Contact address

Journal of Baku Engineering University
AZ0101, Khirdalan city, Hasan Aliyev str. 120, Absheron, Baku, Azerbaijan
Tel: *00 994 12 - 349 99 66/78* ***Fax:*** *00 994 12 349-99-90/91*

e-mail: *jr-eco.adm@beu.edu.az*
web: *http://journal.beu.edu.az*
facebook: *Journal Of Baku Engineering University*

Journal of
Baku Engineering
University

ECONOMICS AND
ADMINISTRATION

Baku - AZERBAIJAN

JOURNAL OF BAKU ENGINEERING UNIVERSITY
ECONOMICS AND ADMINISTRATION

2024. Volume 8, Number 1

CONTENTS

THE EFFECT OF HUMAN RESOURCES MANAGEMENT TRAINING AND DEVELOPMENT FUNCTION ON THE PERCEPTION OF CAREER DEVELOPMENT

Ahmet YILDIRIM[1], Intiqam BASHIROV[2]

[1]Suleyman Demirel University / Turkey

[2]Baku Engineering University /Azerbaijan

ARTICLE INFO	ABSTRACT
	This study aims to investigate the effect of training and development In-Service practices of the Ministry of National Education of the Republic of Turkey on teacher career development perceptions. The study examines the relationship between training and development and career development perception based on questionnaire data obtained from teacher working in the Isparta city center who participated in MoNE in-service training activities. This is a unique study as no prior research has been conducted in this context in the literature. The goal is to contribute to human resources management practices and literature by determining the effects of training and development functions on career management and career development processes. The research is descriptive. The data for this study, obtained through convenience sampling, were analyzed using a relational screening model due to quantitative research methods, and the results were compared. According to the results of the study, it was determined that training and development practices significantly predicted the perception of career development. These findings align with related studies in the literature.

1. INTRODUCTION

In today's world where change is experienced at a dizzying pace, the need for qualified human resources in organizations is increasing day by day. The continuity of organizations and businesses is possible with their adaptation to change. In this context, both private and public organizations that want to create a competitive and sustainable structure allocate more time and budget to training and development practices for their human resources. In other words, organizations try to train and develop their employees, benefit from the experiences gained by their employees and achieve high productivity for a long time (Baruch, 2004: 58).

Training and development is a continuous Human Resources Management function aimed at facilitating the adaptation of employees to new situations and increasing their decision-making and problem-solving skills. Training and development activities are an indicator of the importance given to the employee and constitute an important dimension of the investment made by enterprises in human resources. Training and development is undoubtedly one of the most important variables that facilitate the adaptation of the individuals who make up the organization to working life, increase their motivation and provide career management

expectations. To ensure the applicability of all these processes, enterprises develop policies for training and development programs and objective evaluation of their results.

The fact that the planned training and development policies have content that positively changes and improves the attitudes of the employees towards the organization increases the individual performance of the employees, facilitates organizational change and renewal, and contributes to the achievement of the targeted productivity level and profitability of the enterprises.

In today's conditions, organizations can make significant contributions to organizational performance as a result of properly planned training and development processes for their human resources (Kaptangil, 2012: 41). It has been determined in the research that the competence of the employees increases with the training and development program implemented and that they feel valued (Jaiswal & Chandra, 2014: 24-39). The fact that training and development activities, which are planned and implemented by organizational strategies and competitive conditions, support positive organizational and individual outcomes is also determined in the results of the "Great Place to Work" (2013) research conducted jointly by the German Institute and the German Ministry of Labour.

Another dimension in terms of the outcomes of training and development programs for human resources is the career management of employees. It is seen that in organizations that attach importance to opportunities and possibilities for career development and provide these opportunities to their employees through the HRM unit, positive results are obtained in the direction of increasing the performance of the employees towards work and their commitment to the organization (Sturges et al., 2005: 822).

Employees who believe that they will gain some material and moral gains from the organization with career development opportunities exhibit higher performance in their organizations. In this context, the most important factor for organizations to lose their qualified employees is that career development opportunities are either not provided at all or career opportunities are insufficient (Derven, 2015: 63). Providing career development opportunities to employees has positive reflections on the organization such as gaining qualified workforce, adapting to change more easily, having a devoted workforce and high performance (Hirsh, 2007: 4).

Training and development programs planned by human resources management within the scope of career management practices and policies increase the intrinsic motivation of the employees by providing them with the opportunity to improve themselves instilling confidence in terms of the employment opportunities of the organization and helping trained and competent employees to make the right decisions, especially in crisis environments (Vardarlıer, 2016:470). Career development processes play a decisive role in the training and development activities within the plans implemented by considering that the personnel who have recently joined the organization or who have been working for years can take higher positions in the future under certain conditions and working conditions that may occur in the future.

This study, aims to investigate the effect of Ministry of National Education training and development activities on career development perception. In this direction, the relationship between training and development and career development perception will be examined as a result of the questionnaire data obtained from the sample group consisting of teachers working in the centre of Isparta Province who have participated in MoNE in-service training activities.

There is no study conducted in this context in the literature. In this context, it is aimed to contribute to human resources management practices and literature by determining the effects of training and development functions on career management and career development processes.

In the literature, there is no study on the effect of training development on career development. Therefore, it is considered that this study will fill an important gap in the field. On the other hand, the fact that the results of this study are a predecessor of future studies emphasizes the importance of this study. In addition to the theoretical contribution to the literature, this study is expected to make a practical contribution to the career development expectations of teachers through educational development activities in educational organizations. On the other hand, it is also foreseen that the results of this study can provide important information to public organizations dealing with training and development processes. The study is descriptive research. The data of this study, which were obtained through convenience sampling technique, were analyzed with the relational screening model due to quantitative research methods and the results obtained were compared.

2. Training and Development as a function of Human Resources Management

The Training and Development function of Human Resources Management can be defined as the development of knowledge, skills and behaviour of the employee for him/her to perform the specific task or competence at the desired level (Man et al., 2023). The main purpose of training and development activities is to increase organizational effectiveness by equipping human resources with the knowledge, skills and abilities they need. Within this purpose, planning is made to respond to the needs of the organisation and the programme is implemented. The main objective of training and development activities is to ensure improvement and development. This goal can only be achieved through systematic training and development planning.

Training and development can also be defined as activities to improve the learning skills of human capital and to utilize their gains in real situation and future jobs (Noe, 2002). In this context, today's competitive conditions make it obligatory for organizations to pay more attention to the training and development of employees to acquire new skills. Training and development of human capital is an important investment tool and plays a vital role in the success, productivity and effectiveness of employees. For organizations, training and development is a strategic tool to achieve goals and objectives rather than a stage to be reached (Noe 2009). On the other hand, the effective role of training in developing the basic skills of employees provides a competitive advantage for organizations.

The training and development function promotes organizational effectiveness and ensures the personal and professional development of employees. Training and development of employees enables the acquisition of new knowledge, skills and abilities, encourages entrepreneurship, and allows employees to change their attitudes and participate in important decisions and decision-making processes (Vemie, 2007).

According to Bingöl (2016:324-325), the effectiveness of the training and development programme and its contribution to the employee is based on the opinions of the participants, by measuring the degree of learning with some tests that measure the knowledge and skills of the participants, by observing the changes in the behaviour and attitudes of the participants and by controlling the realization of the objectives of the organization by the employees. Turgut

(1977:221) stated that the evaluation of training and development effectiveness gives information about how to change and improve the behaviour of the participant, motivates the participant who is successful enough, forms the basis for decisions to be made about the participant, helps the trainer to estimate how effective his/her teaching is and provides concrete information to managers and other interested parties.

The main purpose of training and development activities is to ensure the improvement and development of employees according to their current situation (Özçelik et al., 2018:1). In this context, human resources training and development function are the activities aimed at improving the current and future performance of the employee by increasing the ability of the employee to do his/her job effectively.

Training and development in organizations is the process of providing the recruited personnel with the knowledge, skills and attitudes they need to have to perform their jobs effectively. In other words, it is the process of closing the gap between the knowledge, skills and attitudes of the employee at the beginning of the job and the knowledge, skills and attitudes they need to fulfil their specific duties and responsibilities (Barutçugil, 2004: 298).

The training and development processes of public officials are categorized into two different categories: pre-service and in-service training. Pre-service training covers the training process before active labour. In-service training, on the other hand, is all kinds of education and training activities that meet the needs of the employed labour force for adaptation to the profession, advancement and development in the profession. Therefore, it is necessary to improve the knowledge acquired by the public servant depending on the pre-service training according to the conditions of the day to be able to fulfil the duties expected from him/her when he/she starts to work actively. In this respect, in-service training is as important as pre-service training (Tortop et al., 2013: 192-194). In this period in which technology is developing rapidly, innovations in social and economic fields and therefore information are increasing, the concept of personnel management in institutions has started to be replaced by human resources management, and total quality management practices are gaining momentum, the qualifications sought in personnel are changing. In such an environment, the importance of in-service training to provide the necessary competencies to the personnel working in institutions is increasing day by day.

About the theoretical foundations of Human Resources Management Training and Development in general and in-service training in particular, theories such as goal-setting theory, expectancy theory, social learning theory and reinforcement theory can be mentioned. Goal setting theory suggests that setting job goals will increase employee motivation and performance. Research shows that specific challenging goals result in better performance than vague and nonchallenging goals. According to expectancy theory, the power motivating performance is the expectations of individuals from the future and the value they attach to them. According to the social learning theory, individuals can learn both by observing and directly experiencing. According to this theory, individuals learn many things by watching models such as family, teachers, friends, managers and people on television (Bandura, 1977). Individuals can learn by carefully watching people whom they consider reliable and knowledgeable. Social learning theory also suggests that behaviour that is reinforced or rewarded tends to be repeated (Noe, 2009: 126).

Reinforcement theory emphazises that people are motivated to perform some behaviours and avoid others based on their past outcomes. Positive reinforcement is the satisfactory

outcome resulting from the behaviour, while negative reinforcement is the elimination of the negative outcome. From an educational perspective, reinforcement theory suggests that learners can obtain knowledge, change behaviour or change skills. For this, firstly, the trainer needs to determine which outcomes the trainee finds the most positive and the most negative. The trainer then needs to establish a link between these outcomes and the knowledge, skills or changed behaviour of the learners (Noe, 2009: 125).

The Ministry of National Education in Turkey is responsible for organizing and conducting in-service training (IST) activities for teachers. These activities are designed annually with consideration of the training needs and priorities of the relevant units of the ministry (Kaya, 2017: 34).

The importance of professional training for teachers has been determined in the research on the development of the teaching profession. If teachers are well-trained professionally, they can provide positive learning conditions for their students. In this context, it can be stated that in-service training is very important for the professional development of teachers to train qualified teachers (Akbaş & Uzunöz, 2015: 191).

In public organizations, in-service training is mandatory for several reasons. Firstly, the training given to public servants before they start their service is often too general, incomplete, and insufficient to meet the demands of public service due to its complex structure. Secondly, there is an increasing need to acquire new knowledge and skills because of the changes in public service. However, the most important reason is that career expectations have become widespread in the public sector lately, and in-service training is necessary to meet these expectations (Öztürk and Sancak, 2007).

According to Schmidt (2009: 297), training and development opportunities play a crucial role in employees' career decisions. The level of education, knowledge, skills, and abilities attained by employees are essential factors that determine their career opportunities, self-realisation, salary, promotion, and development. In essence, providing employees with in-service training and allocating time for their training leads to their increased motivation, job satisfaction, and positive attitude towards the organization they work for (Şimşek et al., 2016: 270).

3. Career Development

Career development processes have become increasingly important for managing human resources and organizational functioning. Career development refers to conscious activities that contribute towards healthy adaptation of the organization to the employee's chosen path, leading to the satisfaction of their competence and self-esteem needs. It is beneficial for both the organization and the individual to have a career development program that supports social demands and addresses the specific goals and needs of the employee. Career development involves actions and activities that help people achieve their career goals throughout their working life. Organizational and individual-level expectations and thoughts are crucial in career development, ensuring both organizational effectiveness and employee job satisfaction (Barutçugil, 2004). Career development programs motivate employees by enabling them to plan their career while providing benefits to the organization, such as increasing employee satisfaction and loyalty, enriching employee skills, and enabling them to create realistic career goals and plans.

Career planning is a shared responsibility between the organization and the individual. It is a system in which both parties participate. When an individual's personal goals align with those of the organization, they tend to be more satisfied with their job. There are two types of career planning systems: individual-centered and organization-centered (İshakoğlu, 1994:39).

Career development involves planning a person's career path through education, training and work experience, ensuring that their career goals are met. This is achieved by providing employees with opportunities to change jobs both horizontally and vertically, as well as developing their interests, skills and abilities through planned training programs (Acuner, 2002).

Career development is a crucial aspect of organizational management, but it also has an individual perspective. It is a long-term process aimed at managing the careers of employees and covers their entire working life. Career development programs and activities are designed to help employees achieve their personal career plan, which in turn increases the effectiveness of human resources management within an organization. Career policies benefit both organizations and employees in achieving their goals. Providing necessary training and development programs to employees from the moment they are hired helps them orient themselves towards their goals and provides a sense of psychological satisfaction to the individual.

Organizations need to prioritize employee development and placement in key positions to adapt to change. Those that establish career planning systems and implement career policies are more likely to succeed in an uncertain future. Career development involves strategic human resources planning and should be viewed as a systematic approach to ensuring an employee's potential career growth and advancement. This process can also help individuals perceive themselves as both learners and instructors within the organization.

4. Relationship Between Training and Development Practices and Career Development

It is believed that personal development and organizational success in companies are interconnected due to the career development process. In this context, organisations encourage their employees to participate in training and development activities (Yılmaz et al.,2000: 773-774). Career development is a long-term process that aims to assist employees in managing their careers. It covers the entire working life of the employee and includes programmes and activities necessary to achieve a personal career plan. Therefore, it is closely related to career planning functions.

Career management processes are closely linked to human resources management training and development processes. The training and development function involves identifying areas and topics for employee training, creating training plans and programs, assessing the training needs of employees, and selecting individuals for training. This function provides input to the career management process and benefits from its results. The main goal of training and development management is to enhance the human resources of the organization in the context of career management processes. While the training and development function addresses the corporate training needs of human resources, professional development is carried out within the context of career management. In this regard, career management is influenced by the training and development function of human resources management, and training and development activities are considered input to career management.

In order to enhance their job performance, it is essential for employees to receive proper education and to have access to career development opportunities offered by their respective

organizations. While new recruits are usually provided with the necessary training to perform their job duties, it is equally important for long-serving employees to take advantage of the development opportunities provided by the organization. This will help them to adapt to new situations and keep up with the changing trends, which ultimately leads to their personal and organizational satisfaction.

Career development is now viewed as a means of fulfilling the needs of both employees and organizations. Whereas in the past, career development was focused mainly on meeting the needs of the organization, it is now understood that it can also prevent job burnout, provide career information to employees, improve the quality of work life, and help to achieve positive action goals. In an ever more competitive global business environment, organizations use career development as a key business strategy to ensure their survival.

Career development is the process in which organizations support their employees to progress in their professions and improve themselves. This process involves various activities that help personnel experience, conceptualize and publicly demonstrate different aspects of a career, leading to an accelerated professional status. According to Schuler and Jackson (1987:287), career development can be achieved through well-designed career development programs that identify individual needs, abilities, and goals, as well as the organization's job demands and job rewards. These programs can help match abilities with demands and rewards, highlighting the importance of the relationship between training and development.

Middlemist, Hill and Greer (1983: 73), define career development as a process of planning the range of possible jobs that can be done in an organization over time, and developing strategies that will enable the acquisition of the required job skills as opportunities arise. In summary, career development is an essential aspect of an organization's activities, aimed at helping employees progress healthily in their professions and improve their skills and capabilities.

In times of change, it's important to establish flexible organizational structures, invest in human capital development, and implement a career development system to ensure long-term survival. Employees who have access to appropriate career planning and development systems tend to be more committed to their work, productive, open to innovation, and willing to work harder to help achieve the goals of the enterprise (Sabuncuoğlu, 2007).

Training and development activities, such as seminars and courses, are essential for career development. These activities help to identify the skills and abilities of employees which can aid in their progress. Career development programmes play a crucial role in enabling individuals to continue their growth after their employment. A well-designed career development programme includes on-the-job training and development, technical skills training, and opportunities for training from staff within the organization or private consultants. Research indicates that employees are always interested in receiving more training as part of their career development (Quizon, 2014: 45-53).

Training and development activities that are well-planned can have a positive impact on both individuals and organizations (Arslan, 2012; Jaiswal & Chandra, 2014; Quizon, 2014; Nagaraju, Archana, 2015; Great Place to Work Survey, 2013). Companies strive for individual benefits such as increasing wages and productivity, diversifying promotional opportunities, creating a sense of motivation and self-confidence, and raising employee satisfaction with their

knowledge and skills through training and development activities (Şimşek & Öge, 2007: 234; Sabuncuoğlu, 2005: 128).

There is a lack of research in the literature regarding the relationship between training and development activities and career development perception. However, some studies have evaluated the relationship between the variables considered in the research and other variables. For instance, Kahraman and Fındıklı (2018) found that a positive perception towards training and development activities in terms of career management has a positive effect on employee satisfaction. On the other hand, Taşçıoğlu (2006) conducted a study on Career Development, Aksoy (2008) on the relationship between career development and lifelong, and Yazıcı (2009) on the relationship between teachers' career development, attitudes and motivation. Additionally, Aydın (2007) focused on career management, planning and development systems, while Erdoğan (2014) aimed to determine the relationships between teachers' professional orientation and career development expectations.

It is clear from the literature that training and development activities have an impact on career development processes. Based on this, we have formulated the following hypothesis and sub-hypotheses.

The following statements have been identified as hypotheses regarding the relationship between training and development activities and their effect on career development perception.

H1: Training and development activities have a positive and significant impact on career development perception.

H1a: Perceived training opportunities influence career development perception positively and significantly.

H1b: Perceived support from managers for training and development has a positive and significant effect on career development perception.

H1c: Perceived support from colleagues for training and development has a positive and significant effect on career development perception.

H1d: Motivation to learn through training and development has a positive and significant effect on career development perception.

H1e: Training and development have a positive and significant effect on the perception of career development, as well as the expected individual gains from training.

H1f: Expected career opportunities resulting from training and development have a positive and significant effect on career development perception.

5. Methodology of The Research

In this section, we will provide information on the research's purpose and model, as well as the population and sample used. Additionally, we will discuss the scales of the variables analyzed within the scope of the research.

6. Purpose and Model of the Research

The purpose of the study is to determine the impact of Human Resource Management Training and Development activities on teachers' career development perceptions. Figure 1 shows the study model created for this purpose.
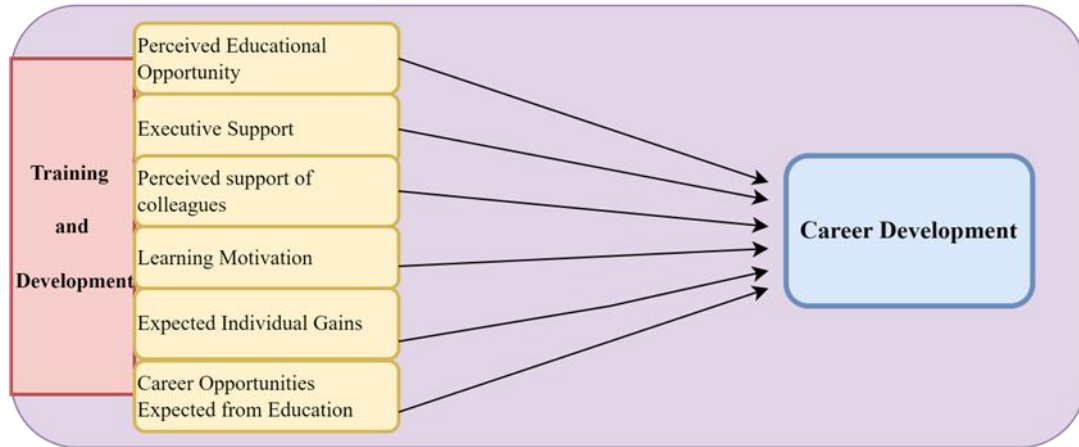
Figure 1: Research Model

The research conducted used relational design, which aligns with the main objective of the research. Correlational research determines the relationships between two or more variables. In theory-based causal models, the correlations between variables provide empirical evidence for causal relationships. For this study, the causal effects of variables on each other were determined based on the cause-effect relationships between the two variables in the model to be tested.

7. Population and Sample

The research was conducted on teachers who worked in public schools within the Isparta province during the 2023-2024 academic year and had participated in at least three in-service training activities organized by MoNE. The total population of the research was 1,941 teachers. Using the stratified sampling method, 368 teachers were selected as the research group to form the sample. According to Bryman and Cramer (2005), having a sample size of 5 times the number of items used in research is sufficient, while Nunnally (1978) suggests that a sample size of 10 times the number of subjects is enough to represent the universe for research. For scale studies, Nunnually (1978) also recommends a sample of 300 people. The Educational Development Scale used in the research consisted of 30 items and the Career Development Scale consisted of 9 items, totaling 39 items. Therefore, it can be concluded that the sample size used in this research was sufficient.

