphasize financial performance more for instance Yamin et al. (1999), Hunt and Morgan (1995), and Miller and Friesen (1986) (Karaboğa, 2015: 24). Profitability, growth rates, liquidity (Zehir and Acar) are some of the key financial organizational performance metrics along with return on investments (ROI), return on sales (ROS), return on assets (ROA), return on equity (ROE) (Lee, 1987), market share and productivity (Karaboğa, 2015: 25).

2.3.2 Innovation Performance

Besides financial targets, non-financial targets are beneficial for estimating and evaluating company performance as suggested by Lo et al. (2016) and Elbashir, Collier, and Davern (2008) (Summers, 2018: 45). Nowadays organizations should pursue a more complex competitive performance dimensions such as innovation and quality (Prajogo and Sohal, 2006: 300).

Ernst (2001) notes that while measuring innovation performance, the entire process from the creation of a product or service idea to its production and introduction to the market should be taken into account. Rabor et al. (2011) state that environmental factors (competition intensity, technological developments, market fluctuations), internal factors (human resources, organizational culture and strategic orientations), organizational strategic capabilities (production capacity, technological capacity, marketing capacity, knowledge and learning ability), and R&D, production, and marketing integration influence organizational innovation performance (Karaboğa, 2015: 26).

2.4 Artificial Intelligence (AI)

AI is a collection of technologies which give computers the ability to perceive their environment to understand and interpret data, recommend courses of action or make decisions (Kolbjornsrud et al., 2016: 6). This includes technologies and disciplines underlying abilities such as voice recognition, image recognition, natural language processing which capitalize on advancements in image processing and algorithms, computational capacity, and sophisticated analytical techniques such as deep learning and machine learning (Elliot and Andrews, 2017: 7). In terms of the technological backdrop, the AI's innovative features reveal the most important variables for AI adoption. Compatibility, relative advantage, and complexity are consistently connected with AI acceptance and innovation as indicated by Tornatzky and Fleischer (1990) and Wu et al. (2007) based on previously examined frameworks (Chen, 2019: 51).

Compatibility: Rogers (1995) defines compatibility as the scope of innovation and its capacity to provide experience and value while fulfilling the needs of adopters. Chui (2017) believe that successful AI transitions need a sufficient AI business logic and must be inline with strategies (Alsheibani vd., 2018: 6).

Relative advantage: Rogers (2003) emphasizes that the perceived value of innovation influences a company's decision to adopt innovative technologies (Chen, 2019: 52). AI enables companies acquire competitive advantages, cut costs as stated by Press (2016), and create commercial chances to expand into new industries as added by Ransbotham (2017), and increase productivity and profits and improve human intelligence as higlighted by Curran and Purcel (2017) (Alsheibani vd., 2018: 4).

Complexity: AI is difficult due to its immaturity, lack of technological skills and IT specialists, expensive prices, and long development time. According to Huang and Palvia (2001), companies can adopt new technologies if they can collaborate effectively with their suppliers (Chen, 2019: 53).

2.5 Artificial Intelligence in Sectors

Several companies anticipate that AI will optimize their operations, lead to efficiencies and cost reductions, and deliver a superior customer experience, all of them are at the core of their businesses (Microsoft and EY, 2019: 40).

Hsieh (1993) acknowledges that the following corporate finance practices could be improved by adapting artificial neural network technology, doing financial simulations, practicing behavioral finance, doing financial analyses, approving credits, applying portfolio management, determining capial structure and pricing IPOs (Bahrammirzaee, 2010: 1166).

The telecom industry, as discussed by Zhang and Lorenz (2018), is concerned with how to use the potent analysis, judgment, prediction, and other capabilities by AI algorithms to improve the application of business systems and network elements to integrate AI with the design, implementation, operation, maintenance, and optimization of telecommunication networks (Chen, 2019: 16). AI technology can be implemented in the telecom sector’s new digital services, customer experience, process automation, network automation, and infrastructure repair (Chen, 2019: 18).

3. Methodology

3.1 The Purpose of the Research

The purpose of this study is to explore the mediator role of AI in the influence of corporate strategies and competitive strategies on company performance in finance, telecommunication and IT sectors in Turkey.

3.2 The Model of the Research

Based on the validated models of Davis's (1989) Technology Acceptance Model (TAM) and Henderson and Venkatraman's (1993) Strategic Alignment Model (SAM) (De Haes, 2007: 22), the research model is shown in Figure 1.