8. Data Collection Tools

As part of the research, a data collection tool was prepared in three sections. The first section is a personal information form which includes items to determine the demographic characteristics of the participants. The second part includes the Training Development Scale, which is used to measure the training development activities. The third and last part of the tool consists of statements that measure teachers' perceptions of career development.

To assess training and development activities, researchers have utilized the training and development scale developed by Kenneth R. Bartlett (2001), which has been tested for validity and reliability in several studies (Sabuncuoğlu, 2007). This scale consists of six dimensions: perceived training opportunities, perceived managerial support for training, perceived colleagues' support for training, motivation to learn in training programmes, expected individual gains from training and career expectations related to training. The scale is a 5-point Likert-type scale with a response scale ranging from 1 (strongly disagree) to 5 (strongly agree). Cronbach

Alpha formula was used for the reliability study of the scale. The first six questions in the "Career Development Scale" scale were developed by Simpson (2014), and 3 more questions were added by Kaya (2018) in the process of adaptation to Turkish and it consists of 9 questions and one dimension.

To establish the accuracy of the measurement scales used in the research, we performed 1st order confirmatory factor analysis using the AMOS 22 statistical package software. We also evaluated the reliability of the scales by analyzing internal consistency coefficients. The findings regarding the accuracy of the measurement scales are presented in Table 2.

Goodness of Fit Values of the Scales							Table 1
Variable	#	χ^2 /df	CFI	GFI	TLI	SRMR	RMSEA
Training and Development Scale	30	≤3.1	>.95	>.90	> .96	<.06	<.06
Career Development Scale	9	≤3.8	>.96	>.94	>.95	<.06	<.07
Acceptable Fit*		≤5	>.90	>.85	> .90	<.08	<.08
Good Fit *		≤3	>.97	>.90	> .95	<.05	<.05

*Joreskog ve Sörbom, (1993); Kline, (1998); Anderson ve Gerbing, (1984), Wheaton vd., (1977)

During the analysis of Validity and Reliability, the goodness of fit values of the scales were assessed. The results showed that all three scales had good fit values. The Career Development scale maintained its original single-factor structure, while the Educational Development Scale's 5-factor structure was also confirmed.

Table 2. Factor Loadings and Cronbach's Alpha Coefficients of the Scale

	Training and Development Scale	Code	Factor Load	Cronbach's Alfa
Perceived Educational Opportunities	All employees are given equal training opportunities in the organisation where I work.	M1	,545	,923
	I have information about the number and type of training I need to take in the coming period.	M2	,794	
	The policies regarding the number and type of training I will receive are determined by the organisation I work for.	M3	,817	
	There is a good learning and communication environment in the organisation where I work.	M4	,819	
Perceived Administrator Support for Training	My manager is supportive of my participation in training programs.	M5	,724	,941
	I am comfortable discussing my weaknesses with my manager.	M6	,815	
	My manager believes that making mistakes is an opportunity to learn and improve.	M7	,803	
	My manager has helped me understand how to do my job effectively in the past.	M 8	,697	
	I trust that my manager will support me in gaining the knowledge and skills outlined in the training programs.	M 9	,814	
Perceived Colleague Support for Training	I am confident that my colleagues will assist me in acquiring the knowledge and skills presented in the training programmes.	M 10	,726	,709
	I have made some great friends, all thanks to the training programs that I participated in.	M 11	,831	
	I trust that my colleagues will assist me in completing my duties.	M12	,543	
	My more experienced colleagues are hesitant to provide me with guidance	M13	,635	

	My colleagues generally view training as a waste of time.	**M14**	,718	
Learning Motivation	I try to learn as much as possible from training programmes.	**M15**	,771	**,908**
	I am eager to learn more from training programs than most people."	**M16**	,765	
	I am willing to acquire the skills that are taught in the training programmes	**M17**	,630	
	I am committed to improving my skills through training programs.	**M18**	,669	
	I believe that participating in training programs can help me improve my skills	**M19**	,695	
Expected Individual Gains	Participating in training programs is beneficial for my personal development.	**M20**	,523	**,908**
	I find that participating in training programs improves my ability to perform my job duties effectively	**M21**	,711	
	Participating in training programs helps me to gain the interest of my friends.	**M22**	,661	
	Attending training programs helps me to catch the attention of my manager.	**M23**	,770	
	Participating in training programs helps me improve my communication skills with other employees.	**M24**	,728	
	Participating in training programs helps me stay up-to-date with new processes, methods, and products related to my job.	**M25**	,762	
Career Opportunities Expected from Education	If I take part in training programs, my chances of getting promoted will increase	**M26**	,576	**,811**
	Participating in training programmes will help me get a pay rise.	**M27**	,784	
	Taking part in training programs can open up various career paths.	**M28**	,776	
	Participating in training programs helps me gain insight into my desired career path.	**M29**	,735	
	Participating in training programs is crucial for me to achieve my career goals.	**M30**	,617	
	Career Development Scale			
Career Development Scale	My company allows me to talk about my career goals regularly	**M 1**	,587	**,956**
	My company provides ideas and resources to help me achieve my career goals.	**M2**	,701	
	My company provides training and development programmes to prepare me for future opportunities	**M3**	,748	
	My company provides mentoring for my professional development.	**M4**	,821	
	My company provides "extended assignments*" for me to develop new skills.	**M5**	,682	
	It allows me to take responsibility outside my area of responsibility.	**M6**	,751	
	Career development is very important for me.	**M7**	,854	
	The definitions of the jobs I am assigned to are explained to me in a clear and precise manner.	**M8**	,864	
	There is a performance evaluation system where I can receive feedback on my performance.	**M9**	,816	

Based on the results presented in Table 2, it is observed that the factor loadings of the dimensions of the Training and Development Scale and the items of the Career Development Scale are above 0.50. Moreover, the Cronbach's alpha coefficients reported in Table 2 are higher than 0.70, which indicates that the scales used to collect research data are reliable (Hair et al., 2010: 95-104).

9. Findings

Demographic Characteristics

Demographic characteristics of the teachers participating in the study are given in Table 3.

Demographic Data of the Participants Table 3			
	Variable	Number	Percent
Gender	Female	194	52.7
	Male	174	47.3
Title	Candidate Teacher	5	1.4
	Teacher	77	20.9
	Expert Teacher	246	66.8
	Head Teacher	40	10.9
Level of Education			
	Undergraduate	305	82.9
	Master of Degree	63	17.1
Seniority Year	0-10 Yıl	54	14.7
	11-21 Yıl	159	43.2
	21+ Yıl	155	42.1
Marital Status	Married	295	80.1
	Single	45	12.2
	Divorced	28	7.6

N: 368

As seen in Table 3, 52,7% of the teachers participating in the study were female (N=194) and 47,3% were male (N=174). According to their marital status, 80.1% were married (N=295) and 12.2% were single (N=45). 43.2% of the participants have seniority between 11-21 years (N=159); 42.1% of the participants have 21+ years and above (N=55).

Descriptive Statistics and Correlation Results

Descriptive statistics and correlation findings of the variables of the study are presented in Table 4.

Mean, Standard Deviation and Correlation Values of Variables Table 4

		Mean	Standard Deviation	1	2	3	4	5	6	Career Development Scale
Training and Development Scale	1-Perceived Educational Opportunities	3,88	1,03143	1						
	2-Perceived Administrator Support for Training	3,71	,96761	,872**	1					
	3-Perceived Colleague Support for Training	3,12	,98904	,549**	,577**	1				
	4-Learning Motivation	2,36	,78280	-,010	-,022	,586**	1			
	5-Expected Individual Gains	2,69	,97658	,116	,124*	,133*	,218**	1		
	6-Career Opportunities Expected from Education	2.48	1,04271	,104*	,106*	,199**	,284**	,654**	1	
Career Development Scale		3.48	,74911	,401**	,346**	,324**	,183**	-,034	,316**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Upon analyzing the averages of the variables, it was found that the highest average of 3.88 was in the dimension of Training and Development Perceived Training Opportunities, while the lowest average of 2.36 was in Training and Development Learning Motivation. The mean of the career development scale was 3.48. Based on these findings, three dimensions measuring the Training and Development of the research participants were generally higher than the average value, while the remaining three dimensions were lower than the average value. The perception of career development is above the average value level.

Based on the Pearson Correlation values of the variables, it has been observed that perceived training opportunities (r=0.401; p<0.05), perceived manager support for training (r=0.346; p<0.05), perceived colleague support for training (r=0.324; p<0.05), learning motivation (r=0.183; p<0.05), and expected career opportunities from training (r=0.316; p<0.05) have a positive and significant relationship with career development perception. However, there was no significant relationship found between the variable of individual gains expected from education (r=-0.034; p>0.05) and career development.

To examine the impact of training and development dimensions on career development, a regression analysis was conducted based on the predictions of interactions between variables.

Findings Related to Hypothesis Test

The regression model used in the research shows a normal distribution of variables, and there is a linear relationship between them. Both dependent and independent variables are measured continuously and at equal intervals. To determine the presence of multicollinearity between independent variables, tolerance and variance effect factor values should be calculated. According to Lynch (2003:3-4), a low tolerance value and a high VIF value indicates multicollinearity. Fortunately, the tolerance values obtained in Table 5 are higher than 0.10, and the variance effect factors are lower than 10.0, which is consistent with Özgener & Iraz (2006:1362) and Kaplan & Biçkes (2013, p.238).

Regression Analysis Results for Job Satisfaction **Table 5**

Independent Variables	β	Std. Deviation	t	Significance	Tolerance	VIF	
1-Perceived Educational Opportunities	0,412	0,068	3,784	0,000**	0,234	4,271	
2-Perceived Administrator Support for Training	0,074	0,071	0,467	0,021*	0,206	4,860	
3-Perceived Colleague Support for Training	0,205	0,067	2,102	0,000**	0,296	3,377	
4-Learning Motivation	0,071	0,071	0,317	0,027*	0,424	2,358	
5-Expected Individual Gains	-,086	0,043	2.413	0,571	0,560	1,784	
6-Career Opportunities Expected from	0,116	0.096	0,237	0,000**	0,560	1,818	
							8,106
Adjusted (Adj.)R^2							0,186
$R2$							0,172
Th.Std. Deviation							0,93832
Sig.							0,000

Dependent variable: Career Development Scale / * p<0,05; **p<0,01

The regression model shows that the independent variable, which is training and development, is significantly related to the dependent variable, which is career development perception (R^2=0.0172; F=8.106; p<0.05). In other words, training and development activities explain 17.2% of career development perception. The interrelationships between the different factors that affect career development perception were analyzed, including the perceived training opportunities, perceived manager support for training, perceived colleague support for training, motivation to learn, expected individual gains from training, and expected career opportunities from training. The R^2 value of 0.172 is significant at the 0.05 level, indicating that the independent variables explain 17.2% of the variance in career development perception.

Moreover, the most influential variables in explaining the variance in career development perception are perceived educational opportunities (β=0.412; p=0.000), perceived managerial support for education (β=0.074; p=0.021), perceived colleagues' support for education (β=0.205; p=0.000), learning motivation (β=0.074; p=0.027), and expected career opportunities from education (β=0.116; p=0.000).

Based on our findings, an increase of 1 point in perceived training opportunities for training and development leads to a 0.412-point increase in career development of the participants. Additionally, perceived manager support for training and development increases by 0.074 points, perceived colleagues' support for training and development increases by 0.205 points, motivation to learn for training and development increases by 0.074 points, and expected career opportunities from training and development increases by 0.116 points.

Our correlation and regression analyses indicate that Hypothesis 1, Hypothesis 1a, Hypothesis 1b, Hypothesis 1c, Hypothesis 1d, and Hypothesis 1f are accepted, while Hypothesis H1e is rejected.

10. Conclusion

In today's competitive business world, organisations need to continuously improve themselves in order to achieve their goals. Effective management of human resources is crucial at this point, and one of the key functions of human resources management is training and development.

Training and development refer to a range of activities that aim to increase the knowledge, skills, and abilities of employees in an organisation. These activities include career development and educational events that help employees to develop problem-solving, decision-making, and adaptation skills, and to understand organisational policies and processes. Training and development activities are closely linked to career development processes. In other words, employees who receive training and development opportunities are more likely to advance their careers within the organisation.

Career management has a significant impact on human resources management, and the importance of career planning and development has emerged as a crucial factor for organizations to survive and thrive in a highly competitive environment. Career development involves planning an individual's career through various means such as training, work experience, and ensuring that their career goals are achieved. This is accomplished by providing employees with opportunities to grow horizontally and vertically, and by developing their skills and interests through planned training programs. The implementation of career development practices is a result of career planning, and it includes activities such as job performance

evaluations, job change plans, and training programs. Career development is essential for building an individual's skills and abilities, and it involves a range of activities such as skill development, performance evaluation, job rotation planning, job evaluation, and training programs.

Based on research findings, it has been discovered that training and development practices have a significant impact on an employee's perception of career development. The planned training and development practices are responsible for 17.2% of the direction of employees' career development. Many researchers have emphasized the importance of training and development practices in improving employee competencies (Chen et al., 2007; Swanson, 1995; Youndt & Snell, 2004). It is argued that employees who participate in these practices apply newly acquired skills, knowledge, and attitudes in their daily work, resulting in better job performance (Bartlett, 2001; Clardy, 2008). Cooke et al. (2000) highlighted the potential of training to improve employee knowledge and skills, while Swanson and Holton (2009) emphasized that training and development practices improve employee competence and increase organizational effectiveness. Therefore, training and development practices can be considered a precursor to career development. These research findings align with the results of related studies in the literature.

Organizations today need to focus on developing training and development programs that help their employees acquire specific skills for career development. To meet business needs and overcome challenges, the role of training and development should evolve to emphasize career development steps. Policymakers should plan the content of in-service training programs, especially in public administration, with a view to developing employees' careers.

However, it's important to note that the research conducted in Isparta was limited to a specific period and location, which limits the generalization of the research results. To contribute to the generalizability of the data, future studies should involve more participants and make comparisons to obtain new and more comprehensive findings.

REFERENCES LIST

Acuner, T. (2002). İşletmelerde Yönetime Katılma Aracı Olarak Öneri Sistemlerinin Önemi. Öneri Dergisi, 5(18), 87-93.

Akbas, Y., Uzunöz, A., & Gençtürk, E. (2010). High school 9th grade students' understanding level of conceptions related to atmosphere and misconceptions. Procedia-Social and Behavioral Sciences, 9, 1699-1704.

Akman, G., Özkan, C. ve Eriş, H. (2008). The Analysis of The Effect of The Firm Performance by Using Strategic Focusing and The Firm Strategy. İstanbul Ticaret Üniversitesi Fen Bilimleri Dergisi, 7 (13), 93-115.

Aksoy, M. (2008). Hayat boyu öğrenme ve kariyer rehberliği ilkelerinin istihdam edilebilirliği etkileri otel işletmeleri üzerine bir uygulama. Yayınlanmış Doktora tezi. Ankara: Gazi Üniversitesi.

Ameeq, A. and Hanif, F. (2013) Impact of Training on Employee's Development and Performance in Hotel Industry of Lahore, Pakistan, Journal of Business Studies Quarterly. 4(4)68-82

Anderson, J. C., & Gerbing, D. W. (1984). The effect of Sampling Error On Convergence, Improper Solutions, And Goodness-Of-Fit Indices For Maximum Likelihood Confirmatory Factor Analysis. Psychometrika, 49(2), 155–173

Arslan, G. (2012). İnsan Kaynakları Yönetiminde İşe Alma ve Eğitimin Kariyer Yönetimi ile İlişkisi, Bir Şirketin Kariyer Yönetimi Üzerine İnceleme. Yüksek Lisans Tezi. İstanbul: Beykent Üniversitesi Sosyal Bilimler Enstitüsü.

Aryee, S. ve Chen, Z. X. (2006). Leader-member exchange in a Chinese context: antecedents, the mediating role of psychological empowerment and outcomes. Journal of Business Research, 59 (7), 793-801

Bandura, A. (1977). Social learning theory. Englewood Cliffs, NJ: Prentice-hall

Bartlett, R. K. (1999). The relationship between training and organizational commitment in the health care field. Urbana: The University of Illinois.

Bartlett, R., K. (2001). "The Relationship Between Training and Organizational Commitment: A Study in the Health Care Field", Human Resource Development Quarterly, Cilt:12, Sayı:4, John Wiley & Sons., s. 339-344.

Baruch, Y. (2004). Transforming careers: From linear to multidirectional career paths: Organizational and individual perspectives. Career Development International, 9(1), 58-73.

Barutçugil, İ. (2004) "Stratejik İnsan Kaynakları Yönetimi", Kariyer Yayınları, İstanbul

Bingöl, D. (2016). İnsan Kaynakları Yönetimi. İstanbul: Beta Basım Yayım Dağıtım A.Ş.

Bryman, A., and Cramer, D. (2005). Quantitative Data Analysis with SPSS 12 and 13. A Guide for Social Scientists, New York, Routledge. Taylor & Francis Group.

Chen, G., Kirkman, B. L., Kanfer, R., Allen, D. ve Rosen, B. (2007). A multilevel study of leadership, empowerment, and performance in teams. Journal of Applied Psychology, 92 (2), 331-346.

Clardy, A. (2008). The strategic role of Human Resource Development in managing core competencies. Human Resource Development International, 11(2), 183-197. https://doi.org/10.1080/13678860801932998

Cooke, N. J., Salas, E., Cannon-Bowers, J. A., & Stout, R. J. (2000). Measuring Team Knowledge. Human Factors: The Journal of the Human Factors and Ergonomics Society, 42(1), 151-173. https://doi.org/10.1518/001872000779656561 development.html dimensions of diversity and satisfaction with job training. Human Resource Development

Derven, M. (2015). From Career Conversations to Deliberate Action: Manager-Employee Career Discussions Are the First Step toward an All-Encompassing Organizational Career Development Program. TD Magazine, V. 69, I. 2, 62-67.

Erdoğan, D. (2014) Öğretmen adaylarının yaşam boyu öğrenme eğilimlerine etki eden faktörler. Yayınlanmamış doktora tezi. Abant İzzet Baysal Üniversitesi

Erdöl C., Kariyer Planlama Sistemi, Kariyer Yönetimi, Kariyer Geliştirme, Kariyer Sorunları ve Koçluk Uygulamaları, Gebze İleri teknoloji Enstitüsü, Sosyal Bilimler Enstitüsü, Yüksek Lisans Tezi, Gebze 2000

Fraenkel, J. R., & Wallen, N. E. (2011). How to design and evaluate research in education (7th ed.). Boston: McGraw-Hill.

Great Place to Work Araştırması. (2013).

http://www.greatplacetowork.com.tr/storage/documents/Kaiyer_10.Kat_18_Kasm_2013__HD_.pdf (Erişim tarihi: 17 Şubat 2018)

Hair, J. F. J., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). Multivariate Data Analysis Seventh Edition Prentice Hall

Hirsh, W. (2007). Workforce Development Conference, held by CEDEFOP in Thessaloniki.

Inc. (2019, 19 Eylül). Training and Development Erişim adresi: https://www.inc.com/encyclopedia/ trainingand-International, 12(3), 297-312.

İshakoğlu Gülem (1994). Kariyerde Plato. Yayımlanmamış Doktora Tezi, İstanbul: İstanbul Üniversitesi Sosyal Bilimler Enstitüsü.

Jaiswal, P. ve A. Chandra (2014). "Employee Satisfaction Towards Training And Development Practices In Bharat Pumps And Compressor Limited Naini Allahabad", Ms Pooja Jaiswal Research Scholar. Sam Higginbottom Institute Of Agriculture Technology And Sciences (Shıats) Allahabad. Irjmst, 5(10), 25-39.

Jöreskog, K. G. & Sörbom, D. (1993). Lisrel 8: Structural Equation Modeling with the Simplis Command Language. Lincolnwood: Scientific Software International, Inc.

Kahraman, HB ve Afacan Fındıklı, MM (2018). Kariyer Yönetimi Kapsamında Eğitim Ve Geliştirme Faaliyetlerine Yönelik Algıların Çalışan Memnuniyeti Üzerindeki Etkileri. Beykent Üniversitesi Sosyal Bilimler Dergisi, 11(2), 51-68. https://doi.org/10.18221/bujss.397054

Kaplan, M. ve Biçkes, D.M. (2013). The Relationship Between Psychological Capital and Job Satisfaction: A Study of Hotel Businesses in Nevşehir. Yönetim ve Ekonomi, 20(2), 233-242.

Kaptangil, K. (2012). İşletmelerde İnsan Kaynakları Eğitiminin Çalışanların Performansları Üzerine Olan Etkileri, Çankırı Karatekin Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 2(2), 25-44

Kaya, A.(2018). Kariyer Gelişim Sürecinin Örgütsel Bağlılık Ve İşten Ayrılma Niyeti Üzerine Etkisinin Yapısal Eşitlik Modellemesi İle Test Edilmesi, (Yayınlamamış Doktora Tezi, Hiti Üniversitesi)

Kline, R. B. (1998). Principals and Practice of Structural Equation Modeling. New York. The Guilford Press.

Kum, F.D., Cowden, R. and Karodia. A. M. (2014) The Impact of Training and Development on Employee Performance: A Case Study of ESCON CONSULTING. Singaporean Journal of Business Economics and Management studies 3(3): 72-105

Liden, R.C., Wayne, S. J. and Sparrowe, R.T. (2000). An Examination of the Mediating Role of Psychological Empowerment

on the Relations Between the Job, Interpersonal Relationships, and Work Outcomes. Journal of Applied Psychology,85(3), 407-416.

Man, F., Yılmaz, C. ve Kurutkan, M.N. (2023). İnsan kaynakları yönetiminde eğitim ve geliştirme alanının bibliyometrik analizi. International Journal of Social Sciences and Education Research, 9(1), 15-35. doi:10.24289/ijsser.1170762

Mansfield, R. S. (1996). Building competency models: Approaches for HR professionals. Human Resource Management, 35(1), 7-18.

McMillan, J. H., & Schumacher, S. (2006). Research in education: Evidence based inquiry. Boston: Brown and Company

Middlemist, R. D., Hitt, M. A., & Greer, C. R. (1983). Personnel Management: Jobs, People, and Logic. Prentice Hall.

 Nadeak, B. and Purba, J. T. (2014). Applied Management Strategy on Human Capital in Higher Education for

Nagaraju, B. ve M. Archana. (Apr. 2015). Job Satisfaction Through Training and Development Programmes- A Case Study at J.K. Tyre Ltd, Mysore, Commerce University of Mysore Manasagangotri, IOSR Journal of Business and Management 17 (4), 05-13

Noe, A.R. (1999). İnsan kaynaklarının eğitim ve gelişimi. (çev. Çetin, Canan), İstanbul:Beta Yayınları.

Nunnally, J.C. (1978). Psychometric theory. NewYork: McGraw-Hill Companies.

Oguntimehin, A. (2001) Teacher Effectiveness: Some Practical Strategies for Sucessful Implementation of Universal Basic Education in Nigeria. African Journal of Educational Management 9 (1)151-161.

Onyango, W.J., . Wanyoike, D.M. (2016). "Effects of Traınıng on Employee Performance: a Survey of Health workers ın Sıaya County, Kenya", European Journal of Environmental Sciences Vol.1, No.1, pp.11-15

Özçelik, A. O., Sadullah, Ö. ve Uyarlıgil C. (2018). İnsan Kaynakları Yönetimi. İstanbul: Beta Yayınları.

Özgener, Ş. ve Iraz, R. (2006). Customer Relationship Management in Small-Medium Enterprises: The Case of Turkish Tourism Industry. Tourism Management, 27, 1356- 1363.

Öztürk, M., & Sancak, S. (2007). Hizmet içi eğitim uygulamalarinin çalişma hayatina etkileri. Yaşar Üniversitesi E-Dergisi, 2(7), 761-794.

Quizon, Z. S. (2014). Employees' Satisfaction On Training & Development Of Atlantic, Gulf, & Pacific Company Of Manila, Inc.,.Lyceum Of The Philippines University. Asia Pacific Journal Of Multidisciplinary Research, 2(3), 45-53

Sabuncuoğlu, E., T. ; (2007), "Eğitim, Örgütsel Bağlılık ve İşten Ayrılma Niyeti Arasındaki İlişkilerin İncelenmesi", Ege Akademik Bakış, Cilt: 7, Sayı: 2, s. 621-636.

Schmidt, S. W. (2009). Employee demographics and job training satisfaction: the relationship between

Schuler, R. S., & Jackson, S. E. (1987). Linking competitive strategies with human resource management practices. Academy of Management Perspectives, 1(3), 207-219.

Simpson, Michael J. 2014, The Relationship Between Provision Of Career Development Services and Employee Turnover, Dekalb, Illiniois: Northern Illinois University, A Doctoral Dissertation

Spreitzer, G.M. (1995). Psychological empowerment in the workplace: Construct definition, measurement, and validation. Academy of Management Journal, 38(5), 1442-1465.

Sturges J., Conway N, Guest D, Lıefooghe A., "Managing The Career Deal: The Psychological Contract As A Framework For Understanding Career Management Organizational Commitment And Work Behavior", Journal of Organizational Behavior J. Organizational Behaviour,Vol: 26, 821–838. 2005.

Swanson, R. A. (1995). Human resource development: Performance is the key. Human Resource Development Quarterly, 6(2), 207-213. https://doi.org/10.1002/hrdq.3920060208

Swanson, R. A., & Holton, E. F. (2009). Foundations of Human Resource Development. Berrett-Koehler Publishers.

Şimşek, M., Çelik, A. ve Akatay, A. (2016). İnsan kaynakları yönetimi ve kariyer uygulamaları, Eğitim Yayınevi.

Şimşek, Ş. ve M. S. Öge (2007). Stratejik ve Uluslararası Boyutları ile İnsan Kaynakları Yönetimi, İstanbul: Gazi Kitabevi

Taşcıoğlu, C. (2006). Eğitim sektöründe kariyer yönetimi uygulamalarının örgütsel performans üzerindeki etkileri: teori ve bir araştırma. Yüksek Lisans Tezi. Selçuk Üniversitesi. Konya.

Thomas, K. W. ve Tymon, W. G. (1994). Does empowerment always work: Understanding the role of intrinsic motivation and personal interpretation. Journal of Management Systems, 6(2), 1-13.

Tortop, Nuri, v.d. (2010), Yönetim Bilimi, Nobel Yayıncılık, Ankara.

Turgut, M. F. (1977). Eğitimde Ölçme ve Değerlendirme Metotları. Ankara: Nüve Matbaası

Vardarlıer, P. (2016). Kriz Sırasında İnsan Kaynakları Yönetimine Stratejik Yaklaşım, Procedia - Sosyal ve Davranış

Bilimleri 235, 463 – 472. Yılmazer, A. (2010). Meslek Yüksekokulları için İnsan Kaynakları Yönetimi, çeşitleri ve güncelleştirilmiş 2. Baskı. Ankara: Seçkin Yayıncılık.

Vemie, J. (2007). Employee training and development and the learning organization. Economics and Organization, 4(2), 209-216. Erişim adresi: http://facta.junis.ni.ac.rs/eao/eao200702/eao200702-13.pdf

Wheaton, B., Muthen, B., Alwin, D. F., & Summers, G. F. (1977). Assessing reliability and stability in panel models. Sociological Methodology, 8, 84-136.

Yazıcı, H. (2009). Öğretmenlik mesleği, motivasyon kaynakları ve temel tutumlar: kuramsal bir bakış. Kastamonu Eğitim Dergisi, 17(1), s. 33-46.

Yılmaz C.Vd., Örgütsel Başarım İle Kariyer Geliştirme İlişkisi, 8. Ulusal Yönetim ve Organizasyon Kongresi Bildiriler, 2000, Nevşehir

Younas, W., Farooq, M., Halil-Ur-Rehman, F. ve Zreen, A. (2018). The Impact of Training and Development on Employee Performance. IOSR Journal of Business and Managament, 20 (7) , 20-23.

Youndt, M. A., & Snell, S. A. (2004). Human resource configurations, intellectual capital, and organizational performance. Journal of managerial issues, 337-360.

Zafer, Ü.(2012). The impact of years of teaching experience on the classroom management approaches of elementary school teachers. International journal of Instruction, 5(2).

SWOT ANALYSIS FOR THE CATTLE FARMING BUSSINES: A RESEARCH IN THE CITY CENTER OF BURDUR PROVINCE, MASTER'S THESIS [1]

Derya GÜVEN[2], Kürşat ÖZDAŞLI[3]

(*GÜVEN, Derya, SWOT Analysis For The Cattle Farming Bussines:
A Research In The City Center Of Burdur Province, Master's Thesis, Burdur, 2024*)

ARTICLE INFO	ABSTRACT
	In this study, it is aimed to contribute to the literature by making strategic analyzes of cattle breeding enterprises in Burdur province. It is regional research. Due to the limitation of time and transportation, only a part of the enterprises in Burdur were included in the study. For this purpose, research was conducted on 30 cattle breeding enterprises in Burdur province using semi-structured oral interview technique. At the beginning of the study, information and addresses of the enterprises were obtained from Burdur Provincial Directorate of Agriculture and Forestry. In this way, the sample collection process of the research was realized in a shorter time. The owners of the identified enterprises were previously spoken to and a date was set for the interview. *With the research conducted, it was aimed to determine the strengths and weaknesses of livestock enterprises and the opportunities and threats to the enterprises. In this direction, SWOT analysis technique was used. The data obtained according to the SWOT analysis findings were tabulated on the SWOT matrix. The strengths, weaknesses, opportunities and threats of the cattle breeding enterprises of Burdur province were written as items and the number of repetitions was graded on the table. According to the number of repetitions on the SWOT matrix in the conclusion section, the strengths in cattle breeding are mainly that the enterprises produce their own roughage.* *The most common weaknesses are inadequate technology, lack of equipment and high labor force. Most of the opportunities are listed as incentives and supports provided by ministries. The biggest threats are high input costs and inflation-price instability. Although this research represents only 30 enterprises in Burdur province, it has contributed to identifying common problems and advantages affecting the city and the country in general. As a result, although this study is regional research, it is important for cattle breeding throughout the country.*

INTRODUCTION

Livestock breeding, which is one of the oldest activities of humanity, is, in general terms, the activity of raising domestic animals and obtaining certain benefits from these animals (Doğanay, 2021). In Turkey, the livestock sector has a very important place in the economy and agriculture sectors.

---

[1] This study is derived from Derya Güven's master's thesis entitled "SWOT Analysis For The Cattle Farming Bussines: A Research In The City Center Of Burdur Province" which is produced from her master's thesis.

[2] Burdur Mehmet Akif Ersoy University, Institute of Social Sciences, Department of Business Administration,

[3] Burdur Mehmet Akif Ersoy University, Faculty Member, Department of Business Administration, kozdasli@mehmetakif.edu.tr, https://orcid.org/0000-0002-4604-7387

In order to determine this situation in which cattle breeding enterprises are in and the positions they appear from the outside, they need to resort to strategic analysis. Many different methods can be used in the progress of these strategic analyses, and the SWOT analysis method is one of these methods. SWOT analysis is a frequently used tool that contributes to finding the existing strengths and weaknesses of businesses, organizations, organizations or business activities, identifying situations that may be threats to businesses and understanding the opportunities that will facilitate the progress of businesses in the sector (Downey, 2007). It is seen that there are many different studies using SWOT analysis in strategic methods for different areas in the livestock sector.

In this context, the concepts of strategic analysis, SWOT analysis and animal husbandry will be discussed through a literature review.

In this study, strategic analysis of cattle breeding enterprises in Burdur province has been made and it is aimed to contribute to the literature. In this context, research will be conducted on 30 livestock enterprises selected by convenience sampling method in Burdur province and SWOT analysis technique will be used to determine the opportunities and threats affecting livestock enterprises and to reveal the current strengths and weaknesses of the enterprises.

LITERATURE REVIEW

STRATEGIC MANAGEMENT AND SWOT ANALYSIS

In this section, the concepts of strategy and SWOT analysis will be explained. The basic features of strategy, strategic approach methods, and its importance in organizations and businesses will be mentioned.

DEFINITION AND BASIC CONCEPTS OF STRATEGIC MANAGEMENT

The word strategy has been introduced into the literature of business administration and other existing sciences from military literature. In military literature, the word strategy is explained as the art of planning and managing the movements and attacks that the army will undertake in any war.

As the meaning of the word in the dictionary, it is also explained as a set of alternative paths followed and methods designed to be applied in order to achieve a goal. The concept of strategy can also be reminiscent of the game of chess. We never take action with a single plan and move, we always need to calculate in advance what we need to do in the next steps (Ülgen & Mirze, 2004).

Strategy can be associated with certain concepts. One of these is policy. The concept of policy can be defined as a way of thinking, a guide concept that guides the decisions to be made by the employees and the activities to be carried out during the implementation of the strategies determined to achieve the desired goals of the enterprises. Policies undertake the task of guiding managers for the selected strategies (Dinçer, 2004).

The analysis of the environment, which is done by collecting data in order to make the most appropriate choices for the strategy, is the study of the conditions in the internal and external environment of organizations or companies and the multifaceted factors in these environments to determine the contribution or hindrance they can make to achieve the goals. Factors in the strategic external environment such as the economic system, competitors and competition, buyers, population movements, social and political situation, policy risk, financial resources and

technology transfer are examined in terms of the opportunities and dangers they expect for the firm. Internal environment analysis is the careful examination of the basic facts within the organization while identifying the strengths and weaknesses of the firms (Alpkan, 2000).

SWOT ANALYSIS

The word SWOT analysis consists of the initials of the English words Strenghts (S), Weakness (W), Opportunities (O), Threats (T). It is used to determine the situations in which businesses are strong and superior, weak and weak; to evaluate and determine the opportunities that the business has and the threats and dangers that may arise (Ülgen and Mirze, 2007:67).

SWOT Analysis allows organizations and projects to focus on and build on their strengths and improve their weaknesses. It also provides a guide to discovering opportunities and using them to achieve success. In turn, identifying threats and taking appropriate measures helps organizations and projects reduce their risks (Çelik, 2019).

SWOT Analysis technique is an analysis method used to determine the strengths and weaknesses of an organization's internal structure as well as the opportunities and threats in its environment. To put it briefly, SWOT Analysis, as an important element of strategic management, enables the evaluation of both internal and external conditions of the organization (Rostami, 2015; Tabak, 2003).

As stated in the preceding paragraph, SWOT Analysis technique is a preferred analysis technique when identifying the positive and negative aspects that can occur in the internal structure of an organization or an organization, as well as identifying opportunities and threats that occur outside the organization. Therefore, SWOT Analysis can also be used as a current situation analysis. But SWOT Analysis is also an analysis technique that can be used to predict the future state of the organization or entity. Therefore, SWOT Analysis can also be used as a future situation analysis (Ağaoğlu et al., 2006).

LIVESTOCK

In today's world, the rapid advancement of technology and technological changes affecting economic development play an important role in the livestock sector. Agriculture and livestock sectors are also in a strategic position in economic terms. In particular, indicators such as access to animal products and consumption habits are accepted as an indicator of the level of development. Therefore, the livestock sector is an important sector with indicators such as the share of animal products in the diet.

Since Turkey's geographical structure and climatic conditions are suitable for cattle breeding, this sector is widespread in almost every region of the country. However, as large areas of land are needed for the care and feeding of such animals, these activities are usually concentrated in rural areas, villages and towns. Therefore, cattle breeding is a major source of livelihood, especially for people living in developing regions, and the economic importance of this sector is quite high. In addition, the fact that people in rural areas are engaged in animal husbandry activities also contributes to reducing the intensity of migration movements within the country and solving the problems that arise accordingly (Güven, 2018).

Livestock breeding has become an industrial sector in countries that are advanced in terms of industry, technology, etc. and has become a building block for the economy. Therefore, it is strategically important to advance agriculture and especially animal husbandry throughout the

country. However, in Turkey, animal husbandry is not yet sufficiently perceived as a commercial activity. Moreover, traditional agricultural culture is based primarily on crop-based production. This is reinforced by the fact that livestock farming is not given due importance in general agricultural policies. However, the livestock sector will continue to play an important role in the country's economy and human nutrition in the future and will continue to increase its potential. Turkey needs to better analyze the livestock sector and ensure its sustainability. In addition, it is of great importance to develop policies that can increase international competitiveness in the increasingly liberalized world agricultural trade (Saçlı, 2007).

Turkey needs to take steps in the livestock sector, especially in recent years. Problems in the sector need to be addressed, agricultural policies need to be reviewed and new investments need to be made. In addition, the use of modern animal husbandry technologies and a more sensitive approach to animal welfare will also contribute positively to the development of the sector. Thanks to these steps, Turkey will grow further in the livestock sector and will have a stronger economic and social position in this field (Berksan, 1995).

The fact that Burdur has a Mediterranean climate type due to its geographical location enables animal breeders to use the animal food they produce themselves. In this way, animal breeders do not need to store bales, straw and silage for the winter and production costs are reduced. However, the drying up of Lake Burdur, which has been on the agenda in recent years, is said to bring climatic changes to the surrounding villages and Burdur and may affect agricultural production in the future.

METHODOLOGY OF THE RESEARCH

The purpose, sample, method and findings of the study are as follows.

PURPOSE AND IMPORTANCE OF THE RESEARCH

In today's conditions in Turkey, there are very rapid changes and transformations in almost every field. Livestock enterprises, which are under the influence of these changes, have to keep up with the developing technology and changes. In this context, business employees and owners have great responsibilities. In this process, businesses may encounter various negativities. These negativities also affect employee and business productivity. The aim of this study is to reveal the weaknesses of cattle breeding enterprises in the province of Burdur, to help them find out how to strengthen these aspects and to show how they can turn the elements that threaten their enterprises into opportunities with the opportunities at hand.

LIMITATIONS OF THE RESEARCH

This study is limited to cattle breeding enterprises located in the central district and central villages of Burdur province. A total of 30 different cattle breeding enterprise owners selected by convenience sampling method were interviewed. In order to comply with the purpose of the study and for the efficiency of the study, the interviews with the business owners in the same region and the prepared semi-structured questions are limited to the interview records. Since it is a qualitative study, a generalization cannot be made throughout Burdur and Turkey.

PARTICIPANTS OF THE RESEARCH

The participants interviewed for the research were provided with the necessary information for the research and signed a consent form. On March 15, 2023, fieldwork was initiated and completed on June 20, 2023. A total of 30 business owners participated in the research.

POPULATION AND SAMPLE OF THE RESEARCH

The population of the research consists of cattle breeding enterprises operating in the central district and central villages of Burdur province. There are 16 thousand active livestock enterprises in the city. With the convenience sampling method, 30 different cattle breeding business owners were interviewed. 30 interviews with 30 businesses were sufficient due to the repetition of the answers. In order to comply with the purpose of the study and for the efficiency of the study, the interviews with the business owners in the same region and the prepared semi-structured questions are limited to the interview records. Since it is a qualitative study, a generalization cannot be made throughout Burdur and Turkey. In total, 30 semi-structured oral interview forms were used and all of these forms were submitted for analysis. Business owners were interviewed in advance and the forms were filled in with their consent.

Table 1. Demographic Information of Participants

ORDER	GENDER	MERİTAL STATUS	AGE	EDUCATİONAL BACKGROUND	ANİMAL CAPACİTY	YEAR OF ESTABLİS-HMENT	NUMBER OF EMPLOYEES	BUSİNESS TYPE
P1	Male	Married	35	Primary School	20	2001	2	Dairy Farm
P2	Male	Single	21	High School	15	2018	3	Fattennig Farm
P3	Male	Married	28	Middle School	70	2018	3	Fattennig Farm
P4	Male	Sıngle	26	University	30	2019	1	Dairy Farm
P5	Male	Married	39	High School	80	2000	3	Dairy Farm
P6	Male	Married	37	High School	42	2007	2	Dairy Farm
P7	Male	Married	40	High School	30	2010	2	Dairy-Fattennig Farm
P8	Male	Married	33	High School	62	2014	4	Dairy-Fattennig Farm
P9	Male	Married	53	Primary School	30	2009	2	Dairy Farm
P10	Male	Married	43	University	90	2019	3	Dairy Farm
P11	Female	Married	32	Primary School	27	2013	2	Dairy-Fattennig Farm
P12	Male	Married	40	Middle School	32	2006	2	Dairy-Fattennig Farm
P13	Male	Married	35	High School	25	2010	2	Dairy Farm
P14	Male	Single	29	High School	40	2016	2	Dairy Farm
P15	Male	Married	41	High School	55	2010	2	Fattennig Farm
P16	Female	Married	47	Middle School	70	2005	2	Dairy Farm
P17	Male	Married	54	High School	57	2004	3	Fattennig Farm
P18	Male	Married	38	Middle School	30	2011	2	Dairy Farm
P19	Male	Married	59	Middle School	37	1997	4	Fattennig Farm
P20	Male	Single	26	University	10	2014	1	Dairy-Fattennig Farm
P21	Female	Married	28	High School	22	2015	2	Fattennig Farm
P22	Male	Married	33	High School	23	2010	4	Dairy Farm
P23	Female	Married	30	High School	12	2005	4	Dairy Farm

P24	Male	Married	42	High School	25	2015	2	Dairy-Fattennig Farm
P25	Male	Married	42	University	120	2015	1	Dairy Farm
P26	Female	Single	40	Degree	10	2020	1	Fattennig Farm
P27	Male	Married	35	Middle School	50	2010	3	Dairy-Fattennig Farm
P28	Male	Single	29	University	30	2010	2	Dairy-Fattennig Farm
P29	Male	Married	24	University	20	2000	2	Dairy Farm
P30	Male	Married	43	Primary School	35	2010	2	Dairy-Fattennig Farm

As indicated in the table above, 5 of the participants are female and 25 are male. 6 participants were single and 24 were married. 4 of the participants are primary school graduates, 6 are middle school graduates, 13 are high school graduates and 7 are university graduates. The one who has been in this business for the longest time has been in the livestock sector for 27 years and the newest one for 4 years.