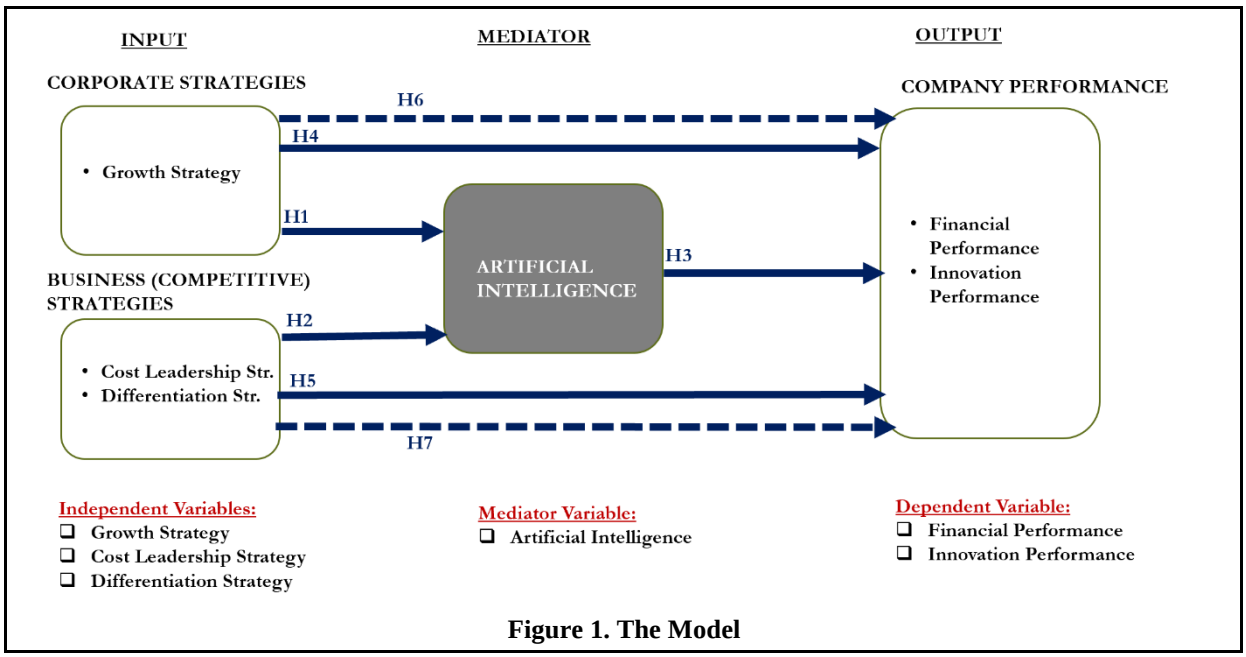

Figure 1. The Model

3.3 Hypotheses of the Research

The study hypotheses are as follows:

H1: Corporate Strategies have an Influence on Artificial Intelligence.

H1a: Growth Strategy Organic Growth Dimension has an Influence on Artificial Intelligence.

H1b: The Growth Strategy Internationalization Dimension has an Influence on Artificial Intelligence.

H2: Business (Competitive) Strategies have an Influence on Artificial Intelligence.

H2a: Cost Leadership Strategy has an Influence on Artificial Intelligence.

H2b: Differentiation Strategy has an Influence on Artificial Intelligence.

H3: AI has an Influence on Company Performance.

H3a: AI has an Influence on Financial Performance.

H3b: AI has an Influence on Innovation Performance.

H4: Growth Strategies have an Influence on Company Performance.

H4a: Growth Strategy the Organic Growth Dimension has an Influence on Financial Performance.

H4b: Growth Strategy the Organic Growth Dimension has an Influence on Innovation Performance.

H4c: Growth Strategy the Internationalization Dimension has an Influence on Financial Performance.

H4d: Growth Strategy the Internationalization Dimension has an Influence on Innovation Performance.

H5: Business (Competitive) Strategies have an Influence on Company Performance.

H5a: Cost Leadership Strategy has an Influence on Financial Performance.

H5b: Cost Leadership Strategy has an Influence on Innovation Performance.

H5c: The Differentiation Strategy has an Influence on Financial Performance.

H5d: Differentiation Strategy has an Influence on Innovation Performance.

H6: AI has a Mediator Role in the Influence of the Corporate Strategies on Company Performance.

H6a: AI has a Mediator Role in the Influence of the Organic Growth Dimension of the Growth Strategy on Financial Performance.

H6b: AI has a Mediator Role in the Influence of the Organic Growth Dimension of the Growth Strategy on Innovation Performance.

H6c: AI has a Mediator Role in the Influence of the Internationalization Dimension of the Growth Strategy on Financial Performance.

H6d: AI has a Mediator Role in the Influence of the Internationalization Dimension of the Growth Strategy on Innovation Performance.

H7: AI has a Mediator Role in the Influence of Business (Competitor) Strategies on Company Performance.

H7a: AI has a Mediator Role in the Influence of Cost Leadership Strategy on Financial Performance.

H7b: AI has a Mediator Role in the Influence of Cost Leadership Strategy on Innovation Performance.

H7c: AI has a Mediator Role in the Influence of Differentiation Strategy on Financial Performance.

H7d: AI has a Mediator Role in the Influence of Differentiation Strategy on Innovation Performance.

3.4 Sample of the Research

According to the data of TUBISAD (Information Industrialists' Association) (2019), there are 51,574 IT employees in Technocitites. According to the data of The Bank Association of Turkey (TBB) (2022) there are 188,660 employees. Thus, the minimum sample size was should be 384 with 95% reliability and 5% sampling error. This research was conducted on 569 employees in finance, telecommunication and IT sectors.

3.5 Methods of the Analysis

Analyses were conducted by using SPSS 21.0 and AMOS 21.0. Frequency Distribution Analyses, Normality Tests, Exploratory Factor Analysis, Confirmatory Factor Analysis (CFA), Pearson Correlation Analysis, Structural Equation Modeling (SEM) and mediator variable analysis were conducted to the data.

3.6 Scales of the Research

Each of the scales employed in this research has been utilized in international researches and has a high level of validity. The Turkish version of Zehir's (2016) scale which was validated based on Dess and Davies's (1984) and Porter's (1980) data was used for cost leadership and differentiation strategies. Chen's (2019) scale was used to measure AI qualities. Pelham and Wilson's (1996) financial measurement metrics were used in our research. For innovation

performance, Prajogo's (2006) study which examined innovation performance based on the idea of technology was used.

3.7 Limitations of the Research

Although there are several studies in literature on corporate strategies and competitive strategies, academic research on AI and digitilization technologies and strategies is limited. Since businesses and users have different perceptions regarding the definition, application, prevalence, measurement level and duration of artificial intelligence, there is a possibility of providing insufficient or incorrect information.

4. Data Analysis

4.1 Descriptive Statistics

Table 1 provides information about participants

Table 1. Demographic Characteristics of Participants

		n	%
Sector of the company	Telecomunication	158	27,5
	Finance	226	39,4
	Information Technologies (IT)	188	32,8
	Other	2	0,3
Scope of the company	National	340	59,2
	International	183	31,9
	Global	51	8,9
Number of employees	0-49	114	19,9
	50-249	204	35,6
	250-1000	107	18,7
	1001 and more	148	25,8
Unit of the participant	Sales	79	13,8
	Marketing	66	11,5
	Purchasing	26	4,5
	Finance	144	25,1
	IT-Software	27	4,7
	IT-Infrastructure	5	0,9
	IT-Data	17	3,0
	IT-Security	20	3,5
	Enterprise Architecture	10	1,7
	Strategy - Innovation	7	1,2
	R&D	45	7,8
	Program/Project Mng	62	10,8
	Human Resources	53	9,2

	Logistic	13	2,3
Position of the participant	Company Owner	34	5,9
	High Level Manager	101	17,6
	Mid Level Manager	263	45,8
	Subject Matter Expert	176	30,7
Tenure in the current company of the participant	0-2 years	80	14,0
	3-5 years	236	41,2
	6-10 years	207	36,1
	11 years and more	50	8,7
Education	Bachelor	349	60,9
	Master	209	36,5
	Phd	15	2,6

Table 2 provides data on AI technology utilized in the organization where the participants work.