DATA COLLECTION AND ANALYSIS

The data of the study were collected through interview technique. A semi-structured interview form consisting of open-ended questions was prepared by the researcher. Before starting the interviews, help was obtained from Burdur Provincial Directorate of Food and Agriculture. After the participant list was determined, the researcher met with the participants and set a day and time for the interviews. During the interviews, the scope and purpose of this study were explained to the participant in detail by the researcher and the questions in the interview form were clearly explained. This made the study more productive. At the end of the interview, the researcher informed the participants that their names would not be used.

FINDINGS

In this study, 30 cattle enterprises operating in Burdur province, selected by convenience sampling method, were visited and a semi-structured oral interview technique was used. As a result of the research, the threat factors that mainly affect the enterprises were identified; this small-scale research wanted to address the problems of the country in general. It has been determined that the biggest threat affecting the enterprises and the weakest aspects of the enterprises in this context is the economic situation in general. Variable interest rates, increasing feed costs, monopoly situation in the current market, etc. affect the cattle breeding enterprises in Burdur province negatively to a great extent. In addition, supporting the roughage needs of the enterprises with their activities in the agricultural field contributes to the enterprises in Burdur province to a great extent. Cattle breeding has a great place in Burdur province due to its contribution to the current economy. According to the data in 2019, milk production per cow milked in Burdur province has an average well above the averages of Turkey and the Mediterranean region. The average amount of milk per capita is 1360 liters in Burdur and 249 liters in Turkey. Considering the data, it is seen how important Burdur province is in terms of cattle breeding.

Figure 1. Threats Affecting Cattle Breeding in Burdur Province

Figure 2. Opportunities Available for Livestock Breeding in Burdur Province

Figure 3. Weaknesses of Burdur Province Cattle Breeding Enterprises

Figure 4. Strengths of Burdur Province Cattle Breeding Enterprises

CONCLUSION and RECOMMENDATIONS

The data obtained as a result of the study were brought together and the most obtained data were collected under headings with the SWOT analysis technique. Accordingly, opportunities for cattle enterprises in Burdur province;

1. Milk Prices and Business Production

2. Cattle Population and Animal Trade

3. Market Access and Competition

4. Population Growth and Demand

5. Agriculture and Livestock

6. Market Diversity and Veterinary Services

7. Regional Opportunities

8. Business Management and Modernization

9. Transportation and Tourism Opportunities

Businesses' strengths are;

1. Family Businesses and Collective Work

2. Forage Production and Arable Lands

3. Market Proximity and Sales Strategies

4. Veterinary Services and Animal Health

5. Local Cooperation and Assistance

6. Milk Quantity and Breeding Values

7. Ease of Transportation and Agriculture/Livestock Tradition

8. Natural Production and Family Business Oriented Strategy

Weaknesses of businesses;

1. Technological Deficiencies

2. Raw Material Supply Challenges

3. Business Expansion and Number of Caregivers

4. Financial Inadequacy

5. Export and Marketing

6. Stables and Infrastructure Problems

7. Age and Labor Challenges

It is listed under the headings. As a result, the biggest negative impacts affecting enterprises in general are economic inadequacies. The common meeting point of all of them, including technological deficiency, lack of equipment, inadequate operating conditions, high labor force per capita, is economic conditions. Apart from this, the lack of increase in demand due to the

increasing population and the approach of the growing young population to the sector also affect cattle breeding negatively. As a result of the research, certain suggestions have been presented in order to minimize the weaknesses of the enterprises and the increasing threats that negatively affect the enterprises. These suggestions are

It should be aimed to bring the enterprise to the best places with the available means. The existing arable land should be utilized in the most efficient way and waterless agriculture should be practiced as much as possible. As a result of changing climatic conditions and increasing global warming, drought occurs in agricultural areas as a result of decreasing groundwater and surface water resources. In order to prevent this, waterless agriculture should be practiced as much as possible and existing pastures should be made productive. If possible, the animals in the enterprise should be replaced with animals suitable for the climate, if not possible, the existing animals should be selected. Management conditions should be changed in accordance with the climate. The highest yield with the least cost should be calculated. Existing resources should be utilized in the most efficient way for a sustainable enterprise. Grants and supports provided by the government should be used in a calculated and necessary manner. In order to minimize feed costs, arable areas should be used and a high portion of the roughage need should be met from these areas. In order to reduce animal losses and yield losses, preventive medicine should be used and veterinary costs should be minimized.

- High input costs are one of the most prominent threats in cattle breeding. Although it is difficult to prevent increasing costs economically, it will contribute to a great extent for the enterprises to produce their roughage by using the available agricultural lands.

- Labor costs are a major obstacle for businesses. For this, it is useful to utilize technology as much as possible with the existing facilities.

- Feed costs are very important for businesses. Instead of rations containing a wide variety of raw materials, more suitable rations should be made more efficient by evaluating the raw materials in the most efficient way.

- Agricultural grants and incentives should be utilized to the maximum extent possible. In this way, the tools and equipment required for the enterprise can be accessed more easily and in the most appropriate way.

- No matter how difficult it may be to find workers in the physical sense and for the existing workers to work at a sustainable level, care should be taken to provide the necessary opportunities.

- Another financial difficulty in the enterprises is veterinarian fees. The main reason for this is unconscious breeding. Nutritional diseases and most bacterial diseases can be prevented before the animal gets sick. Preventive medicine is important for this.

- Dairy companies usually insist that the enterprises they buy milk from also buy feed from them. In order to prevent this situation and to eliminate monopolization, cooperatives should be established.

- In the marketing of products, institutionalized companies and intermediary firms constitute almost every part of the current market of our country. This situation poses a big problem for producers. For this, unions or cooperatives should be established and collective action should be taken, and the existing market should be tried to be saved from this monopolization.

REFERENCES

Ağaoğlu, E., Şimşek, Y. ve Altınkurt, Y. (2006). Endüstri meslek liselerinde stratejik planlama öncesi SWOT analizi uygulaması. Egitim ve Bilim, 31(140), 43-55.

Alpkan, L. (2000) Strateji Belirleme Sürecinin Kapsamlılığı. *Doğuş Üniversitesi.*

Berksan, F. (1995). Türkiye de et koyunculuğu ve ıslah çalışmaları. Türkiye Hayvancılığının Yapısal ve Ekonomik Sorunları Sempozyumu, İzmir, 1995. Ege Üniversitesi Ziraat Fakültesi Tarım Ekonomisi Derneği. *T.C. Ziraat Bankası Kültür Yayınları 27.*

Çelik Ş., (2015). Çok Boyutlu Ölçekleme Analizi ile Hayvancılık Açısından Türkiye'de İllerin Sınıflandırılması. *Erciyes Üniversitesi Fen Bilimleri Enstitüsü Fen Bilimleri Dergisi 31*(4), 159-167.

Dinçer Ö. (2004). Türkiye'de Faaliyet Gösteren İşletmelerde Strateji Geliştirme Süreç ve Uygulamaları. Stratejik Yönetim ve İşletme Politikası, 73-84, Alfa Yayınları.

Doğanay S., Alım M. (2021). *Türkiye'nin Beşerî ve Ekonomik Coğrafyası*, 110-150. PEGEM Ağa Yayıncılık, Ankara.

Downey, J. (2007). Strategic Analiysis Tools-Topic Gawety Series. The Chartered İnstitue of Management.

Güven, O. (2018). Türkiye Büyükbaş Hayvancılık Sektörünün AB Ülkeleri ile Karşılaştırmalı

Analizi, *Hitit Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 11*(1) 2018, 765-780.

Rostami, M. (2015). Effectiveness of strategic and operational menagement accounting tecnhniques. American Journal of Economics, Finance and Menagement, 1, 362-368.

Saçlı, Y. (2007). "AB'ye Uyum Sürecinde Hayvancılık Sektörünün Dönüşüm İhtiyacı" DPT Uzmanlık Tezleri, Yayın: DPT: 2707, Ankara, 2007.

Ülgen, H., Mirze, K. S. (2018). *İşletmelerde Stratejik Yönetim*. (9. Baskı)., Beta yayınları, İstanbul.

APPENDICES

ANNEX-1 QUESTIONNAIRE FORM

Dear Participant

Prof. Dr. Kürşat Özdaşlı conducted a SWOT Analysis for the Cattle Breeding Sector: A Research in Burdur Province Center, this interview text was created to collect data for the thesis study. This questionnaire was prepared to make a general evaluation. I expect you to answer all the questions as the answers obtained will be kept confidential and used for scientific purposes. Please evaluate yourself carefully and objectively. Please check only one of the options that is most appropriate for your situation.

Prof. Dr. Kürşat ÖZDAŞLI Derya GÜVEN

Burdur Mehmet Akif Ersoy University Graduate Student

Faculty Member

PERSONAL INFORMATION FORM

Gender	Woman ☐ Male ☐
Marital Status	Single ☐ Married ☐
Age	...
Education status	...
Animal Capacity (Number)	...
Year of Establishment	...
Number of Employees	...
Business Type	Milk ☐ Fattening ☐

OPPORTUNITIES

Which opportunities are available in the livestock sector in today's conditions?

1.a In terms of Burdur:

1.b For Turkey:

1.c In world terms:

THREATS

What are the threats in the livestock sector in today's conditions?

2.a In terms of Burdur

2.b For Turkey

2.c World perspective

STRENGTHS

3.What are the strengths of enterprises in Karaman?

3.a What makes you as a business superior to your competitors and other businesses?

3.b What are the aspects that competitors and other businesses have not captured in you

WEAKNESSES

4. What are the weaknesses that distinguish you as a business from competitors and other businesses?

4.a What are the weaknesses you intend to strengthen?

4.b Are there any things you wish our business had? If yes, what are they?

ANNEX-3 CV

BACKGROUND

Personal Information:

Name and Surname : DERYA GÜVEN

Place of Birth KARAMAN

Marital Status SINGLE

Education Status:

Undergraduate Education: BURDUR Mehmet Akif Ersoy University Faculty of Economics and Administrative Sciences / Business Administration

Master's Degree: BURDUR MAKU/SBE/Business Administration

Scientific Publications and Studies:

1. Kılıç Aksoy, Ş., Güven, D., & Çiçek, H. (2023). Informal Communication on Job Competence

The Mediating Role of Optimism in the Effect. *Mehmet Akif Ersoy University Journal of Faculty of Economics and Administrative Sciences*, *10*(2), 1165-1186. https://doi.org/10.30798/makuiibf.1219644.

Güven, D., Çiçek, H. (2022). Strategic Analysis in Cattle Livestock Enterprises: The Case of Karaman Province. III. International Siirt Scientific Research Conference.

DIGITAL SOLUTIONS FOR SUPPLY CHAIN MANAGEMENT IN HEALTHCARE

Rena SULTANOVA

Institute of Economics of MSERA, D.Sc., prof.

rena-sp@mail.ru

Turkan AHMADOVA

Institute of Economics of MSERA, doctoral student

Email: turkan.ahmedova89@gmail.com

ARTICLE INFO	ABSTRACT
	Against the backdrop of the fourth revolution and the COVID-19 pandemic, many companies have started to rethink their supply chains to increase their flexibility and efficiency to ensure their 'survival'. As a result, the concept of digital supply chain has gained more attention. The concept of digital supply chain can increase the sustainability of logistics operations as it offers more tools for visualization, monitoring and forecasting.
	Healthcare is on the cusp of radical change into a new era of intelligent and connected healthcare called Health Care 4.0. Healthcare organizations are integrating disruptive technologies into their supply chains, ushering in the fourth industrial revolution - Healthcare Supply Chain 4.0. Healthcare Supply Chain 4.0 incorporates the sustainable practices of Industry 4.0 technologies. Thus, a comprehensive, intelligent, and interconnected healthcare society is emerging, leading to the Healthcare 4.0 paradigm.
	So, the aim of the study is to substantiate the relevance of the application of technological innovations in improving health care in modern times. As the methodological basis of the study, it is shown that the main goal is the transition from traditional healthcare to digital healthcare. The application of the study is to increase the effective and sustainable use of digital solutions in improving the healthcare supply chain. The findings of the study will serve to improve the healthcare supply chain, deepening the reforms on the application of high technology in this field. The originality and scientific novelty of the study is that the features and directions of application of Industry 4.0 platform components and other innovative technologies at different levels of the healthcare supply chain have been explored.

INTRODUCTION

Supply chain (SC) is defined as extractive, manufacturing, commercial, service companies and their customers interacting in different functional areas between which product, information and financial flows occur (Witkowski, 2003). SC is a network of organizations that are involved, through upstream and downstream linkages, in various processes and activities that create value in the form of products and services in the hands of the end consumer (Christopher, 2016). Supply chain management (SCM) is the management of upstream and

downstream relationships with suppliers and consumers to provide superior customer value at lower cost to the supply chain. Since the term was introduced in the early 1980s, SCM has gained widespread prominence and, through decades of theoretical and practical wisdom, has become a mainstay of business. With a particular focus on stakeholder interactions, the wealth of acquired knowledge in SCM provides a unique opportunity to understand, evaluate and improve complex ecosystems such as healthcare systems (Betcheva et al., 2020). The supply chain in this industry is a major cost driver and therefore attracts close attention from industry stakeholders.

Healthcare SCM is the process of managing, distributing, monitoring a product or service in a hospital that deals with suppliers, customers, and other channel actors (Adnan and Sahroni, 2014). SCM in healthcare is a complex task. There are two critical issues that need to be managed effectively, such as health services and costs, to ensure the best quality. Sustainable supply chain management in health care includes information, procurement, suppliers, service providers, internal and external customers and end users. Economic sustainability can be perceived as the goal of controlling costs, movement and delivery of goods and services on a time scale that starts with the supplier and ends with the end user, integrating processes (Dau, et al., 2019).

Industry 4.0 is a concept that encompasses automation and information technology, as well as some of the major technological innovations in these areas. Industry 4.0 initiatives help industries implement measures to protect and control the environment and reduce supply chain risks by turning them into sustainable supply chains. Sustainable supply chain aims to design, plan, and operate supply chains that can guarantee market needs, considering not only profit but also environmental and social concerns (Dau et al., 2019).

The healthcare SC lags far behind other industries in terms of efficiency and adoption of best practice. The current trend shows that the industry struggles to meet SC timelines. The main weakness remains the fact that each part of the SC operates independently, creating uncoordinated activities that prevent them from functioning as a unified system. Managers could bridge this gap and improve SC efficiency in healthcare by implementing digitalization initiatives. However, the uneven, unconnected digitalization of practices already implemented in the health sector makes it difficult to maximize the potential of these initiatives.

HELATHCARE SUPPLY CHAIN MANAGEMENT

In healthcare organisations, the supply chain is a new way of conceptualising healthcare supply management. The SC is defined as 'a virtual network that facilitates the movement of a product from its production, distribution and consumption' in healthcare from supplier to end-user with the aim of improving clinical outcomes while controlling costs. This definition identifies three critical aspects of the SC: finance, materials and information, and these aspects are embodied in three healthcare SC constructs: affordability, access and awareness. SCM is more complex in healthcare than in other sectors because of the impact on human health, which requires adequate and accurate medical supplies in accordance with patient needs (Jahantigh and Malmir, 2015). SCM is a concept, strategy and approach that has proven its value and excellence in the management of healthcare facilities around the world. Observations show that hospitals that have successfully implemented SCM have recorded a 50% reduction in inventory, a 40% increase in on-time delivery, a doubling of stock returns combined with a nine-fold reduction in out-of-stock rates (Jahantigh and Malmir, 2015).

SCM in healthcare should ensure full end-to-end visibility between suppliers, manufacturers, distributors and customers. The healthcare SC involves the movement of many different types of products and the involvement of multiple stakeholders. The primary objective of the healthcare SC is the timely delivery of products to meet the needs of suppliers (Afoakwah et al., 2023). All stakeholders in the health supply chain, including actors, organisations and individuals, are shown in Table 1.

Table 1. Stakeholders in healthcare supply chain

Category	Stakeholders
End consumers	Patients, patient families, and populations
Care providers	Hospitals, clinics, ambulance services, mental health, public health, physicians, nurses, technicians, managers, paramedics, dentists, psychiatrists, et al.
Intermediaries	Group purchasing organizations, pharmacy benefit managers
Pharmaceutical providers	Innovators (such as research institutes and academia), biotechnology firms, clinical trial sites, raw material suppliers, pharmaceutical manufacturers, distributors, wholesalers, pharmacies (retailers)
Equipment & ancillaries	Medical, diagnostic, and surgical devices, capital equipment, office equipment, vaccines, blood, organs
Contractors	Contract research organizations, contract manufacturing organizations, site management organizations, clinical commissioning groups
Policy makers	Governments, regulators, patent, and trademark offices, quality monitors, advisory committees
Payers	Insurance companies, national and local governments, employers, venture capital firms, communities, nonprofit organizations, foundations and charities, patients, patient families
Support services	Research institutes, information technology systems and electronic health records, decision support systems

At the heart of effective and efficient SCM is supply chain thinking, which encompasses three key aspects: customer orientation, systems approach and strategic orientation. Customer orientation ensures that the creation of customer value is a key driver of SCM activities. The systems approach looks at organisations in the SC as an end-to-end, integrated unit, and the strategic orientation of each individual organisation aligns the organisation's intra- and inter-firm goals and capabilities with those of the SC (Betcheva et al., 2020).
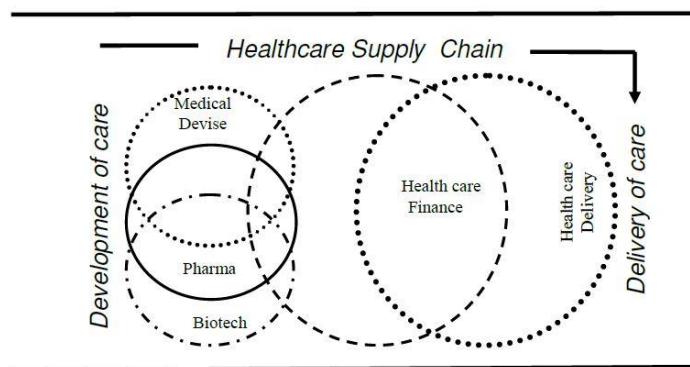

Figure 1. Supply chain for the healthcare sector.

As shown in Figure 1, at the top of the health services supply chain are circles representing the industries associated with the development of key elements of the care package, namely the medical device, pharmaceutical and biotechnology industries. At the bottom of the supply chain

is a circle representing the healthcare delivery industry, consisting of organisations such as hospitals, clinics and home health services. In the centre is the circle representing the healthcare financing industry, which includes organisations such as insurance companies and banks offering medical savings accounts. The intersection points of the circles represent the interdependence between the constituent sectors of the healthcare SC (Jahantigh and Malmir, 2015).

Historically, SC in healthcare has usually been associated with the procurement and logistics of health products and services. However, recent developments in healthcare have made this understanding too narrow. For example, a new way of thinking, illustrated by the widespread adoption of technology, an emphasis on integrated care delivery and the alignment of stakeholders' interests through new reimbursement schemes, has pushed health authorities to adopt broader SC concepts. In addition, the complexity of interactions between health care stakeholders and the isolated nature of health care delivery create an opportunity to understand, evaluate and improve this dormant ecosystem in a systematic, holistic manner. Thus, following the path of traditional SC, which has expanded the field of procurement to the prevailing view of SCM, SCM in health care has a much broader scope than the usual procurement and logistics-focused definition (Betcheva et al., 2020).

There are two well-known models in supply chain organisation: Supply Chain Operations Reference (SCOR) model and Global Supply Chain Forum (GSCF) model. The SCOR approach takes a transactional perspective and defines five core business processes as relating to supply chain management from a transactional perspective, thereby addressing issues of transactional efficiency, cost reduction and asset utilisation.

The following 5 processes are included in the SCOR model:

1) Plan (demand and supply planning and management);

2) Source (the raw materials);

3) Make (plan production and produce);

4) Deliver (all steps in the order to payment cycle);

5) Return (the raw materials to the supplier or receive returned goods from the customer) (Hubner and Elmhorst, 2008).

As their names suggest, these processes are production-related. For this reason, when applying the SCOR model to health care, it is recommended to reduce the number of relevant processes - planning (if possible), source (medical supplies), providing patient care (which would be a mixture of production and delivery in the original model) and return (defective supplies). Because of its industrial origin, the entire SCOR process is based on a proper planning process. As a result, SCOR processes can be partially transferred to healthcare.

In contrast to SCOR, GSCF primarily looks at relationship management and economic value added and focuses less on transactional efficiency. It thus emphasises the overall corporate strategy rather than the transactional strategy as SCOR does. GSCF defines eight processes that overlap with SCOR. Each of these processes consists of strategic and operational sub-processes. These include:

1) Customer relationship management;

2) Customer service management;

3) Demand management;

4) Order fulfilment;

5) Manufacturing flow management;

6) Product development and commercialization;

7) Supplier relationship management;

8) Returns management (Hubner and Elmhorst, 2008).

The main differences from SCOR are "supplier and customer relationships" and "product development and commercialisation". Like SCOR, the concept of GSCF originated in manufacturing, so similar problems arise when the approach is transferred to health care without change (Hubner and Elmhorst, 2008).

Observations show that different national and regional healthcare systems use several models of care delivery. Three trends underlying all three aspects of healthcare SCM should now be noted. Thus, they seek to maximise the overall health and quality of life of patients and to improve patient outcomes by enhancing client-centredness. These trends include:

1) Shifting the focus of treatment from treatment to prevention

2) Shifting care closer to the patient's home

3) Shift from extensive treatment to personalised/precise medicine (Betcheva et al., 2020).

Changes brought about by digital health, artificial intelligence, blockchain and other health innovations are bringing a new vision for the concept of health services to the systems approach. As a result, new variations in models and strategies in healthcare delivery, healthcare SCM and new trends are being observed that adapt to the changing goals and priorities of stakeholders.

DIGITALIZATION OF HEALTHCARE SUPPLY CHAIN

The digital revolution is rapidly and fundamentally changing the way individuals and organizations do business, including the important business of providing healthcare services. Doctors, hospitals, and health systems are taking steps to meet the expectations of digitally connected consumers for superior patient care. In addition, megatrends and customer expectations are changing the game. Beyond the need to adapt, SCs can reach new levels of operational efficiency, leverage new digital SC business models, and transform the company into a digital SC. To develop these trends and cope with the changed requirements, SCs must become much faster, more granular, and much more accurate (Deloitte, 2018; McKinsey&Company, 2016).

Digitalisation of the SC provides a cost-effective way for healthcare providers to deliver the right product to the right patient at the right time - using technological advances to improve data flow and analytics, provider-patient communication, asset tracking and regulatory compliance (Deloitte, 2018).

 Digitalisation of the SC brings about the following changes:

• Redesign, including digitisation, standardisation and improvement of business process models;

• Automation and process improvement;

- Development of SC collaboration;

- SC integration;

- Process and product innovation;

- Increased transparency for better decision-making;

- Quicker response to changes in demand and patient needs;

- More choice in decision making in SCM;

- Increasing and maintaining competitive advantage, etc. (Nowicka, 2019a).

The digital transformation of the healthcare SC begins with a digitisation process that improves healthcare facilities and systems from within and integrates data elements across the spectrum of patient care. This process is referred to in several publications as 'core digitization' (Deloitte, 2018). Core digitization is an enterprise-wide exercise in which a common technology platform, often an integrated enterprise resource planning (ERP) system, links and exchanges information from central business functions such as finance, procurement, SC, marketing and others. Unlike traditional business networks, which operate linearly and sequentially, the digital core enables real-time cross-functional communication, connecting business operations to a broader set of ecosystem partners, such as patients, suppliers and similar systems. The digitized core is the foundation upon which higher-order initiatives are built. Digitization of the core can help healthcare providers address SC challenges by disrupting the traditional linear SC (Figure 2.) and creating an interconnected, smarter, faster and more responsive digital SC (Deloitte, 2018).
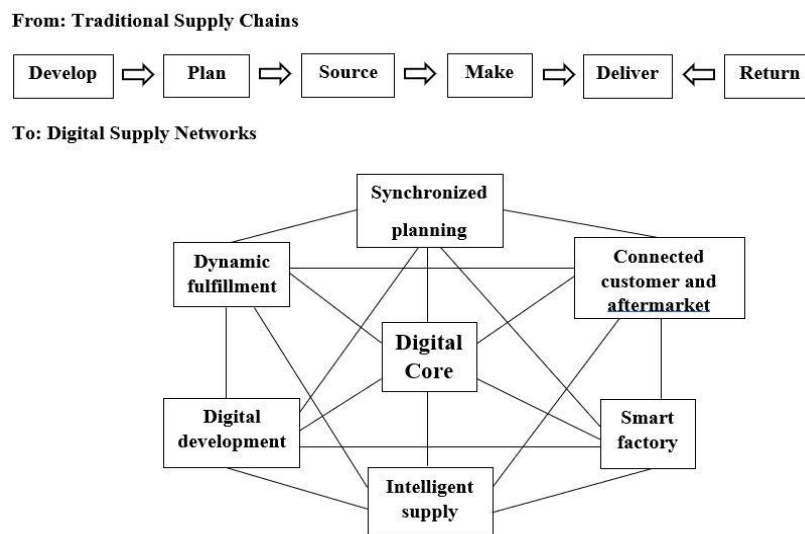
Figure 2. From a traditional supply chain to digitized supply networks

Digital Supply Networks (DSN) can be activated and leveraged through "digital streaming", created to transmit information, goods, and services over physical and digital channels. This provides a flexible, "always-on" stream of data and analytics that helps healthcare facilities and systems achieve productivity, improve operational efficiency and effectiveness, increase patient engagement and create new revenue opportunities. In addition to increased transparency and communication, DSN accelerates processes, reduces costs and better informs business management decisions (Deloitte, 2018).

Digital technologies being implemented in supply chain management are such a new solution. As a result of their implementation, supply chains are undergoing digital transformation. Digital transformation of a supply chain is the transformation of its business model into a model that provides new value based on digital technologies to achieve higher performance within the framework of achieving the strategic objectives set for supply chains (Nowicka, 2019b). Digital transformation of a supply chain is the process and result of a digital transformation strategy adopted first by a company. Subsequently, an operating model and supply chain management model are developed, integrated activities are planned within the functions of sourcing, manufacturing and distribution, measures, and indicators of expected results for individual functions are defined, and a technology ecosystem infrastructure is created to realize the strategic goals of both the enterprise (digital chain leader) and the supply chain (Raab and Griffin-Cryan, 2011).

Two key factors are needed for the transformation to a digital SC - capability and environment. Capabilities relating to digitalization need to be created within the organization, but usually this also requires a targeted recruitment of specialists. The second key prerequisite is the implementation of a two-speed architecture/organization. This means that while the organization and IT landscape is established, an innovation environment with a start-up culture needs to be created. This "incubator" must provide a high degree of organizational freedom and flexibility and state-of-the-art IT systems (two-speed architecture independent of existing legacy systems) to enable rapid cycles of solution development, testing and deployment. Rapid implementation of pilot projects is necessary to get immediate feedback from business on the suitability and impact of solutions, to build excitement and confidence in innovation, and to guide the next development cycles. The "incubator" is the seed of Supply Chain 4.0 in the organization - fast, flexible, and efficient (McKinsey&Company, 2016).

The concept of digitalisation of SC can include traditional technologies such as EDI, eCatalogues and, more recently, sophisticated technologies such as cloud computing, IoT, big data analytics, 3D printing, blockchain and artificial intelligence. These technologies can be used to improve the historical benefits of SCM, i.e. real-time synchronisation of matter flows with information flows, highly personalised production, and flexibility and agility. However, these new technologies will require restructuring the roles of the various SC actors. Digitalisation will also require SC actors to recruit or develop sufficient skills to master new tools and analyse masses of data. Therefore, instead of rushing to acquire new technologies without realising their full potential, it is recommended that organisations prepare plans for the application of these technologies (Beaulieu and Bentahar, 2021).

Several strategies have been identified in relation to the application of new technologies to the digitization of the healthcare SC.

Virtual Centralization of the Supply Chain: Working together using virtual SCM centralization can put hospitals on the path to cost control and improved quality of care. Virtual centralization integrates operations from the perspective of the market rather than that of the healthcare system (Afoakwah et al., 2023). The most mature example is the consolidated service centre (CSC), which is jointly owned and operated by several hospitals and health systems. A CSC combines geographically dispersed groups of hospitals into separate organisations that work together to centralise contracting, purchasing, distribution and logistics operations. The CSC serves not only as a point of contact for sales but also for centralised ordering, purchasing and customer service (Joseph et al., 2013).
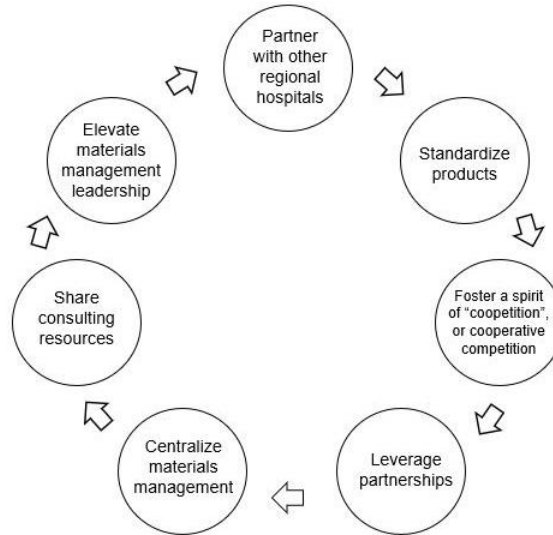
Figure 3. Forming a Consolidated Service Center (CSC)

This innovative approach helps solve crucial problems related to personnel, time, and budgetary constraints. And while saving money is paramount, CSC also provides networking opportunities for participants. The ability to share best practices, resolve conflicts and provide advice helps improve the bottom line. Hospitals will have much more control over product selection and distribution. Consolidation of utilities will lead to significantly improved cost visibility of the hospital supply chain, higher product prices through standardization and pooling of volumes, lower inventory levels, reduced distribution costs and lower inbound freight costs (Afoakwah et al., 2023; Joseph et al., 2013).

Radio Frequency Identification (RFID): It is a technology that allows objects to be connected to the Internet so that they can be tracked and companies can exchange data about them. Unlike the use of barcodes, RFID tags are reliable and do not require line-of-sight identification, eliminating the need for human intervention (Afoakwah et al., 2023). The tags are programmable and contain destination information, weight, and a time stamp. Tags enable the automation of the entire supply chain, including optimization of warehouse space and efficient tracking of goods to reduce costs and improve customer service. RFID tags provide accurate information in real time, forcing applications and processes in all organizations to add value to services (Joseph et al., 2013).
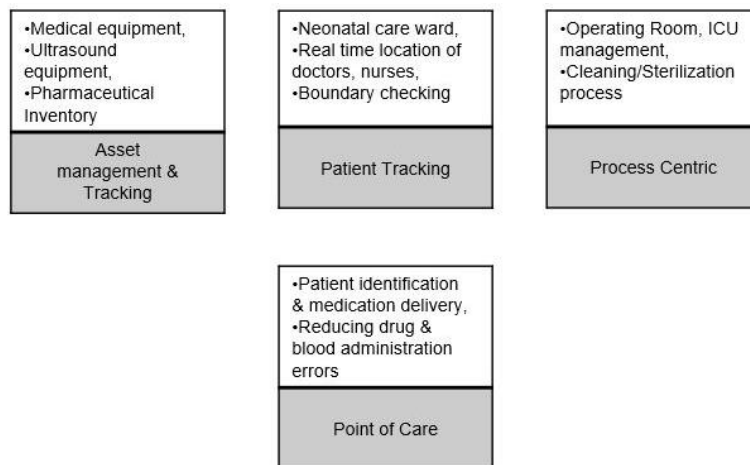

Figure 4. RFID Applications

Real-time tracking of goods throughout the supply chain provides one of the key opportunities for improving customer service. Real-time delivery time information supports just-in-time manufacturing (JIT) and retail, enabling organisations to make strategic decisions.

The following results can be achieved with RFID:

- Improved tracking of high-value goods/assets

- Reduced transport errors in the SC.

- Inventory visibility, accuracy, and efficiency at every stage

- 'Intelligent' feedback for improved production planning and efficient scheduling

- Technology standards for lower costs with higher consumption of tags (economies of scale) (Afoakwah et al., 2023)

However, there are a number of obstacles to the use of RFID in healthcare, including:

- Technical challenges - RFID can interfere with the hospital environment, such as medical equipment. Secondly, RFID systems are not always reliable. The accuracy of RFID reading depends on many factors such as the object with the tag, the location of the tag, the angle of rotation and the reading distance.

- Cost - The cost of RFID includes initial hardware and software costs, training, as well as the ongoing high costs of maintaining and updating the RFID infrastructure.

- Privacy issues - The benefits of using RFID in healthcare facilities are only achievable if patients are confident that the data being transmitted will not be misused. Patient information associated with an RFID tag is highly mobile and confidential.

- Other barriers - Other barriers to the implementation of RFID include lack of organisational support, trust and security issues (Joseph et al., 2013).

Supply Utilization Management: Newly identified savings come not from price reductions, but from eliminating waste, inefficiency, misuse and value mismatch of products, services and technologies used by health-care organizations. The following types of use inconsistencies are common in health care organizations.

- Standardization. Customising products to the exact requirements of customers can reduce an organisation's SC costs. Otherwise, the healthcare organisation's money is wasted on unnecessary features and functions. Therefore, customisation is preferable to standardisation.

- Over-specification. Hospitals often purchase products with components or features that are not medically, legally or functionally necessary.

- Under-specification. Too few components, incorrect components or missing critical features in products, services and technologies are another common cause of non-conforming use.

- Cost inadequacy. Many healthcare organisations inflate their supply budgets with expensive products, services and technologies that are not functionally required. Such organisations often do not look for available cheaper functional alternatives that can meet or exceed customer requirements.

- New technologies. All new technologies must be monitored carefully for at least three months to ensure that they meet or exceed the manufacturer's specifications.

- Older technologies: All technologies, whether lifts, IV pumps, anaesthesia machines or imaging systems, have a certain number of years of service life, and it is uneconomical for a hospital to continue to maintain them beyond their useful life (Afoakwah et al., 2023).

Vendor Managed Inventory: Under Vendor Managed Inventory (VMI), the supplier assumes responsibility for inventory management at the customer and makes decisions about replenishment. To a certain extent, this is based on the information requirements of non-stock inventory systems. The main difference is the transfer of responsibility for inventory management to the supplier, since the ordering process remains automated. For VMI to be successful, accurate information about current stock levels and consumption is necessary. However, providing such information in hospitals can be difficult (Joseph et al., 2013).

Thus, today's healthcare providers are under enormous pressure from growing competition, government regulations, rising costs and demands for higher quality care. Undoubtedly, health-care as a business is becoming extremely complex to manage with diversified departments, changing organisational structures, mergers, employees and multiple information systems around the world. Healthcare organizations must strive to add value to the entire SC by monitoring SC performance. Recent innovations in RFID technology, SC utilisation management and near-centralised SCM are key to the future. Going forward, SC utilisation management is a new best practice that will enable healthcare organisations to look deeper and more fully into their SC costs to generate new and even better SC savings (Afoakwah et al., 2023; Joseph et al., 2013).

CONCLUSIONS

As a result of the changes brought about by the digital economy, supply chain managers are expected to become increasingly innovative and creative to gain a competitive advantage. Traditional supply chain management strategies focus on incremental change, risk avoidance, and cost containment to improve efficiency. Modern supply chain management strategies must take a different approach to beat the competition. This should provide two supply chain management options. The first takes a linear approach to change, emphasizing the importance of predictability, accuracy, reliability, and stability. The second is about learning through nonlinearity, failure, and iteration. Because of the complexity of building supply chains that fit the assumptions of this approach, most managers focus on the first approach to supply chain management, staying in a sort of "comfort zone" about the type of decisions to be made and relying mostly on experience. But the changes taking place require risky but "non-criminal" decisions. As a result, hybrid solutions are emerging in supply chain management, i.e., utilizing both the resources already used and implementing new, innovative solutions that incorporate speed, risk, and preparedness (Griswold, 2017).

The introduction of new technology is known to be a major lever for improving SC operational efficiency. Thanks to the opportunities created by digitalisation, the SC has now become transparent, leading to full visibility of order information from the supplier to the manufacturer, to the distribution centre, to the carrier, to the customer. Researchs show that the potential impact of the Supply Chain 4.0 concept will be enormous in relation to Industry 4.0 in the coming years. So, operational costs are expected to be reduced by up to 30%, lost sales are expected to be reduced by 75% while inventory is reduced by 75%, while SC agility is significantly improved (McKinsey&Company, 2016). A fully computerised inventory will enable a healthcare facility to manage its SC at 'speed of thought'. Tomorrow's SCM will be a fully virtual organisation with the advent of rapid adoption of internet biotechnology, integrated

through efficient data sharing and cost savings at every stage.

REFERENCES

1. Afoakwah E.A., Kemevor H., Dauda S., Owusuaa-Konadu O. Snr. (2023). Emerging trends in healthcare supply chain: an approach to agile services. *International Journal of Supply Chain and Logistics,* vol. 7, No. 1, pp 23-36.

2. Adnan M., Sahroni M. (2014). Best practices in healthcare supply chain management to improve the performance of healthcare services.
https://www.academia.edu/11622662/Best_Practices_in_Healthcare_Supply_Chain_Management_to_Improve_the_Performance_of_Healthcare_Services

3. Beaulieu M., Bentahar O. (2021). Digitalization of the healthcare supply chain: a roadmap to generate benefits and effectively support healthcare delivery. *Technological Forecasting and Social Change,* vol. 167.
https://doi.org/10.1016/j.techfore.2021.120717

4. Betcheva L., Erhun F., Jiang H. (2020). Supply chain thinking in healthcare: lessons and outlooks. https://core.ac.uk/download/pdf/323054162.pdf

5. Christopher M. (2016). Logistics and Supply Chain Management. *Pearson, London*.

6. Dau G., Scavarda A., Scavarda L.F., Portugal V.J.T. (2019). The healthcare sustainable Supply Chain 4.0: the circular economy transition conceptual framework with the corporate social responsibility mirror. *Sustainability, vol. 11, No. 12, pp 1-19.* https://doi.org/10.3390/su11123259

7. Deloitte (2018). Giving health care providers a digital edge: the case for digital supply networks. Deloitte Development LLC. www2.deloitte.com

8. Griswold M., (2017). Supply chain leaders must be prepared to transform in a disruptive world: A Gartner trend insight report. *Gartner*. https://www.gartner.com/doc/3664318 (20.10.2018)

9. Hubner U., Elmhorst M.A. (2018). eBusiness in healthcare: from eProcurement to supply chain management. *Springer-Verlag London Limited.*

10. Jahantigh F.F., Malmir B. (2015). Development of a supply chain model for healthcare industry. *Proceedings of the 2015 International Conference on Indsutrial Engineering and Operations Management, Dubai, UAE, March 3-5.*

11. Joseph M., Joshin J., Dr. Kumar S. (2013). New trends in healthcare supply chain.
ttps://www.academia.edu/39667374/New_Trends_in_Healthcare_Supply_chain

12. McKinsey&Company (2016). Supply Chain 4.0 – the next-generation digital supply chain. www.mckinsey.com

13. Nowicka K. (2019a). Digital innovation in supply chain management. *Research Papers of Wroclaw University of Economics, vol. 63, No. 8, pp 202-214.*

14. Nowicka K. (2019b). Digital technologies as a decisive factor in supply chain transformation. *SGH Publishing House, Warsaw.*

15. Witkowski J. (2003). Supply Chain Management. *Polish Economic Publishing House, Warsaw.* www.gartner.com/it-glossary/digitalization

PREPARING FOR BIG DATA: DIGITAL TRANSFORMATION STRATEGIES OF HIGHER EDUCATION INSTITUTIONS

Hüseyin ŞATIRER[1*], Ahmet Sait ÖZKUL[2]

[1] *Süleyman Demirel University, Isparta, Türkiye*

[2] *Süleyman Demirel University, Isparta, Türkiye*

ARTICLE INFO	ABSTRACT
	The aim of this study is to examine the digital transformation strategies employed by higher education institutions in their preparation for the use of big data. The emergence of digital transformation has the potential to precipitate radical changes in the education sector. The application of big data analytics facilitates more effective decision-making processes. Accordingly, the present study examines the digital transformation strategies and big data readiness levels of Turkish higher education institutions. Furthermore, the impact of these processes on educational and managerial processes was evaluated. In this context, the study was conducted with the participation of information technology specialists and managers from various higher education institutions in Türkiye. The findings indicate that organizational culture is a significant determinant of the success of digital transformation strategies. Nevertheless, it has been observed that a culture of data-driven decision-making is necessary for the effective management of digital transformation processes. This paper examines the opportunities provided by big data analytics in the education sector and the strategic approaches required for the successful implementation of these opportunities.

INTRODUCTION

Digital transformation is a process by which organizations are made more efficient, flexible, and innovative by restructuring their business processes, corporate cultures, and customer experiences with digital technologies. This transformation facilitates the transition from traditional methods to new technologies, including virtual or physical systems, smart factories, the Internet of Things (IoT), and big data (Boz Eravci, 2020). Big data is defined as the abundance and diversity of data, as well as the emergence of new tools and approaches that exceed traditional data analysis methods (Şeker, 2015). The application of big data analytics enables organizations to make decisions based on a greater quantity and diversity of data, thereby facilitating data-driven decision-making processes and increasing operational efficiency. The

---

effective use of big data in the digital transformation process allows organizations to reshape their growth and development strategies. However, this transformation also creates radical changes in the education sector (Boz Eravci, 2020).