Table 2. Statistics of AI Technologies Used in the Company

		n	%
AI technologies used in the company	Machine Learning	249	43,4
	Smart Robotics	383	66,7
	Neural networks and deep learning	268	46,7
	Text analysis	361	62,9
	Natural Language Processing	334	58,2
	Virtual Asssistants	349	60,8
	Speech recognition	380	66,2
	Image recognition	354	61,7
	Smart mobile	456	79,4
	Blockchain	57	9,9
	Cibersecurity	406	70,7
	AR/VR	237	41,3
	Internet of Things - IOT	15	2,6
	Other	5	0,9

Table 3 provides data on how AI and digital technology are used in the organizations where the participants work.

Table 3. Statistics Regarding the Usage Areas of AI and Digital Technologies in Companies

		n	%
	Customer services	492	85,7

Usage areas of AI and digital technologies in companies	Process optimizations	457	79,6
	Product-service transformation	379	66,0
	Employee development	361	62,9

4.2 Confirmatory Factor Analysis (CFA) & Reliability Tests

Confirmatory factor analysis (CFA) was carried out after finding the factor structure. Also, it is observed that all factor loads of the scales comprimise the accepted levels as being more than 0.60. Table 4 displays the results of the confirmatory factor analysis (CFA).

Table 4. CFA Analysis

Factor	Item	Factor Load	B	Standartize B	Std e.	P	AVE	CR	Cronbach's Alpha
Growth Str Dimension 1 GS_DIM1	GS1	0,799	1	0,670			0,40	0,82	0,809
	GS2	0,634	1,090	0,739	0,074	***			
	GS3	0,804	1,131	0,710	0,079	***			
	GS4	0,751	1,176	0,678	0,086	***			
	GS5	0,606	0,796	0,357	0,105	***			
	GS6	0,791	0,727	0,576	0,061	***			
	GS7	0,791	0,881	0,625	0,069	***			
Growth Str Dimension 2 GS_DIM2	GS8	0,963	1	0,886			0,81	0,90	0,895
	GS9	0,940	1,065	0,914	0,049	***			
Cost Leadership Str CLS	CLS1	0,736	1,000	0,493			0,34	0,88	0,876
	CLS2	0,683	1,059	0,561	0,110	***			
	CLS3	0,793	1,356	0,673	0,127	***			
	CLS4	0,729	0,995	0,500	0,111	***			
	CLS5	0,833	1,014	0,542	0,107	***			
	CLS6	0,765	1,408	0,631	0,137	***			
	CLS7	0,686	1,108	0,550	0,116	***			
	CLS8	0,655	1,173	0,626	0,115	***			
	CLS9	0,735	1,451	0,654	0,138	***			
	CLS10	0,812	1,004	0,558	0,104	***			
	CLS11	0,744	0,835	0,457	0,099	***			
	CLS12	0,817	1,034	0,559	0,107	***			
	CLS13	0,705	1,237	0,603	0,123	***			
	CLS14	0,821	1,310	0,658	0,124	***			
Differentiation Str DS	DS1	0,771	1,000	0,493			0,34	0,88	0,876
	DS2	0,751	1,059	0,561	0,110	***			
	DS3	0,789	1,356	0,673	0,127	***			
	DS4	0,811	0,995	0,500	0,111	***			

	DS5	0,793	1,014	0,542	0,107	***			
	DS6	0,808	1,408	0,631	0,137	***			
	DS7	0,767	1,108	0,550	0,116	***			
	DS8	0,779	1,173	0,626	0,115	***			
	DS9	0,744	1,451	0,654	0,138	***			
	DS10	0,821	1,004	0,558	0,104	***			
	DS11	0,815	0,835	0,457	0,099	***			
	DS12	0,699	1,034	0,559	0,107	***			
	DS13	0,672	1,237	0,603	0,123	***			
	DS14	0,713	1,310	0,658	0,124	***			
AI Dimension 1 AI_DIM1	AI1	0,859	1,000	0,911			0,76	0,94	0,941
	AI2	0,904	0,955	0,894	0,028	***			
	AI3	0,908	0,899	0,904	0,026	***			
	AI4	0,915	0,878	0,873	0,028	***			
	AI5	0,848	0,751	0,779	0,030	***			
AI Dimension 2 AI_DIM2	AI6	0,822	1,000	0,842			0,70	0,92	0,921
	AI7	0,829	1,054	0,849	0,042	***			
	AI8	0,763	0,988	0,809	0,042	***			
	AI9	0,770	0,954	0,824	0,039	***			
	AI10	0,685	0,981	0,864	0,038	***			
AI Dimension 3 AI_DIM3	AI11	0,713	1,000	0,563			0,59	0,81	0,779
	AI12	0,877	1,346	0,869	0,098	***			
	AI13	0,899	1,218	0,832	0,090	***			
Financial Performance FP	FP1	0,799	1,000	0,801			0,70	0,96	0,960
	FP2	0,868	1,035	0,836	0,036	***			
	FP3	0,851	0,935	0,820	0,041	***			
	FP4	0,848	0,954	0,804	0,043	***			
	FP5	0,884	0,991	0,852	0,041	***			
	FP6	0,879	0,961	0,843	0,040	***			
	FP7	0,933	1,005	0,867	0,041	***			
	FP8	0,861	0,921	0,818	0,041	***			
	FP9	0,899	0,995	0,887	0,039	***			
	FP10	0,920	0,952	0,855	0,039	***			
Innovation Performance IP	IP1	0,787	1,000	0,626			0,59	0,93	0,930
	IP2	0,806	1,255	0,716	0,073	***			
	IP3	0,848	1,391	0,761	0,081	***			
	IP4	0,777	1,406	0,781	0,091	***			
	IP5	0,852	1,554	0,797	0,100	***			
	IP6	0,820	1,432	0,806	0,091	***			

	IP7	0,889	1,415	0,829	0,088	***			
	IP8	0,811	1,412	0,780	0,092	***			
	IP9	0,812	1,434	0,791	0,093	***			

All elements are considered to be significant and trustworthy given the Alpha, AVE, p values and factor loads.