In the context of the digital transformation of the education sector, the application of big data analytics has the potential to enhance the effectiveness of decision-making processes. In this context, the capacity to leverage big data is regarded as a crucial factor for universities in developing their data analytics capabilities and integrating these capabilities into their strategic planning processes (Daniel, 2015; Long & Siemens, 2011; Tabrizi et al., 2019). Higher education institutions leverage the potential of big data analytics in their digital transformation processes. The incorporation of these technologies facilitates the development of more effective and efficient educational environments (Picciano, 2012).

The implementation of digital transformation processes in universities enhances the capacity for big data analytics, thereby facilitating innovation and efficiency in educational and research activities (Tabrizi et al., 2019). Big data analytics offers numerous opportunities, including the prediction of student success, the creation of personalized learning experiences, and the optimization of resource allocation (Daniel, 2017). However, ethical and privacy considerations must be considered for the successful implementation of these processes (García-Morales et al., 2021).

The study underscores the pivotal role of digital transformation and data-driven organizational culture in universities' adaptation to big data. It offers crucial insights into the potential of these technologies for strategic decision-making processes. At the same time, this study provides recommendations for enhancing institutional efficiency and educational quality using data analytics in higher education.

DIGITAL TRANSFORMATION STRATEGIES AND BIG DATA

Digital transformation can be defined as the process of restructuring business methods and processes with the aid of digital technologies. This process contributes to organizations becoming more efficient, flexible, and innovative through the integration and adoption of digital technologies (Nambisan et al., 2019). In the context of education, digital transformation refers to the integration of digital tools and platforms into teaching methods, learning environments, and management processes (García-Morales et al., 2021). Higher education institutions employ a range of strategies in these processes. These strategies encompass a multitude of elements, including but not limited to leadership, technology infrastructure, staff training, and cultural change. The role of leadership in the digital transformation process is of critical importance, as it establishes the vision of the institution (Warner & Wäger, 2019). The technology infrastructure is responsible for ensuring the integration of digital tools and platforms. The objective of staff training is to enhance the digital competencies of academic and administrative personnel. Cultural change is the overcoming of resistance within the organization and encouraging digital innovation for digital transformation to be successful (Brynjolfsson & McAfee, 2013; Crawford et al., 2020).

Studies on the digital transformation strategies of higher education institutions examine the challenges that institutions face in these processes and the strategies they develop to overcome these challenges. For example, Hanelt et al. (2021) underscored the significance of leadership and management competencies for the success of digital transformation. Similarly, Ebert and Duarte (2018) highlighted the technical and operational challenges associated with the integration of digital technologies. These challenges encompass internal barriers, such as the adaptation of

existing organizational structures and cultures to align with digital transformation and the absence of comprehensive digital transformation strategies.

The term "big data" is used to describe the collection and analysis of large volumes of data sets from a variety of sources. In the context of education, big data encompasses a diverse array of data sources, including student performance data, online learning activities, and social media interactions (Daniel, 2015). The process of big data analytics entails the examination and transformation of data into meaningful information. The application of big data analytics in education offers a multitude of potential benefits, including the ability to predict student success, optimize teaching methods, and support institutional decision-making (Tabrizi et al., 2019).

The integration of digital technologies into business processes enables organizations to become more efficient, flexible, and innovative. This process, known as digital transformation, allows for the restructuring of business operations. Big data, defined as the process of analyzing large data sets obtained during this transformation process and transforming them into meaningful information, is a key component of digital transformation. The integration of big data analytics into higher education institutions allows for the prediction of student success, optimization of teaching methods, and the making of more informed institutional decisions.

Big Data Readiness

The focus of digital transformation strategies is on critical elements such as leadership, talent management, technology, and decision-making (Iivari et al., 2020; McAfee & Brynjolfsson, 2012). The level of big data readiness of higher education institutions is directly related to the effective management of these elements (Mergel et al., 2019). In this context, it is essential to evaluate the role and importance of each element separately. The role of leadership is of particular importance in providing strategic direction and support (Warner & Wäger, 2019). Talent management entails the hiring of specialized personnel and the development of their competencies (Hanelt et al., 2021). Technology is utilized to create the necessary infrastructure for data management and to automate its processes (Nambisan et al., 2019). Data-driven decision-making enables strategic decisions to be made in line with the information provided by data (Priyono et al., 2020). The success of the digital transformation strategies of higher education institutions is contingent upon the harmonious management of these elements (Crawford et al., 2020).

Big data is defined as data that exceeds the capacity of a single server, lacks the structured format typical of row-column databases, or is generated in a continuous stream that is incompatible with conventional data warehouses (Davenport, 2018). It also encompasses the unprecedented ability to collect and analyze data in ways that were previously deemed impractical (Marr, 2019).

Organizational readiness for big data analytics is defined as the capacity to utilize big data effectively. It encompasses methodologies for the acquisition, retention, manipulation, and examination of data. The level of readiness is influenced by a few factors, including the presence of a robust and scalable technology infrastructure, effective data management policies, skilled and trained staff, and a corporate culture that encourages data-driven decision-making. These elements are of paramount importance for organizations to fully leverage the potential of big data (Webber & Zheng, 2020). The term "technology infrastructure" encompasses the hardware and software systems that are necessary for the implementation of big data analytics. The

policies that govern the management of data determine the manner in which data is collected, stored, and processed. In order to be effective, staff must possess the requisite expertise and experience in big data analytics. Organizational culture creates an environment that encourages data-driven decision-making and innovation (Daniel, 2017).

Studies on big data readiness examine the factors affecting these readiness levels and how these factors can be managed. Davenport (2018) examines the impact of technology infrastructure and data management policies on big data readiness. Bahram and Daim (2020) underscore the significance of human, technological infrastructure, legal, and organizational factors in the success of big data projects. Accordingly, the process of achieving big data readiness is influenced by a multitude of factors (Molina, 2019). In this context, various models have been developed to assess big data readiness and big data maturity. Austin (2018) developed the FAIR model, which was subsequently adopted by the G20 in 2016. This model emphasizes that data should be findable, accessible, interoperable and reusable. Davenport (2018) created the DELTTA model to determine the level of big data skills. This model includes the following six domains: Data, Enterprise, Leadership, Targets, Technology, and Analysts and Data Scientists.

An alternative approach is the "Five Management Challenges" model, which serves as the foundation for the study. McAfee and Brynjolfsson (2012) assert that businesses that are unable to effectively manage change will be unable to capitalize on the opportunities presented by the transition to big data. This transition encompasses five core areas: Leadership, Talent Management, Technology, Decision Making, and Company Culture (Figure 1).
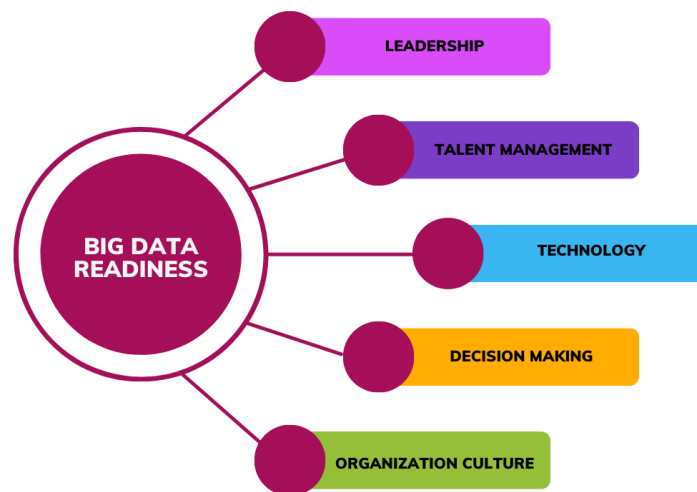
Figure 1. Components of Big Data Readiness

The five components of management challenges are as follows (McAfee & Brynjolfsson, 2012):

- Leadership requires vision and human foresight to succeed in the big data era. It is incumbent upon leaders to establish transparent objectives, discern market prospects, and persuade employees of the vision.

- Talent Management places a premium on the recruitment of data scientists and computer scientists who are adept at working with big data. These professionals must possess a range of critical skills, including data cleansing, organization, and visualization.

- Technology encompasses the tools and software necessary for processing big data, yet these technologies demand novel skills within IT departments.

- Decision-making necessitates aligning knowledge and decision-making authority; leaders must establish flexible organizational structures.

- Organizational culture requires a transition to a data-driven approach, which fosters informed rather than intuitive decisions. These five domains are pivotal to the success of a big data strategy.

Background and Hypotheses of the Study

The advent of digital transformation and big data has precipitated a profound transformation in the education sector in recent years. Digital transformation represents a radical shift in the operational processes of educational institutions, teaching methods, and student interactions. This transformation extends beyond the traditional boundaries of education, paving the way for more personalized and data-driven approaches to education (García-Morales et al., 2021). The application of big data analytics enables educational institutions to more accurately monitor student performance, optimize instructional strategies, and streamline decision-making processes (Daniel, 2015). Big data can be derived from a wide range of data sources, including student records, exam results, interactions on online learning platforms, and even social media data. The analysis of this data facilitates the prediction of student success, the identification of potential problems at an early stage, and the enhancement of educational processes in terms of efficiency (Daniel, 2017). Furthermore, digital transformation and big data have the potential to enhance accessibility and equity in education. These technologies facilitate the provision of more effective services to students with diverse learning requirements (Nambisan et al., 2019; Daniel, 2017).

H_1: Big data readiness significantly affects the digital transformation rates of higher education institutions.

The sub-hypotheses formed based on hypothesis H_1 are listed below.

H_{1a}: Leadership, one of the dimensions of Big Data Readiness, significantly affects the digital transformation rates of higher education institutions.

H_{1b}: Talent Management, one of the dimensions of Big Data Readiness, significantly affects the digital transformation rates of higher education institutions.

H_{1c}: Technology, one of the dimensions of Big Data Readiness, significantly affects the digital transformation rates of higher education institutions.

H_{1d}: Decision Making, a dimension of Big Data Readiness, significantly affects the digital transformation rates of higher education institutions.

H_{1e}: Organizational Culture, one of the Big Data Readiness dimensions, significantly affects the digital transformation rates of higher education institutions.

Method

This section outlines the research design, participant information, data collection methodology, data analysis techniques, limitations of the study, and the findings obtained.

RESEARCH DESIGN

The objective of this study is to ascertain the preparedness of public and foundation universities in Turkey for the integration of big data technologies and to evaluate the extent to which these universities possess the requisite big data skills. In accordance with the objectives of the study, a survey technique, one of the quantitative research methods, was employed. Furthermore, prior to the commencement of data collection, the research proposal was submitted to and approved by the Süleyman Demirel University Social and Human Sciences Ethics Committee. In accordance with the decision of the board dated April 27, 2022, numbered 120/41, the application phase was initiated, as it was determined that the project was "*in accordance with ethical principles and human rights in terms of scope and application.*"

The Big Data Readiness Scale was translated into Turkish by the researcher. To facilitate comprehension of the scale and its constituent statements, the statements were subjected to discussion with an expert in the field of big data and analytics, operating within a large-scale enterprise in the IT supply sector in Turkey. Subsequently, the content of the statements was discussed with a contracted IT professional who is an expert in software development at a university. In the context of peer review, the clarity of the statements was evaluated by two academic experts. In terms of content validity, the clarity and measurability of the statements were discussed by two academics with expertise in measurement and evaluation. In the subsequent phase, the questionnaire items were discussed individually with 10 software development experts at Süleyman Demirel University. The scale was finalized by selecting the most appropriate expressions. It was determined that the adapted structure of the scale into Turkish was compatible with the original structure consisting of 31 statements. It is believed that the scale, in its current state, will contribute to the measurement of big data readiness for competitive advantage and efficient use of technology for organizations.

PARTICIPANTS

The participants in this study were staff and administrators with expertise in information technology (IT) who were employed in IT departments or similar units at higher education institutions in Turkey. The participants were selected from among those with expertise in areas such as big data, analytics, data management, data science, software, and data visualization. A total of 164 participants were included in the study, with seven individuals declining to specify their university affiliation. The study employed the "Is your company ready for big data?" instrument developed by McAfee and Brynjolfsson (2013) as a measurement tool. Furthermore, five statements from the "Big Data Skill Level Assessment Questionnaire" developed by Davenport (Davenport, 2018) were adapted into Turkish. In addition to the "Big Data Readiness" scale, participants were asked to rate their organization's level of digital transformation on a scale of 1 to 100.

DATA COLLECTION PROCESS

The survey form was distributed to the participants via email using the "Microsoft Forms" online survey system. As Baş (2010) asserts, the data collection process aimed to present the participants as integral members of a professional research endeavor, instilling a sense of contribution to the advancement of knowledge within their field and providing information that would foster a sense of value and importance. During the implementation process, a number of technical solutions were attempted in order to enhance the participation rate. To avoid the

possibility of the e-mails being classified as spam and the e-mail addresses being banned, the e-mail addresses were randomly mixed when sending e-mails to 1996 people at the same time. A maximum of 10 emails per day were sent to the same university by randomly mixing email addresses. The objective was to reduce the likelihood of the e-mails being classified as spam (junk) and consequently blocked by the recipient's spam filter. The e-mail sending process was conducted via the "Mail Merge" function of the Microsoft Word program. The Mail Merge feature enabled the creation of personalized emails. A description of the study, a link to the questionnaire, and the website created to promote the study were sent to 400 email addresses per day. In the initial phase of the study, participation in the scale was limited to 100 individuals. Due to the lower-than-anticipated level of participation, email addresses that could not be reached, were marked as junk mail, or were rejected by the server were removed from the list, and a second reminder email was sent. Additionally, an effort was made to reach specialized personnel through WhatsApp groups of contracted IT personnel. Of the respondents who returned, 96% consented to participate in the study.

DATA ANALYSIS

The data were organized using Microsoft Excel and analyzed using Jamovi, an open-source statistical software program. Inferential statistical methods were employed to analyze the data. In the analysis process, regression analysis was employed to ascertain the impact of big data readiness dimensions on digital transformation. It should be noted that the findings of this study may not be generalizable to all universities, as it only included IT employees from a limited number of institutions. It was assumed that the respondents provided truthful and honest responses to the questionnaire statements. The data set encompasses a specific temporal scope (April 2022 to July 2022) and the universities of the respondents who returned.

Prior to commencing the analysis, it was necessary to ascertain whether there were any outliers or missing values. Upon examination, it was determined that there were no missing values or outliers. Subsequently, Confirmatory Factor Analysis was performed to confirm the structural validity of the "Big Data Readiness/Big Data Skill Level" scale. Upon examination of the goodness-of-fit values for the measurement tool, it was determined that the five-dimensional factor structure of the scale, comprising the factors of "Leadership," "Talent Management," "Software Technology," "Data-Driven Decision Making," and "Data-Driven Organizational Culture," exhibited acceptable fit values. The chi-squared value (x^2) was 401, with a degree of freedom (df) of 306, resulting in a x^2/df ratio of 1.31. The comparative fit index (CFI) and the Tucker-Lewis index (TLI) were 0.962, while the root mean square approximation error (RMSEA) was 0.0434. The results of this analysis indicate that Leadership $\alpha = 0.955$, Talent Management $\alpha = 0.857$, Technology $\alpha = 0.622$, Decision Making $\alpha = 0.783$, and finally Organizational Culture $\alpha = 0.724$.

LIMITATIONS OF THE STUDY

The study is limited to IT staff in specific universities in Turkey. This may limit the generalizability of the results. The study results may not be representative of all higher education institutions. It is assumed that the participants who contributed to the survey understood the questions and gave correct answers. The survey was designed as a cross-sectional research design. This does not allow for observing changes over time. Consequently, the study is unable to provide information on the long-term effects of digital transformation processes and changes in big data readiness levels. Digital transformation and big data technologies are undergoing

rapid change. The findings of this study may not fully reflect the effects of technological and policy changes.

Findings

Upon analysis of the results, it was determined that there were statistically significant correlations between the rate of digital transformation and all scale dimensions, with the exception of leadership (Table 1). A high degree of correlation was observed with regard to organizational culture.

Table 1. Correlation Table

		Leadership	Talent Management		Technology		Decision Making		Corporate Culture	
Digital Transformatio n Rate	Pearson's r	0.210	0.398	***	0.313	**	0.334	**	0.509	***
	p-value	0.051	<.001		0.003		0.002		<.001	

Furthermore, an examination of the normal distribution results reveals a p-value greater than 0.05. An investigation of the collinearity test (Collinearity Statistics) indicates that there is no issue with multiple collinearity between the variables, as evidenced by a VIF value less than 10 and a Tolerance value greater than 0.2. The Durbin-Watson test was conducted to ascertain the presence of autocorrelation, which represents the final condition. Upon analysis of the DW Statistics values, it was determined that the values fell between 1.5 and 2.5, indicating the absence of autocorrelation in the regression model (Table 2).

Table 2. Regression Analysis Assumption Checks

Normality Test (Shapiro-Wilk)

Statistic	p
0,990	0,746

Collinearity Statistics

	VIF	Tolerance
Talent Management	2,27	0,440
Technology	2,56	0,391
Decision Making	3,22	0,310
Corporate Culture	2,11	0,473

Durbin–Watson Test for Autocorrelation

Autocorrelation	DW Statistic	p
0.00308	1,97	0,858

The regression analysis (Table 3) indicates that, when all assumptions are met ($R^2 = 0.279$), the multiple regression model can explain 27.9% of the change in digital transformation. Furthermore, the Standard Estimates value suggests that this effect is positive.

Table 3. Regression Model

Model Fit Measures

Model	R	R²	Adjusted R²	Overall Model Test			
				F	df1	df2	p
1	0,528	0,279	0,244	7,94	4	81	<,001

Model Coefficients - Digital Transformation Rate

Predictor	Estimate	SE	t	p	Stand. Estimate
Intercept	18,24	10,16	1,795	0,076	
Talent Management	3,53	3,25	1,085	0,281	0,1534
Technology	2,76	4,87	0,568	0,572	0,0851
Decision Making	-4,56	4,55	-1,002	0,319	-0,1687
Corporate Culture	13,58	3,80	3,572	**<,001**	0,4869

Upon examination of Table 3, it becomes evident that the impact of Leadership, Talent Management, Technology, and Decision Making on digital transformation is not statistically significant ($p < .001$). Consequently, sub-hypotheses H_{1a}, H_{1b}, H_{1c}, and H_{1d} are rejected. However, the influence of Organizational Culture on digital transformation processes was found to be significant. Therefore, sub-hypothesis H_{1e} is accepted. These findings indicate that the most crucial factor in university digital transformation is organizational culture.

DISCUSSION AND CONCLUSION

The present study sought to investigate the impact of higher education institutions' readiness for big data on their digital transformation rates. The findings indicate that only the "Organizational Culture" dimension was found to significantly affect digital transformation rates. The remaining dimensions (leadership, talent management, technology, and decision-making) did not demonstrate a significant impact on digital transformation.

In the existing literature, the critical role of corporate culture in digital transformation is frequently emphasized. For example, McAfee and Brynjolfsson (2012) posit that data-driven decision-making processes are integral to the digital transformation processes of organizations. Similarly, Davenport (2018) posits that a culture that is driven by data is critical for the effective implementation of digital transformation strategies. The findings of this study provide further support for and extend the points made in the existing literature on this topic.

The digital transformation process directly affects the level of big data readiness of higher education institutions. Organizational culture is identified as a significant factor in the effective implementation of digital transformation processes. The integration of digital transformation processes into the strategic planning processes of institutions increases data analytics capacities. This process provides various benefits, including the optimization of student data management processes and the improvement of educational quality. In other words, it can be stated that corporate culture plays a significant role in encouraging and supporting digital transformation. The influence of other dimensions, including leadership, talent management, technology, and

decision-making, on digital transformation rates was found to be insignificant. This demonstrates that the success of digital transformation in higher education institutions is contingent upon the prevailing culture within the institution being receptive to data-driven decision-making and innovative technologies.

This study makes the following contributions to the existing literature:

1. This study addresses a significant gap in the existing literature by underscoring the pivotal role of organizational culture in the digital transformation processes of higher education institutions.

2. By examining the impact of other big data readiness dimensions on digital transformation, the study provides new insights on how digital transformation strategies should be developed in higher education institutions.

The following recommendations are offered for consideration by higher education institutions seeking to successfully manage their digital transformation processes:

It is advised that institutions cultivate a data-driven organizational culture and facilitate the involvement of all stakeholders in data-driven decision-making processes. It is recommended that training programs on data management and analytics be developed and implemented to enhance the knowledge and skills of staff in these areas. Leadership and Governance: It is possible to establish robust leadership structures in order to facilitate the implementation of digital transformation strategies. It is essential to identify capable managers who can spearhead digital transformation initiatives and ensure that they have access to the requisite resources. It is recommended that the technology infrastructure be strengthened by investing in modern and flexible information technology infrastructures. Advanced technologies such as cloud computing and big data analytics platforms can be integrated. Furthermore, it is advised that data-driven decision making be encouraged by providing personnel with data analytics tools in decision-making processes. Finally, it is proposed that data management processes be improved to enhance data quality.

In addition, it is suggested that talent management and training be developed through the implementation of training programs and collaborations to train personnel specialized in digital transformation and big data analytics. Furthermore, it is recommended that continuous training opportunities be offered to improve the digital skills of existing staff.

The objective of this study is to examine the influence of big data readiness levels among higher education institutions on their digital transformation rates. In the regression analysis, which employed the five dimensions of the big data readiness scale (Leadership, Talent Management, Technology, Decision Making, Organizational Culture), only the "Organizational Culture" dimension was found to significantly affect digital transformation rates. This result indicates that organizational culture plays a pivotal role in the successful management of digital transformation processes in higher education institutions.

It is recommended that future research on this topic should consider the following suggestions:

Longitudinal studies are recommended for future research in this area. Longitudinal studies can be conducted to examine the long-term effects of digital transformation processes and changes in big data readiness levels over time.

Contextual Variation Across Regional and Cultural Settings: Conducting similar studies at higher education institutions in different countries or regions allows for the examination of the effects of regional and cultural factors on digital transformation and big data readiness.

Qualitative Research: Qualitative research (e.g., case studies and in-depth interviews) can be conducted to gain a deeper understanding of the challenges faced in digital transformation processes and their impact on the day-to-day operations of higher education institutions.

Student and Academic Staff Perspective: Research can be conducted from the perspective of students and academic staff to examine the impact of digital transformation on student achievement and academic staff productivity.

REFERENCE LIST

1. Austin, C. C. (2018). A Path to Big Data Readiness. 2018 IEEE International Conference on Big Data (Big Data), 4844–4853. https://doi.org/10.1109/BigData.2018.8622229

2. Barham, H., & Daim, T. (2020). The use of readiness assessment for big data projects. Sustainable Cities and Society, 60, 102233. https://doi.org/10.1016/j.scs.2020.102233

3. Baş, T. (2010). Anket. Seçkin.

4. Boz Eravci, D. (2020). Kurumların Dijital Dönüşümü: Büyük Veri. Çalışma İlişkileri Dergisi, 11(1), Article 1. https://dergipark.org.tr/en/pub/cider/674025

5. Brynjolfsson, E., & McAfee, A. (2013). Is Your Company Ready for Big Data?

   https://hbr.org/web/2013/06/assessment/is-your-company-ready-for-big-data

6. Crawford, J., Butler-Henderson, K., Rudolph, J., Malkawi, B., Glowatz, M., Burton, R., Magni, P. A., & Lam, S. (2020). COVID-19: 20 countries' higher education intra-period digital pedagogy responses. Journal of Applied Learning and Teaching, 3(1), Article 1. https://doi.org/10.37074/jalt.2020.3.1.7

7. Daniel, B. (2015). Big Data and analytics in higher education: Opportunities and challenges. British Journal of Educational Technology, 46(5), Article 5. https://doi.org/10.1111/bjet.12230

8. Daniel, B. (Ed.). (2017). Big Data and Learning Analytics in Higher Education. Springer International Publishing. https://doi.org/10.1007/978-3-319-06520-5

9. Davenport, T. (2018). Big Data @ Work (M. Çavdar, Trans.). Harvard Business School Publising Corporation. https://www.dr.com.tr/Kitap/Big-Data-@-Work/Egitim-Basvuru/Is-Ekonomi-Hukuk/Yonetim-Is-Gelistirme-Kalite/urunno=0000000629306

10. Ebert, C., & Duarte, C. H. (2018). Digital Transformation. IEEE Software, 35, 16–21.

    https://doi.org/10.1109/MS.2018.2801537

11. García-Morales, V. J., Garrido-Moreno, A., & Martín-Rojas, R. (2021). The Transformation of Higher Education After the COVID Disruption: Emerging Challenges in an Online Learning Scenario. Frontiers in Psychology, 12. https://doi.org/10.3389/fpsyg.2021.616059

12. Hanelt, A., Bohnsack, R., Marz, D., & Antunes Marante, C. (2021). A Systematic Review of the Literature on Digital Transformation: Insights and Implications for Strategy and Organizational Change. Journal of Management Studies, 58(5), 1159–1197. https://doi.org/10.1111/joms.12639

13. Iivari, N., Sharma, S., & Ventä-Olkkonen, L. (2020). Digital transformation of everyday life – How COVID-19 pandemic transformed the basic education of the young generation and why information management research should care? International Journal of Information Management, 55, 102183.

    https://doi.org/10.1016/j.ijinfomgt.2020.102183

14. Long, P., & Siemens, G. (2011). Penetrating the Fog: Analytics in Learning and Education. EDUCAUSE Review. https://er.educause.edu/articles/2011/9/penetrating-the-fog-analytics-in-learning-and-education

15. Marr, B. (2019). Büyük Veri İş Başında (B. Gündüz, Trans.; 1st ed.). MediaCat Kitapları.

16. McAfee, A., & Brynjolfsson, E. (2012, October 1). Big Data: The Management Revolution. Harvard Business Review. https://hbr.org/2012/10/big-data-the-management-revolution

17. Mergel, I., Edelmann, N., & Haug, N. (2019). Defining digital transformation: Results from expert interviews. Government Information Quarterly, 36(4), 101385. https://doi.org/10.1016/j.giq.2019.06.002

18. Molina, H. (2019). Big-Data Readiness of Four-Year Public and Private North Carolina Higher Education Institutions [Phd. Thesis, Wilmington University].

    https://www.proquest.com/docview/2161113787/abstract/8059EBE6F5AA49D7PQ/1?accountid=14141

19. Nambisan, S., Wright, M., & Feldman, M. (2019). The digital transformation of innovation and entrepreneurship: Progress, challenges and key themes. Research Policy, 48(8), 103773. https://doi.org/10.1016/j.respol.2019.03.018

20. Picciano, A. G. (2012). The Evolution of Big Data and Learning Analytics in American Higher Education. Journal of Asynchronous Learning Networks, 16(3), Article 3. https://eric.ed.gov/?id=EJ982669

21. Priyono, A., Moin, A., & Putri, V. N. A. O. (2020). Identifying Digital Transformation Paths in the Business Model of SMEs during the COVID-19 Pandemic. Journal of Open Innovation: Technology, Market, and Complexity, 6(4), Article 4. https://doi.org/10.3390/joitmc6040104

22. Şeker, Ş. E. (2015). Büyük Veri ve Büyük Veri Yaşam Döngüleri. 2, 8.

23. Tabrizi, B., Lam, E., Girard, K., & Irvin, V. (2019). Digital Transformation Is Not About Technology. Harvard Business Review.

24. Warner, K. S. R., & Wäger, M. (2019). Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. Long Range Planning, 52(3), 326–349. https://doi.org/10.1016/j.lrp.2018.12.001

25. Webber, K. L., & Zheng, H. Y. (Eds.). (2020). Big data on campus: Data analytics decision making in higher education. Johns Hopkins University Press.

THE ROLE OF STRATEGIC AWARENESS IN STRATEGY FORMULATION: A THEORETICAL APPROACH

Prof. Valentin MOLINA MORENO

Dpto. Management-1, University of Granada, Spain, Granada

vmolina2@go.ugr.es

PhD c. Rufat MAMMADOV

Baku Engineering University, Business Administration Department

Azerbaijan, Baku

rmammadov@beu.edu.az

PhD c. Zamin BABASHOV

Baku Engineering University, Economics Department

Azerbaijan, Baku

zababashov@beu.edu.az

ARTICLE INFO	ABSTRACT
	Strategic awareness is widely viewed by most researchers as a specialized system that organizations embrace to gain a thorough understanding of their internal and external surroundings, assess their internal standing, and anticipate future conditions. Additionally, strategic awareness enables the organization to reach its objectives through strategic and organizational conduct, making it a contemporary area of focus. *The purpose of this article is to collect bibliographic information about strategic awareness for future articles. In the article strategic awareness is treated the main topic and different theoretical literatures were included for clarification what is strategic awareness.*

INTORDUCTION

Taking into consideration its importance in recognizing the internal and external environment, strategic awareness, with its different dimensions, identifies its strengths and weaknesses, capture the opportunities arising from these variables, identify threats and work to avoid them.

Strategic awareness is crucial for the organization's success, as it significantly impacts achieving exceptional performance. Leaders have the opportunity to gain insights and share experiences with peers globally, contributing to their learning and growth.

Organizations aim to utilize strategic awareness to create business opportunities and minimize the impact of environmental uncertainty. This involves enhancing their competitive position and adapting to various environmental factors to effectively manage the environment, capitalize on opportunities, and mitigate potential threats.

The company's capacity to acquire crucial information, anticipate shifts, and enhance decision-making by utilizing management information systems, is boosted by strategic awareness. This aids in making well-informed decisions and mitigating the uncertainties and challenges posed by tough competition in local and international markets. The primary objective is to assess, examine, and understand the current standings of competitors, along with their strategies and actions.

In the face of increased competition, achieving economic globalization has become a key strategic objective. As a result, the organization must keep pace with global advancements in order to effectively serve its customers by offering high-quality products at competitive prices that fulfill their requirements. Staying updated on these developments involves understanding all facets and occurrences in both the internal and external environments, and staying abreast of technological advancements, particularly in information and communication technologies, that bring about innovations in the marketing industry and influence changes in consumer preferences.

WHAT IS STRATEGIC AWARENESS?

There are many definitions of strategic awareness in the literature, some define it as a necessary ability to have administrative leadership, which requires the broadening of leaders' perceptions, the needed skill appropriate to the development and use of a package of activities, strategy understanding or mechanisms (Ibrahim and Al-Nuaimi , 2020:100).

The term "strategic awareness" emerged in 1980s and was developed as a top management term that takes into account all members of the organization, also it takes into account the role of external and internal factors (Alabdaly and Almayali, 2021:488). From the beginning strategic awareness focused on individuals and the strategic priorities of key persons. It has been presented as a concept expressing the degree of awareness (Hambrick, 1981:263), but the organizational level was the main focus to use it because of its effective strategy implementation and the assumptions that organizational managers have a well and general understanding or awareness in organization's current strategies (Davis et al, 2012:322). That is why, strategic awareness is a topic that requires to be improved and developed over time for the organizations to be able to monitor the data they receive from the environment and as the consequence to use in goal setting (Alabdaly and Almayali, 2021:489).

Fehr and Huck (2013) conducted a comparison between rationality and its relation to the topic and determined that it is inferior to rationality (Fehr and Huck, 2013). They stated that topics demonstrate strategic awareness when they are perceived as part of a game, meaning that managers must realize that strategizing involves considering the actions of others. It is important to note that grasping the rules does not automatically imply strategic awareness (Al-Badayneh, 2021:47). Essentially, individuals can outline the potential outcomes of various actions, but they may not fully comprehend that effective gameplay requires taking into account the decisions of others. Eccles and colleagues (2007) defined strategic awareness as the managerial procedure of evaluating the organization's internal and current resources, as well as their capabilities, and understanding the perception of all regulations and directives (Eccles et al., 2007).

The definition of strategic awareness varies among researchers and authors. According to Thompson (1995), it refers to managers' method of gathering information about the organization's current status, potential for change, and all internal and external environmental

factors. Conversely, strategic awareness has also been described as a capability. Cognitive empowerment enables organizations to develop a distinct vision and a framework built on questioning, research, value transformation, and enhanced mental capacity (Halis et al., 2010:160).

Bowman (2017) in his article "The Magic of Strategic Awareness," identified strategic awareness as the process of creating access to non-analytical data and integrating internal knowledge into the strategic decision-making process.

Aytar, on the other hand, identified strategic awareness as the level of consciousness that must be understood in order to effectively research the stages of the strategic management process (Aytar, 2019:3484), and based on the above, researchers say that strategic awareness is the degree of awareness of the organization about the contingencies in the environment, and that decision makers can research any problems that may emerge in the future. They saw it as the ability to foresee the impact of a change, and to take required measures with a set of skills (Reflection, Reframing, Systems Thinking, Orientation Learning).

Successful strategy implementation relies on the premise that all organizational members share a clear and unified understanding of the organization's existing strategies (Al-Badayneh, 2021:48).

Conversely, Gibb and Scott defined strategic awareness as the capability to assess the overall impact of any change (Gibb and Scott, 1985). This involves not only understanding the immediate effects of new developments but also considering their long-term consequences. For instance, one might explore a new market opportunity by examining its impact on existing resources and determining the necessary adjustments or acquisitions. However, further analysis would involve predicting what might happen if this new market line becomes extremely successful. Would it necessitate a new factory? How would this be managed? Are there individuals within the organization capable of handling this? How would the business owner's influence affect the management resources and the manager's lifestyle? How would this impact other ongoing ideas?

We can see in the literature that some researchers associate strategic awareness with strategic intention. Tughba stated that strategic awareness expresses the general strategic intention regarding the mission, the purpose, targets, fundamental processes, system, and organizational culture that will facilitate the achievement of goals. (Tughba, 2019).

Seifoori defined strategic awareness as the decision maker's ability to be thoroughly informed about all aspects of the organization and its external environment. This includes the ability to avoid risks, seize opportunities, and possess knowledge and experience regarding the internal environment and understanding the organization's existing human resources (Seifoori, 2020: 116).

Thompson and Martin (2022) provided a definition of strategic awareness, highlighting its importance in identifying the organization's strategic position and relative success. This involves gaining insight into the organization's operations, its competitive relationships, understanding the external environment, and acknowledging the necessity for change (Al-Mohammadi and Al-Dulaimi, 2022).

According to other scholars, strategic awareness is closely linked to environmental factors. Kazem et al. (2022) characterized strategic awareness as the degree of openness, a methodical

comprehension of the environment, awareness of prevailing conditions, and understanding how to dynamically compete to fulfill its requirements (Kazem et al., 2022:54).

Ward and Haase approached strategic awareness as a process, viewing it as the application of consciousness to maintain an ever-increasing moment-by-moment awareness of thoughts, feelings, experiences, and reality (Ward and Haase, 2016:433).

Some researchers, such as Young (2019), have linked strategic awareness with leadership and the necessary skills. Young evaluated strategic awareness as crucial for skilled decision-making among leaders, enabling them to discern emerging options in complex environments and mitigate inherent risks (Young, 2019).

Pencarelli et al. (2009) and other researchers have emphasized the importance of strategic awareness as a crucial skill in the decision-making process of small businesses, particularly in assisting entrepreneurs with strategy formulation and determining the most effective approach to implementing strategies (Pencarelli et al., 2009).

According to some authors, strategic awareness is defined as the organizational capability to effectively utilize resources and leverage existing infrastructure, such as information systems and strategic information systems. It also encompasses the organization's ability to thoroughly scan the environment to address hyper-competition (Al Haraisa, 2022:44).

Özdaşlı and Kandemir (2016:131) defined strategic awareness as the awareness of environmental factors' impacts and possessing knowledge regarding competition, development, and transformation.

Tashgit et al. (2023) highlighted the importance of strategic awareness in influencing strategic agility, deeming it essential for creating competitive strategies that can adeptly address environmental influences.

DIMENSIONS OF STRATEGIC AWARENESS

Strategic awareness is characterized as a framework that empowers strategic leaders to reassess fundamental competition and unique advantages through deliberation. It involves understanding how to identify alternative strategies in response to competitors' strategies, how to leverage them, and how to strategically think about these issues (Shishko, 2010). Due to its critical role in achieving organizational goals, strategic awareness is widely recognized by researchers as essential to measure and study through various research approaches. In their studies, Hambrick (1981), Pisapia et al. (2005), Halis et al. (2010), Turkay et al. (2012), and Yıldız (2019) have shown that strategic awareness includes aspects like introspection, changing perspectives, holistic thinking, and goal-oriented learning.

Reflection: Reflection involves the ability to synthesize logical and rational thought, drawing on perceptions, experiences, and information to assess past events and formulate intuitive principles for guiding future actions (Pisapia et al., 2005). This cognitive process includes understanding the reasons behind successful decisions by employing double-loop or reflective learning, incorporating feedback from knowledge and past experiences. Strategically aware managers establish a framework that enables them to visualize and comprehend a range of challenges, adapting by linking disparate elements and generating alternative responses (Dhir et al., 2018). Even in situations where managers lack complete information, reasoned decision-making facilitates the identification of optimal actions and predictions (Pisapia et al., 2009).

Reframing(R): The term describes the capacity to switch focus between various viewpoints, frameworks, and mental models in order to create fresh insights and choices for taking action (Pisapia et al., 2005). It entails the process of restructuring or reinterpreting organizational tactics in times of crisis or transformation. Leaders can abandon outdated ideas and envision new functions (Lahtinen, 2020). By broadening their outlook and improving their ability to act, leaders become better equipped to grasp opportunities and challenges, devise alternative action plans, and adeptly navigate the increasingly uncertain business landscape characterized by unprecedented and unexpected changes (Mukherjee et al., 2020).

Systems Thinking (ST): The concept of systems thinking goes beyond focusing on individual actors, events, and underlying structures to comprehend the patterns, forces, properties, and internal relationships that influence systems (Bonn, 2005: 338). It stresses the importance of a comprehensive understanding of systems, including their behavior and evolution over time, as well as the feedback mechanisms that propel these changes. This method is essential for grasping organizational dynamics, administrative processes, and their interconnections, and for uncovering practical insights (Halis et al., 2010: 162).

Learning Orientation (LO): According to Argyris (1976), learning is crucial for enhancing decision-making effectiveness within organizations. The absence of standardized learning processes leads to undetected or uncorrected errors, resulting in organizational inefficiency due to a lack of shared knowledge or its development among members (Martinez et al., 2020). There are three commonly associated values with a learning orientation:

- **Commitment to Learning:** This refers to the organization's emphasis on the value of learning and its commitment to understanding the causes and effects of its actions (Aloulou, 2018).

- **Open-Mindedness:** The above viewpoint enables departments to go beyond their current perspectives, resulting in not just ongoing enhancements but also a more profound comprehension of their purpose and influence (Kazem et al., 2022).

- **Shared Vision:** Shared vision measures the extent to which an organization develops and maintains a universally understood organizational focus. It enhances motivation and purpose among organizational members, providing them with a clear sense of direction and purpose. Without a shared vision, individuals are typically less motivated to engage in learning and collective efforts (Özşahin et al., 2011).

According to Kazem et al. (2022:54), departments within organizations may possess specific capabilities that enable them to anticipate future directions and effectively adapt to changing environments, thereby promoting prosperity and sustainability. This capability hinges on organized departments' awareness of aligning with these changes. Elements crucial to departmental awareness in this context include:

- *Expanded awareness:* Expanded awareness refers to the ongoing experiences that enable managers to adapt their decision-making, responses, and learning capabilities in order to navigate competitive processes and achieve favorable outcomes (Ward and Haase, 2016; Mehmood et al., 2023). The above viewpoint enables departments to go beyond their current perspectives, resulting in not just ongoing enhancements but also a more profound comprehension of their purpose and influence (Kazem et al., 2022).

- *Filtering and sensory perception:* The methods by which different parts of organizations interpret events are influenced by their expectations and perceptions of real issues (Kazem et al., 2022). Senior management's high level of consciousness within organizations reflects their ability to process and filter situations as they are perceived, shaped by filters that influence their behavior, thoughts, and interactions with new experiences.

- *Awareness:* The idea of being aware, which is connected to consciousness, is commonly known as mental management, combining scientific and artistic elements. It incorporates management theories that help in shaping strategies to exert influence on others and comprehend how external experiences affect them (Ward, 2016:383).

- *Human experience:* The knowledge, thought processes, and perspectives collected in an organization change as time passes (Ward, Haase, 2016:4). These components represent the organization's gathered knowledge, its cognitive processes, and its obtained points of view, all of which influence its decision-making and behaviors (Steiner, 1996:27).

The four dimensions of strategic elements, as mentioned by most researchers, are internal strategic consciousness, external strategic consciousness, current strategic consciousness, and forward-looking strategic consciousness (Pencarelli, et al. 2009), (Thompson and Martine 2010). Other studies also support the validity of these dimensions.

- *Internal strategic awareness:* According to Pencarelli et al. (2009), internal strategic consciousness involves the awareness of internal resources and expertise within the corporate system and their potential to be transformed into a competitive advantage over competitors. Resources encompass all assets, capabilities, organizational processes, and information controlled by a company that facilitate the implementation of strategies aimed at enhancing efficiency and effectiveness. These resources are viewed as fundamental sources of competitive advantage (Barney, 2000).

- *External strategic awareness:* It encompasses the competitive, social, political, and economic characteristics of the context, which significantly influence the strategic actions of enterprises (Savelli, Splendiani, 2009). This awareness of the environment is crucial for understanding and navigating the external factors that impact organizational strategies.

- *Current strategic awareness:* Refers to the ability of entrepreneurs to comprehend their current market position (where they stand) (Pencarelli et al., 2009). This understanding is essential for strategic decision-making and planning within the competitive landscape.

- *Forward-looking strategic awareness:* Meaning where you aim to be in the future or tomorrow (Thompson and Martine, 2010). This refers to the strategic vision and goals that entrepreneurs or organizations set to achieve in the coming days, months, or years.