4.3 Correlation Analysis

The Pearson correlation test was used to examine the relationship between the variables. Table 5 displays the correlation among the various factors.

Table 5. The Correlation Among Variables

		1	2	3	4	5	6	7	8	9	10	11
1.	Growth Str-dimension1	1	0,497**	0,931**	0,612**	0,556**	0,533**	0,492**	0,502**	0,578**	0,570**	0,590**
2.	Growth Str-dimension2		1	0,779**	0,439**	0,500**	0,439**	0,375**	0,374**	0,447**	0,420**	0,500**
3.	Growth Str			1	0,627**	0,612**	0,570**	0,513**	0,519**	0,605**	0,588**	0,636**
4.	Cost Leadership Str				1	0,655**	0,547**	0,514**	0,559**	0,606**	0,494**	0,580**
5.	Differentiation Str					1	0,612**	0,517**	0,506**	0,617**	0,579**	0,678**
6.	AI – dimension1						1	0,722**	0,572**	0,888**	0,553**	0,535**
7.	AI – dimension2							1	0,673**	0,921**	0,467**	0,413**
8.	AI – dimension3								1	0,813**	0,488**	0,473**
9.	AI									1	0,571**	0,534**
10.	Financial Perf										1	0,734**
11.	Innovation Perf											1

*p<0,05; **p<0,01

Since r=0.605, growth strategies and AI are moderately positively related. Since r=0.588, growth strategies and financial performance are moderately positively related. Since r=0.636, growth strategies and innovation performance are moderately positively related.

Since r=0.606, cost leadership strategy and AI are moderately positively related. Since r=0.494, cost leadership strategy and financial performance are moderately positively related. Since r=0.580, cost leadership strategy and innovation performance are moderately positively related.

Since r=0.617, differentiation strategy and AI are moderately positively related. Since r=0.579, differentiation strategy and financial performance are moderately positively related. Since r=0.678, differentiation strategy and innovation performance are moderately positively related.

Since r=0.571, AI and financial performance are moderately positively related. Since r=0.534, AI and innovation performance are moderately positively related.

4.4 Mediation and Structural Equation Model Analysis

Table 6 displays the results of mediation analysis and structural equation modeling analysis to examine the influence of the independent variable on the dependent variable with a mediator variable.

Table 6. Mediator Variable Conditions

Path	Relation	Model 1		Model 2		Model 3	
		p	S.E	p	S.E	p	S.E
Independent --> Dependent	GS_DIM1 --> FP	***	0.071				
	GS_DIM1 --> IP	***	0.019				
	GS_DIM2 --> FP	0.810	0.034				
	GS_DIM2 --> IP	***	0.015				
	CLS --> FP	0.034	0.101				
	CLS --> IP	0.044	0.041				
	DS --> FP	***	0.261				
	DS --> IP	***	0.148				
Independent --> Mediator	GS_DIM1 --> AI_DM3			0.001	0.051		
	GS_DIM1 --> AI_DM2			0.072	0.065		
	GS_DIM1 --> AI_DM1			***	0.07		
	GS_DIM2 --> AI_DM3			0.020	0.027		
	GS_DIM2 --> AI_DM2			0.484	0.034		
	GS_DIM2 --> AI_DM1			0.677	0.036		
	CLS --> AI_DM3			***	0.106		
	CLS --> AI_DM2			***	0.112		
	CLS--> AI_DM1			***	0.117		
	DS --> AI_DM3			***	0.115		
	DS--> AI_DM2			***	0.161		
	DS --> AI_DM1			***	0.241		
Mediator --> Dependent	AI_DM3--> FP					***	0.078
	AI_DM3--> IP					***	0.031
	AI_DM2-> FP					***	0.047
	AI_DM2--> IP					***	0.021
	AI_DM1--> FP					***	0.047
	AI_DM1--> IP					***	0.02
R2		FP R2=0,158 IP R2=0,354		AI_DM1 R2=0,142 AI_DM2 R2=0,025 AI_DM3 R2=0,050		FP. R2=0,218 IP. R2=0,410	

In model 1, the influences of independent variables on dependent variables are studied. Since $p<0.05$, there are positive influences of independent variables on dependent variables except Dimension 2 (internationalization) of growth strategies on financial performance for $p>0.05$.

In model 2, the influences of independent variables on mediator variable are investigated. Since $p<0.05$, there are positive influences of independent variables on mediator variables except Dimension-2 (internationalization) of growth strategies on dimension-1 (compatibility) and Dimension-2 (advantage) of AI for $p>0.05$.

The 3rd model investigates the influences of the mediator variable AI on dependent variables such as financial performance and innovation performance. All AI dimensions influence financial performance and innovation performance for $p<0.05$.

4.5 The Mediator Role Investigation

Table 7 displays the results of the investigation with the role of mediator.

Table 7. The Mediator Role Consolidation

Road	Beta	p	S.E
Growth Str Dimension 1 GS_DM1 --> Financial Perf FP	0.263	***	0.071
Growth Str Dimension 1 GS_DM1 --> Innovation Perf IP	0.195	***	0.019
Growth Str Dimension 2 GS_INT2 --> Financial Perf FP	0.009	0.810	0.034
Growth Str Dimension 2 GS_INT2 --> Innovation Perf IP	0.126	***	0.015
Cost Leadership Str.CL --> Financial Perf FP	0.036	0.034	0.101
Cost Leadership Str.CL --> Innovation Perf IP	0.070	0.044	0.041
Differentiation Str.DIFS --> Financial Perf FP	0.572	***	0.261
Differentiation Str.DIFS --> Innovation Perf IP	0.732	***	0.148
Growth Str Dimension 1 GS_DM1 --> AI Dimension 3 AI_DM3	0,157	0,001	0,051
Growth Str Dimension 1 GS_DM1 --> AI Dimension 2 AI_DM2	0,081	0,072	0,065
Growth Str Dimension 1 GS_DM1 --> AI Dimension 1 AI_DM1	0,188	***	0,070
Growth Str Dimension 2 GS_INT2 --> AI Dimension 3 AI_DM3	0,107	0,020	0,027
Growth Str Dimension 2 GS_INT2 --> AI Dimension 2 AI_DM2	-0,030	0,484	0,034
Growth Str Dimension 2 GS_INT2 --> AI Dimension 1 AI_DM1	-0,016	0,677	0,036
Cost Leadership Str.CL --> AI Dimension 3 AI_DM3	0,394	***	0,106
Cost Leadership Str.CL --> AI Dimension 2 AI_DM2	0,275	***	0,112
Cost Leadership Str.CL --> AI Dimension 1 AI_DM1	0,234	***	0,117
Differentiation Str.DIFS --> AI Dimension 3 AI_DM3	0,181	***	0,115
Differentiation Str.DIFS --> AI Dimension 2 AI_DM2	0,276	***	0,161
Differentiation Str.DIFS --> AI Dimension 1 AI_DM1	0,535	***	0,241
AI Dimension 3 AI_DM3--> Financial Perf FP	0.213	***	0.078
AI Dimension 3 AI_DM3--> Innovation Perf IP	0.146	***	0.031
AI Dimension 2 AI_DM2-> Financial Perf FP	-0.130	***	0.47
AI Dimension 2 AI_DM2--> Innovation Perf IP	-0.263	***	0.021
AI Dimension 1 AI_DM1--> Financial Perf FP	0.218	***	0.047
AI Dimension 1 AI_DM1--> Innovation Perf IP	0.171	***	0.02
Indirect influence: Growth Str Dimension 1--> AI--> Financial Perf FP	0.190	***	0.070
Indirect influence : Growth Str Dimension 1--> AI → Innovation Perf IP	0.146	***	0.029
Indirect influence: Growth Str Dimension 2 --> AI --> Financial Perf FP	-0.016	0.651	0.034
Indirect influence: Growth Str Dimension 2--> AI --> Innovation Perf IP	0.108	0.002	0.015

Indirect influence: Cost Leadership Str. --> AI --> Financial Perf FP	-0.053	0.022	0.121
Indirect influence: Cost Leadership Str --> AI --> Innovation Perf IP	0.043	0.028	0.05
Indirect influence: Differentiation Str. --> AI --> Financial Perf FP	0.447	***	0.246
Indirect influence: Differentiation Str. --> AI --> Innovation Perf IP	0.658	***	0.143

Analysis of Growth Strategy organic growth dimension, AI and financial performance relation: The first dimension of growth strategy (organic growth) has a positive influence on financial performance (1st model Beta=0.263 $p<0.05$). The growth strategy dimension-1 (organic growth) influences the AI dimension-1 (compatibility) and dimension-3 (risk and complexity) mediator variables (2nd model $p<0.05$). When the mediator variables are included, the growth strategy dimension-1 (organic growth) has an influence on the financial performance, with a Beta=0.190 influence coefficient. AI dimension-1 (compatibility) and dimension-3 (risk and complexity) partially mediate the influence of growth strategies dimension-1 (organic growth) on Financial Performance as Beta value has decreased.

These results confirm the H1a, H3a, H4a and H6a hypotheses.

Analysis of Growth Strategy growth dimension, AI and innovation performance relation: Innovation performance is positively influenced by Growth Strategy dimension-1 (organic growth) (1st model Beta=0.195 $p<0.05$). Dimension 1 of growth strategy influences the mediating variables Dimension-1 (compatibility) and dimension-3 (risk and complexity) in AI (2nd model $p<0.05$). When mediator variables are included, growth strategy dimension-1 has an influence on innovation performance with a Beta=0.146 influence coefficient. Beta value has decreased, so dimension-1 and dimension-3 of AI partially mediate the influence of dimension-1 (compatibility) of growth strategies on Innovation Performance.

These results confirm the H1a, H4b, H3b, and H6b hypotheses.

Analysis of Growth Strategy internationalization dimension, AI and financial performance relation: Since $p>0.05$, growth strategy dimension 2 (internationalization) has no influence on financial performance. Consequently, it is inconvenient to apply a mediator variable influence investigation, and the corresponding model cannot be developed.

Based on these findings, the H1b, H4c, and H6c hypotheses cannot be supported.

Analysis of Growth Strategy internationalization dimension, AI and innovation performance relation: The second dimension of growth strategy (internationalization) positively influences innovation performance (Beta=0.126, $p<0.05$). The second dimension of

growth strategy (internationalization) only influences the third dimension of AI (risk and complexity) (second model $p<0.05$). Beta=0.108 was the coefficient of influence when mediator variables were included to the first model, Growth strategy dimension-2 (internationalization), and innovation performance. Beta value decreases, so dimension-3 of AI (risk and complexity) partially mediates the influence of dimension-2 of growth strategies (internationalization) on innovation performance.

These results confirm the H3b, H4d, and H6 hypotheses.

Analysis of Cost Leadership Strategy dimension, AI and financial performance relation: The strategy of cost leadership has a positive influence on financial performance (1st model Beta=0.036 $p<0.05$). Cost leadership strategy influences all dimensions of AI (Compatibility, Relative Advantage, Risk, and Complexity) through mediator variables (second model $p<0.05$) When the mediator variables are included, the coefficient of influence of cost leadership strategy on financial performance is Beta=-0.053. AI partially mediates the influence of cost leadership strategy on financial performance, as beta value has decreased.

These results confirm the H2a, H3a, H5a, and H7a hypotheses.

Analysis of Cost Leadership Strategy dimension, AI and innovation performance relation: The cost leadership strategy influences innovation performance positively (1st model Beta=0.070 $p<0.05$) All AI dimensions (Compatibility, Relative Advantage, Risk, and Complexity) are affected by the cost leadership strategy (The second model $p<0.05$). When the mediator variables are included, the cost leadership strategy has an influence on innovation performance, with a Beta=0.043 influence coefficient. AI partially mediates the influence of cost leadership strategy on innovation performance, as the beta value has decreased.

These results confirm the H2b, H5b, H3b, and H7b hypotheses.

Analysis of Differentiation Strategy dimension, AI and financial performance relation: Differentiation strategy positively influences the financial performance (Beta=0.572, $p<0.05$). Differentiation strategy has an influence on dimensions of AI with mediator variables (2nd model $p<0.05$). When mediator variables are included to the first model, differentiation strategy has a significant influence on financial performance, with a Beta=0.447 influence coefficient. AI partially mediates the influence of differentiation strategy on financial performance, as beta value has decreased.

These results confirm the H2b, H3a, H5c, and H7c hypotheses.

Analysis of Differentiation Strategy dimension, AI and innovation performance relation: Differentiation strategy influences innovation performance positively (Beta=0.732, $p<0.05$). Differentiation strategy has an influence on dimensions of AI with mediator variables (2nd model $p<0.05$). When mediator variables are included to the first model, differentiation strategy has an influence on innovation performance, with a Beta=0.658 coefficient. AI partially mediates the influence of differentiation strategy on innovation performance as beta value has decreased.

These results confirm the H2b, H3b, H5d and H7d hypotheses.

The model's Fit Indexes are displayed in Table 8.

Table 8. Fit Indexes in Total

Fit Expression	Good Fit	Acceptable Fit	Model
χ^2/df	$0 \leq \chi^2/df \leq 2$	1-5	3,02
GFI	$0,95 \leq GFI \leq 1$	$0,90 \leq GFI \leq 0,95$	0,87
CFI	$0,97 \leq CFI \leq 1$	$0,95 \leq CFI \leq 0,97$	0,89
RMR	$0 \leq RMR \leq 0,05$	$0,05 \leq RMR \leq 0,08$	0,023
RMSEA	$0 \leq RMSEA \leq 0,05$	$0,05 \leq RMSEA \leq 0,10$	0,062

χ2/sd and RMSEA, RMR values display appropriate fit. The CFI value is close to the maximum allowed.

The route is depicted in image 1.

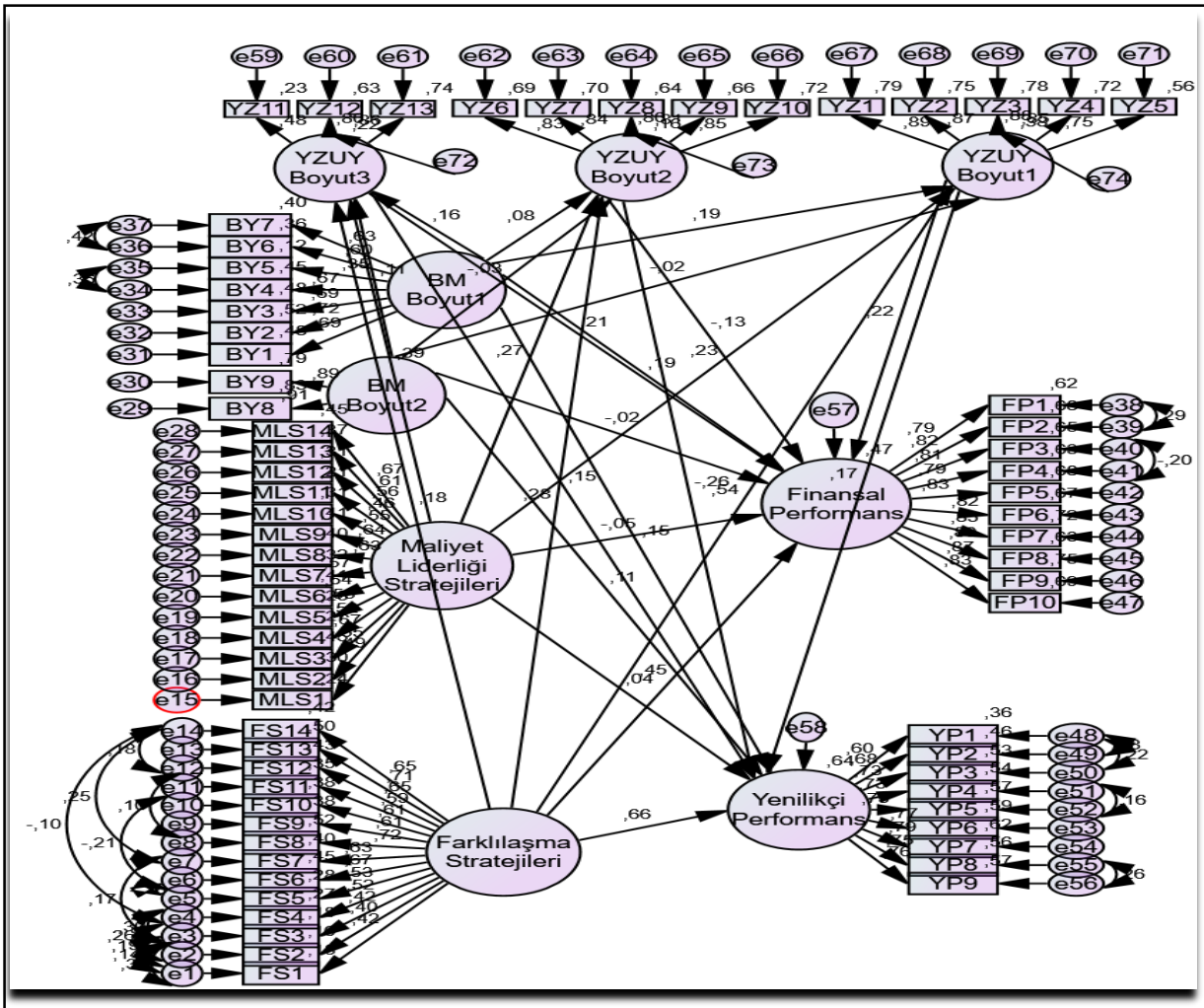

Figure 1. The Roadmap in Total

Hypotheses are summarized in Table 9.

Table 9. Hypotheses

	Hypotheses	Approve	Reject
H1a	Growth Strategy Organic Growth Dimension has an influence on Artificial Intelligence.	✓	
H1b	The Growth Strategy Internationalization Dimension has an influence on Artificial Intelligence.		x
H2a	The Cost Leadership strategy has an influence on Artificial Intelligence.	✓	
H2b	Differentiation strategy has an influence on Artificial Intelligence.	✓	
H3a	AI has an influence on financial performance.	✓	
H3b	AI has an influence on innovation performance.	✓	
H4a	Growth strategy the Organic Growth Dimension has an influence on financial performance.	✓	
H4b	Growth strategy The Organic Growth Dimension has an influence on innovation performance.	✓	
H4c	Growth strategy The Internationalization Dimension has an influence on financial performance.		x
H4d	Growth strategy The Internationalization Dimension has an influence on innovation performance.	✓	
H5a	Cost leadership strategy has an influence on financial performance.	✓	

H5b	Cost leadership strategy has an influence on innovation performance.	✓	
H5c	The differentiation strategy has an influence on financial performance.	✓	
H5d	Differentiation strategy has an influence on innovation performance.	✓	
H6a	AI has a mediator role in the influence of the Organic Growth Dimension of the growth strategy on financial performance.	✓	
H6b	AI has a mediator role in the influence of the Organic Growth Dimension of the growth strategy on innovation performance.	✓	
H6c	AI has a mediator role in the influence of the Internationalization dimension of the growth strategy on financial performance.		x
H6d	AI has a mediator role in the influence of the Internationalization dimension of the growth strategy on innovation performance.	✓	
H7a	AI has a mediator role in the influence of cost leadership strategy on financial performance.	✓	
H7b	AI has a mediator role in the influence of cost leadership strategy on innovation performance.	✓	
H7c	AI has a mediator role in the influence of differentiation strategy on financial performance.	✓	
H7d	AI has a mediator role in the influence of differentiation strategy on innovation performance.	✓	

5. Discussion

This paper explores the mediator role of artificial intelligence (AI) in the influence of corporate strategies and competitive strategies on company performance in finance, telecommunication and IT sectors in Turkey.

H1: Growth Strategy has an influence on Artificial Intelligence.

The results reveal that organic growth strategies including expansion of products and services, technology and partnership stategies are a catalyst for AI investments and business decisions. Additionally, the results reveal that internationalization strategies for growth have a limited influence and are not an effective catalyst for AI enhancements in Turkish companies due to the complexity of the AI project implementations and budgets. These outcomes also makes contributions to the literature. Addicott (2000) found in his study that the key for organizational success is matching its strengths with the best type of technology implementation model (Addicott, 2000: 1-11). Porter (1983), Zahra and Covin (1993) have the most influential studies which discuss the need for alignment between business strategy and technology, as well as how alternatives in strategy and technology should be linked and compatible (Parker, 2000: 56). Additionally, recent studies by Dederichs (2010), Al-Sukkar (2013), Makridakis (2017) and Chen (2019) reveal the connections between corporate strategies, sustainable growth plans, and perceptions of AI and technological choices (Dederichs, 2010: 1-9; Al-Sukkar, 2013: 3; Makridakis, 2017: 46-53; Chen, 2019: 1-9).

H2: Business Strategies (Competitive Strategies) have influence on Artificial Intelligence

From the compatibility, advantage, risk, and complexity perspectives, the findings reveal a moderately good association between the cost leadership strategy and all aspects of AI. Additionally, findings reveal a moderately good association between the differentiation strategy and all aspects of the AI. These findings contribute how market rivalry shapes and defines the adoption of digitalization technologies. Porter and Miller (1985) point out the importance of an organizational ability to drive industrial technical change in order to achieve a sustainable competitive advantage. Milova (2001) highlights the significance of studying industry structure in terms of competitive strategy and technological application (Milova, 2001: 9-10). Makridakis (2017) emphasizes Jankel's (2015) research to advise selecting the appropriate technologies as their competitive necessity (Makridakis, 2017: 56). Summers (2018) shows the beneficial relationship between intelligence and competitive advantage derived from business intelligence, decision-making, and organizational performance comprehension (Summers, 2018: 1-44). Al-Sukkar (2013) studies AI strategy based on cost leadership, differentiation, alliances, and diversification. Chen (2019) presents the positive influences of using artificial intelligence for management decisions and the positive relationships between artifical intelligence, organizational agility, and competitive advantage in the telecom sector (Al Sukkar et al., 2013: 3; Chen, 2019: 50-53).

H3: AI has an influence on company performance.

This investigation demonstrates a moderately positive association between AI and financial and innovation success of businesses. The crucial finding is that dimension-2 (advantage) and dimension-3 (risk and complexity) of AI have modest influences on company performance. The favorable increasing influence of technology on performance is consistent with several researches. According to Giguere (2004), the fastest-growing high-tech companies compete in markets based on their technology competence (Giguere, 2004: 32-44). Brown (1995) investigates the relation between information systems and long-term organizational performance, concluding that companies with information systems are more profitable and productive (Zhang, 1998: 24). Chen's (2019) research integrates similar perspectives and applies them to the concept of AI to change strategies in order to lead to the appropriate direction and improve performance (Chen, 2019: 50-53). On the other hand, the weak correlation between two dimensions of AI and performance demonstrates the market's uncertainty and uncertainty of the implementation of AI technology. As illustrated in the literature, these address obstacles occured due to the complexity and adoption of the technology, as well as the measuring limitations. Patil and Kulkarni (2019), Belanche et al.

(2019), and Chen (2019) concentrate on the adoption and acceptance of AI and their influences on performance in the finance and telecom sectors.

H4: Growth strategy has an influence on company *performance.*

This study demonstrates a moderately favorable correlation between growth strategies by organic growth and internationalization perspectives and company performance. Previously, Young and Selto (1991) explain that strategy affects external performance, such as stock price and market share (Kalagnanam, 1997: 26). Rumelt (1974) found out the relation between corporate strategy and financial performance (Dederichs, 2010: 12). Kalagnanam (1997) demonstrates the use of non-financial performance measures and their connection to strategy (Kalagnanam, 1997: 1-19). McCann's (1991) findings for high-tech organizations reveal that the most successful businesses prioritize innovation growth through R&D (Giguere, 2004: 45). The Giguere's (2004) research is essential for elucidating the new venture strategies related to higher growth (Giguere, 2004: 21). Ireland and Hitt (1997) focused on high-growth businesses to identify the best high-growth strategies, such as asset growth, sales growth, and profit growth (Giguere, 2004: 71).

H5: Business strategies (competitive strategies) have influence on company performance.

The findings indicate a moderately good association between cost leadership strategy, financial performance, and innovation performance. In addition, the results demonstrate a positive correlation between differentiation strategy and company performance, consistent with earlier findings in the strategy literature. The framework of Porter's strategies and their competitive dimensions provide a potentially effective research tool for identifying strategies of industry competitors (Dess and Davis, 1984: 469). Karnani (1984) and Jones and Butler (1988) analyze and demonstrate that differentiation strategy leads a higher market share and profitability for financial performance (Eraslan, 2014: 49). Yamin et al. (1999) examined the relationship between dimensions of competitive advantages and organizational performance factors of low, medium, and high-performance businesses. Their findings are congruent with earlier research demonstrating the varying performance levels of different businesses (Zehir, 2016: 54-55). Banker et al. (2014) provide support for these findings by highlighting the strong association between differentiation strategy and financial performance. Banker et al. (2014) found in their research that differentiation strategies boost long-term financial performance. According to the findings of Prajogo (2007), technology and R&D management effectiveness influence innovation success. Prajago et al. (2007); Khalili, Nejadhussein and Fazel (2013) reveal that

differentiation strategy influences innovation capability namely process innovation performance and product innovation performance of companies (Karaboğa, 2015: 27, 45-46).

H6: AI has a mediator role in the influence of growth strategy on company *performance.*

When mediator is included, the results indicate that the compatibility and complexity dimensions of AI somewhat mediate the influence of the organic growth dimension of growth strategy on both financial performance and innovation performance. These findings primarily lead to various researches in the literature. Venkatraman (1985) stated that organizations should integrate and embrace their business and technology strategies while they are relying on the fact that technology supports their business objectives (Pierce, 2002: 9). Pierce (2002) believes that there should be alignment between business strategies and IT strategies to improve organizational performance (Pierce, 2002: 7-8). Henderson and Venkatramn (1993) suggest that the strategy is the business driver to determine the technology (Kurien, 2013: 5). This study found that based on these frameworks and approaches, the strategy influences the AI projects to be implemented and structured in the organization. AI plays a mediator role as an enabler in the influence of growth strategy on competitiveness in organizations where innovation and R&D projects, partnerships and acquisitions, product diversity are implemented.

However, when the mediator variable is included, the results reveal that the complexity dimension of AI plays a partial mediator role in the influence of internationalization dimension of growth strategy on innovation performance while there is no influence on financial performance. Since expanding into foreign markets is not considered as a priority for digitilization in Turkey, the execution of internationalization-Dimension 2 strategies, which is thought to be expanding into global markets, is not recognized as a catalyst for digital transformation projects. Thus, the growth strategy and performance relation could not be used to measure the influence of AI on internationalization.

H7: AI has a partial mediator role in the influence of competitive strategies on company *performance.*

Results show that when mediator variables are included, artificial intelligence with all of its dimensions, partially mediates the influence of cost leadership strategy on financial performance and innovation performance. Furthermore, the influence of differentiation strategy on financial performance and innovation performance is also mediated by AI once more.

According to these findings, AI mediates the positive influence of competitive strategies on company performance. This result is consistent with several studies in the literature which demonstrate how technology skills, when designed in accordance with business goals to be competitive in the market, have a favorable influence on company performance. Ortega's (2008) study shows the value of technology capabilities as a mediator in the influence of cost leadership and differentiation strategies on company performance (Ortega, 2008: 1273). This supports Coombs and Bierly's (2001, 2006) claim that technological capabilities are among the most significant sources of sustainable competitive advantage. Various studies demonstrate the direct influence of technological capabilities on organizational performance including those by Acha (2000), Lee et al. (2001), Tsai (2004), Schoenecker and Swanson (2002), Etemad and Lee (2001), Afuah (2002), Zahra et al. (2007) and Vanhaverbeke et al. (2002) (Ortega, 2008: 1273).

In a market with intense competition, businesses need to formulate competitive strategies. Knowledge, creativity, and technology are now indispensable for businesses to survive in a more competitive world. This study supports the literature that in a turbulent environment, AI as a critical technical skill is a mediator in the influence of strategies on company performance.

6. Conclusion

According to the findings of the research, corporate strategies and competitive strategies have significant influences on AI and company performance. It is observed that AI has a significant influence on company performance. In addition, there is a partial mediating role of AI in the influence of corporate strategies and competitive strategies on company performance.

Nowadays, CEOs are concerned with the influences of digital technologies especially AI and maximizing their returns. As technology advances, managers try to decrease digital transformation expenditures and increase their benefits in shorter periods by achieving productivity enhancements, cost reductions etc. Previous studies reveal the positive influence of technology and AI on company performance. However, more data is required at the industry level for further researches. Finally, digital technology transformation, AI effectiveness and efficiency enable corporate strategies and business strategies to achieve better company performance in the dynamic and competitive world. Further researches should be conducted to understand how and why these investments affect performance in the competitive environmet. At this point, AI and digital transformation adoption frameworks and strategies will be critical for investigation based on industry specific requirements.

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