Other researchers, such as Ibrahim and Al-Nuaimi (2020), categorized the dimensions of strategic awareness into 4 groups. These are typically outlined as follows:

A - Strategic Diagnosis

Diagnosis can be defined as "a set of behaviors aimed at identifying defects and addressing them to achieve specific goals." Al-Hashemi (2006) described diagnosis as "an operational mechanism involving the analysis of both internal and external environmental variables" (Al-Hawary and Al-Hamwan, 2017: 278). It involves "the ability to discern the strengths, weaknesses, opportunities, and threats within the organization's external environment" (Al-Hashemi, 2006: 58).

B - Strategic evaluation

It refers to the process of "evaluating and analyzing alternative courses of action, articulating futuristic concepts, and reformulating them in a manner that is comprehensible and easily communicable to managers within the organization." This involves questioning aspects of the implementation process and assessing the reliability and competence of leaders (Ibrahim and Al-Nuaimi, 2020:103).

C- Understanding

This refers to "the capacity to absorb and comprehend information and effectively disseminate it to followers, thereby enhancing their ability and influence to adapt to rapidly changing environmental conditions." Understanding the leadership of all internal and external environmental variables entails a comprehensive awareness of environmental changes. In essence, it involves leveraging opportunities and mitigating threats by assimilating new and current information and data, and integrating them for use in future environmental change scenarios. This process aids in comprehending strategies, goals, vision, and mission of the organization (Fragouli, 2016: 81).

D- Reaction

This means "being aware of all external events, including challenges in the external environment, and responding to challenges that have arisen in previous years" (Gitsham, 2012:4). It refers to "a series of decisions and actions aimed at formulating and implementing long-term plans designed to achieve organizational goals and align with the environment." Rapid responsiveness reflects strategic flexibility in mobilizing resources to adapt to environmental changes (Hunitie, 2018: 324).

THE IMPORTANCE OF STRATEGIC AWARENESS

The rapid development and increasing openness in the business landscape have intensified competition among organizations striving for maximum success and distinction. As these organizations embrace modern methods, effective management and continuity have become paramount. However, the contemporary business environment also faces numerous threats and challenges that jeopardize competitiveness, leading to inconvenience and complexity for businesses. Addressing these challenges requires effective programs that guide organizations in creating strategies to secure their competitive edge.

Organizations are seeking new and unconventional approaches to strengthen their competitive position and secure the longevity and success of their business. This involves exploring their environment, leveraging necessary tools to enhance their knowledge resources, navigating through changes and advancements, and continuously improving their operational methods and systems. Understanding their distinctiveness and competitive advantage has thus become increasingly crucial, prompting organizations to stay informed about developments and innovations within and around their operational sphere (Al-Mohammadi and Al-Dulaimi, 2022:8169).

Strategic awareness plays a pivotal role in enhancing an organization's competitive performance by mitigating risks that hinder goal achievement. The concept creates an environment that is favorable for creativity, allowing organizations to take advantage of advancements in technology. By effectively adapting to these advancements, organizations can

use them to tackle survival challenges and attain strategic success. Strategic awareness thus represents a modern concept with substantial potential and numerous possibilities for organizational advancement.

Many researchers have emphasized the significance and influence of strategic awareness on organizational performance. According to Hambrick (1978), strategic awareness can positively impact organizational performance, a viewpoint supported by scholars such as Andrews (1971) and Bourgeois (1978). Conversely, strategic awareness can also have negative implications, as noted by researchers like Quinn (1977) and Mintzberg (1978). These perspectives highlight the dual nature of strategic awareness, illustrating its potential to either enhance or hinder organizational outcomes depending on how it is applied and managed.

Pencarelli et al. (2009) mentions the importance of strategic awareness as follows:

- Internal and external awareness are crucial for achieving strategic goals as they serve as the bridge between a decision maker's vision and their intuitive understanding of the organization's environment.

- Decision makers can use strategic awareness to assess the consistency and validity of their decisions, particularly when there are gaps in organizational planning.

- The determination of strategic goals is facilitated by strategic awareness in decision making.

- Strategic decision-making is significantly influenced by strategic awareness.

According to Dyczkowska and Dyczkowski (2012), a high level of employee empowerment combined with strategic awareness enhances employee motivation and commitment to organizational strategy.

Fehr and Huck (2014) highlighted that strategic awareness can provide substantial benefits across various aspects of life. For instance, in retail financial markets, consumers' lack of understanding of advisors' financial incentives can lead to significant harm (Inderst and Ottaviani, 2012; Chater, Huck, and Inderst, 2010).

As previously mentioned, strategic awareness influences both the external and internal environments of an organization, impacting its performance and market position significantly. It serves as a motivational factor for improving employee behavior, driving them to perform at their best to achieve organizational goals.

CONCLUSION

Strategic awareness refers to the capacity of the organizational decision-maker to have complete awareness of all aspects related to the organization and its external surroundings, allowing them to mitigate risks and capitalize on opportunities. This includes comprehending the internal environment, which involves having information and knowledge about the human resources of the organization. Thus, strategic awareness is a comprehensive concept that covers all elements and departments of the organization to achieve its goals.

It is evident that action inputs, such as those outlined in the program, can significantly influence this process. Generally, consulting and offering proactive training and educational recommendations can foster strategic awareness, particularly when the focus is directed exclusively toward the specific development issues of the owner-manager.

REFERENCE LIST

1. Al Haraisa, Y. E. (2022). The Impact of Strategic Alignment and Strategic Awareness on Strategic Performance: Evidence from Jordan. International Journal of Academic Research in Accounting, Finance and Management Sciences, 12(4), 42-55.

2. Alabdaly, D., & Almayali, E. (2021). The Impact of Strategic Awareness on Organizational Readiness: An Analytic Research of the Opinions of the Sample of Top Leaderships in Private Colleges in the Provinces of the Al-Furat Al-Awsat in Iraq. Webology, 18(2).

3. Al-Badayneh, G. (2021). The Impact of Strategic Awareness on Enhancing Organizational Immunity System: An Applied Study on Jordanian Food Manufacturing Companies. International review of management and marketing, 11(2), 47-58.

4. Al-Hashemi, and Ben Wahid, (2006): "An attempt to diagnose the external environment to build the strategy in the Algerian Economic Corporation", University of Mohamed Boudiaf in M'sila, Faculty of Economic Sciences.

5. Al-Hawary, S. I. S., & Al-Hamwan, A. M. (2017). Environmental analysis and its impact on the competitive capabilities of the commercial banks operating in Jordan. International Journal of Academic Research in Accounting, Finance and Management Sciences, 7(1), 277-290.

6. Al-Mohammadi, A. S. O., & Al-Dulaimi, A. A. O. (2022). The Impact Of Strategic Awareness In The Competitiveness Of Business Organizations Field Research In Asia cell For Cellular Communications. Journal of Positive School Psychology, 6(8), 8169-8180.

7. Aloulou, W. J. (2018). Studying the influences of learning orientation and firm size on entrepreneurial orientation-firm performance relationship in Saudi context. Middle East Journal of Management, 5(2), 137-160.

8. Andrews, K. R. (1971). Theconcept of corporate strategy. Dow-Jones Irwin, Homewood.

9. Aytar, O. (2019). Kobi yöneticilerinin stratejik bilinç ve stratejik yönetim algıları üzerine bir içerik analizi. MANAS Sosyal Araştırmalar Dergisi, 8(4), 3483-3499.

10. Barney, J. B. (2000). Firm resources and sustained competitive advantage. In Economics meets sociology in strategic management (pp. 203-227). Emerald Group Publishing Limited.

11. Bonn, I. (2005). Improving strategic thinking: a multilevel approach. Leadership & Organization Development Journal, 26(5), 336-354.

12. Bourgeois III, L. J. (1978, August). Economic Performance and Dominant Coalition Agreement on Means Versus Ends in Second Order Strategy Making. In Academy of Management Proceedings (Vol. 1978, No. 1, pp. 101-105). Briarcliff Manor, NY 10510: Academy of Management.

13. Bowman, S. (2017). The Magic of Strategic Awareness.

14. Chater, N., & Steffen, H. (2010). Roman Inderst. 2010. Consumer Decision Making in Retail Financial Services, Report prepared for SANCO/EC.

15. Chen, C. Y., Huang, H. H., & Wey, S. C. (2017). The mediating roles of differentiation strategy and learning orientation in the relationship between entrepreneurial orientation and firm performance. Corporate Management Review, 37(1), 1-40.

16. Davis, P. S., Allen, J. A., & Dibrell, C. (2012). Fostering strategic awareness at an organization's boundary. Leadership & Organization Development Journal, 33(4), 322-341.

17. Dhir, S., Dhir, S., & Samanta, P. (2018). Defining and developing a scale to measure strategic thinking. Foresight, 20(3), 271-288.

18. Dyczkowska, J., & Dyczkowski, T. (2015). An Influence of Strategic Awareness on Management Control: Evidence from Polish Micro, Small and Medium-sized Enterprises. Central European Management Journal, 23(1), 4-32.

19. Eccles, R. G., Newquist, S. C., & Schatz, R. (2007). Reputation and its risks. Harvard Business Review, 85(2), 104.

20. Fehr, D., & Huck, S. (2013). Who Knows It is a Game?: On Rule Understanding, Strategic Awareness and Cognitive Ability. WZB.

21. Fehr, D., & Huck, S. (2016). Who knows it is a game? On strategic awareness and cognitive ability. Experimental Economics, 19, 713-726.

22. Fragouli, E. (2016). Leading business organizations in the global era: decision making in chaos and crisis situations. J Econ Bus, 19(2), 73-89.

23. Gibb, A., & Scott, M. (1985). Strategic awareness, personal commitment and the process of planning in the small business. Journal of Management Studies, 22(6), 597-631.

24. Gitsham, M. (2012). Leadership in a Rapidly Changing World: How business leaders are reframing success. Ashridge Business School.

25. Halis, M., Sariisik, M., & Turkay, O. (2010). Institutional Strategic Consciousness and its reflections. Research on qualified hotels in Istanbul. Journal of Global Strategic Management, 8, 160-170.

26. Hambrick, D. C. (1981). Strategic awareness within top management teams. Strategic Management Journal, 2(3), 263-279.

27. Hunitie, M. (2018). Impact of strategic leadership on strategic competitive advantage through strategic thinking and strategic planning: a bi-meditational research. Verslas: teorija ir praktika, 19(1), 322-330.

28. Ibrahim, I. R., and Al-Nuaimi, S. A. (2020). The Role of Shared Governance and Strategic Awareness in Reducing Barriers to Achieving Strategic Objectives-Field Research in the Ministry of Higher Education and Scientific Research. International Journal of Research in Social Sciences And Humanities, 10(4), 100-111.

29. Inderst, R., & Ottaviani, M. (2012). How (not) to pay for advice: A framework for consumer financial protection. Journal of Financial Economics, 105(2), 393-411.

30. Kazem, J. R., Abbas, Y. A., Sabti, Y. M., Ali, G., & Nasser, R. H. (2022). The effect of strategic awareness on creative performance an analytical study of the opinions of faculty members at a university level. South Asian Journal of Social Sciences and Humanities, 3(3), 53-72.

31. Lahtinen, S. (2020). Reframing the Role of Companies in Sustainability: Toward business sustainability transitions. \

32. Martinez, J. E. V., Serna, M. D. C. M., & Montoya, N. P. (2020). Dimensions of learning orientation and its impact on organizational performance and competitiveness in SMEs. Journal of Business Economics and Management, 21(2), 395-420.

33. Mehmood, W., Mohd-Rashid, R., Abdullah, Y., Patwary, A. K., & Aman-Ullah, A. (2023). Inclusive mapping of initial public offerings: a bibliometric and literature review study. Quality & Quantity, 57(1), 655-700.

34. Mintzberg, H. (1978). Patterns in strategy formation. Management science, 24(9), 934-948.

35. Mukherjee, M., Ramirez, R., & Cuthbertson, R. (2020). Strategic reframing as a multi-level process enabled with scenario research. Long Range Planning, 53(5), 101933.

36. Özdaşlı, K., & Kandemir, H. (2016). DAĞCILIK SPORUNUN STRATEJİK BİLİNCE ETKİSİ: BİR TIRMANIŞ SENARYOSU ÜZERİNDEN DEĞERLENDİRME. Çatalhöyük Uluslararası Turizm ve Sosyal Araştırmalar Dergisi, (1), (1), 131-146.

37. Pencarelli, T., Savelli, E., & Splendiani, S. (2008, October). Strategic awareness and growth strategies in small sized enterprises (SEs). In paper presentato in occasione della 8th Global Conference on Business & Economics (pp. 81-98).

38. Pisapia, J., Pang, N. S. K., Hee, T. F., Lin, Y., & Morris, J. D. (2009). A Comparison of the Use of Strategic Thinking Skills of Aspiring School Leaders in Hong Kong, Malaysia, Shanghai, and the United States: An Exploratory Study. International Education Studies, 2(2), 46-58.

39. Pisapia, J., Reyes-Guerra, D., & Coukos-Semmel, E. (2005). Developing the leader's strategic mindset: Establishing the measures. Leadership Review, 5(1), 41-68.

40. Quinn, J. B. (1977). Strategic goals: Process and politics. Sloan Management Review, 19(1), 21-37.

41. Seifoori, Z. (2020). Negotiated Strategic Awareness-Raising at Postgraduate Level: Contributions to Reading Comprehension and Content Retention. Iranian Journal of Language Teaching Research, 8(2), 115-132.

42. Şişko, T. (2010). *Path Dependence in Strategic Management and Application in a Logistics Firm.* (Doctoral dissertation, Graduate School of Natural and Applied Sciences).

43. TAŞGİT, Y. E., Horuz, İ., Kömür, T., & YAVUZ, A. (2023). Stratejik Farkındalık ve Stratejik Çeviklik Arasındaki İlişkide Stratejik Yeteneğin Aracılık Rolü. Sosyoekonomi, 31(55), 297-320.

44. Thompson, J. L. (1995). Strategic management: awareness and change. Journal of the Operational Research Society, 46(11), 1398-1398.

45. Tugba, C. (2019). "Strategic Awareness, Sector Analysis, the Basic Components of Strategy and the Relationships Between Performance: a Qualitative Analysis (Doctoral dissertation, Master Thesis Duzce University Institute of Social Sciences Division of Business Management).

46. Turkay, O., Halis, M., Sariisik, M., & Calman, I. (2012). Effects of strategic consciousness and strategic planning on business performance: A comparative study of the industries in Turkey. African Journal of Business Management, 6(32), 9188.

47. Wang, C. L. (2008). Entrepreneurial orientation, learning orientation, and firm performance. Entrepreneurship theory and practice, 32(4), 635-657.

48. Ward, S. F., & Haase, B. (2016). Conscious leadership. AORN journal, 104(5), 433-e1.

49. Yıldız, İ. (2019). The role of Strategic Awareness in the relationship between internal entrepreneurship and innovation management.

50. Young, J. (2019). Mindfulness-Based Strategic Awareness Training-MBSAT. Mindfulness Training for Today's World of VUCA (Volatility, Uncertainty, Complexity and Ambiguity), White Paper, p3. Note: this references are translated from Arabic language to English, 1, 32.

HİSTORİCAL CHANGE OF PER CAPİTA CARBON DİOXİDE EMİSSİONS İN AZERBAİJAN

Shaig KAZIMOV

Azerbaijan State University of Economics (UNEC), Baku,

kazimov.shaigh@mail.ru

Elchin SULEYMANOV

National Observatory on Labor Market and Social Protection Affairs

elchin.b.suleymanov@sosial.gov.az

ARTICLE INFO	ABSTRACT
	This article provides detailed information on per capita CO2 emissions in Azerbaijan, the factors influencing these levels, and the strategies used to reduce emissions. The aim is to understand various approaches in combating climate change and identify the most effective solutions. Azerbaijan, located at the crossroads of Europe and Asia, has a diverse economy significantly impacted by its abundant oil and gas reserves. The extraction and export of these fossil fuels have been crucial for the country's economic growth. However, this reliance on fossil fuels also presents challenges in terms of CO2 emissions. As Azerbaijan continues to modernize and industrialize, monitoring and managing its per capita CO2 emissions becomes increasingly important. This study aims to provide a thorough analysis of per capita CO2 emissions in Azerbaijan. It will examine historical trends, current levels, and major emission sources. Examples include the rapid growth of the manufacturing industry following the discovery of oil on the Absheron Peninsula in the 1840s, the revolutions in Russia at the beginning of the last century, the crisis caused by the First World War, the rapid industrialization during and after the Second World War, the stagnation following the collapse of the Soviet Empire, and the recent pandemic. Additionally, it is appropriate to analyze this data by dividing it into several periods. For a more detailed analysis of these periods, quarterly data rather than annual data may be more effective.

1. INTRODUCTION

Per capita carbon dioxide emissions is a key indicator in modern ecological and climate change research. This metric reflects the annual CO2 emissions per inhabitant of a country or region, usually measured in tons. CO2 emissions primarily result from the burning of fossil fuels, industrial processes, and agricultural activities. Per capita CO2 emissions, resulting from the burning of fossil fuels, industrial processes, and agricultural activities, are a crucial indicator of a country's economic development, energy consumption patterns, and the lifestyle of its population. The amount of per capita CO2 emissions varies significantly from country to country. Industrialized and high-income countries generally have higher figures, as they consume more energy and have larger industrial activities. However, increasing CO2 emissions are also observed in developing countries, linked to their economic growth and industrialization. Various measures are being implemented globally to reduce per capita CO2 emissions. Expanding renewable

energy sources, increasing energy efficiency, electrifying transportation, and deploying carbon capture and storage technologies are just a few of the steps being taken in this direction. International agreements and national policies also play a crucial role in combating climate change.

As the world confronts the urgent issue of climate change, it is essential to understand the patterns and disparities in carbon dioxide (CO_2) emissions. CO_2, a major greenhouse gas, significantly influences global warming and climate instability. While there has been substantial focus on overall national emissions and their role in climate change, examining emissions on a per capita basis offers a more detailed perspective. Analyzing CO_2 emissions per capita provides insights into the emission levels experienced by individuals in different countries, presenting a clearer understanding of each nation's relative contribution to global carbon output. This approach reveals differences between high-income and low-income countries and assesses the effectiveness of various national strategies and technological innovations aimed at reducing carbon footprints.

This article aims to investigate the trends and variations in per capita CO_2 emissions globally. By examining recent data and emerging trends, we seek to identify the factors influencing these variations, such as economic development, energy use, and policy measures. The paper will also explore the implications of these insights for global climate strategies and the development of fair solutions to the climate crisis.

Through an in-depth review of current data and an analysis of contributing factors, this study enhances our understanding of global CO_2 emission patterns and informs better decision-making in climate policy and sustainable development.

This article will provide extensive information on per capita CO2 emissions in Azerbaijan, the factors influencing these indicators, and the strategies employed to reduce emissions. The goal is to understand the different approaches in the fight against climate change and identify the most effective solutions.

2. LİTERATUR REVİEW FOR AZERBAİJAN PER CAPİTA CARBON DİOXİDE EMİSSİONS

The study of per capita CO2 emissions in Azerbaijan is enhanced by a wide range of scholarly research that explores different facets of economic growth, energy consumption, and environmental sustainability. This literature review consolidates key findings from relevant studies to offer a comprehensive understanding of the factors affecting CO2 emissions in Azerbaijan and the potential strategies for their reduction. Hodrick and Prescott's seminal work on business cycles, though not directly related to CO2 emissions, provides a foundational econometric approach that can be useful in analyzing economic fluctuations and their impact on environmental indicators (Hodrick & Prescott, 1997). Their methodology has been widely adopted and adapted in subsequent empirical research, including studies on environmental economics. Mikayilov, Galeotti, and Hasanov (2018) specifically address the relationship between economic growth and CO2 emissions in Azerbaijan. Their findings indicate that economic expansion, driven primarily by the oil and gas sector, has led to increased CO2 emissions. This study underscores the need for sustainable growth strategies that balance economic development with environmental preservation.

Gurbanov (2021) explores the role of natural gas consumption in reducing CO2 emissions. His research suggests that while natural gas is a cleaner alternative to other fossil fuels, its

consumption alone is insufficient to achieve significant reductions in CO2 emissions. This highlights the necessity for a diversified energy portfolio that includes renewable energy sources. Huseynli (2024) investigates the relationship between CO2 emissions and research and development (R&D) activities in Azerbaijan. The study reveals that increased investment in R&D can lead to technological advancements that reduce CO2 emissions, emphasizing the importance of innovation and technological progress in environmental sustainability. Hasanov, Mukhtarov, and Suleymanov (2023) provide insights into the role of renewable energy and total factor productivity in reducing CO2 emissions. The study reveals that increased investment in R&D can drive technological advancements that reduce CO2 emissions, highlighting the critical role of innovation in achieving environmental sustainability. Hasanov, Mukhtarov, and Suleymanov (2023) offer insights into the role of renewable energy and total factor productivity in cutting CO2 emissions. Their research introduces a new theoretical framework combining these elements, showing that a shift towards renewable energy and productivity improvements can significantly lower CO2 emissions in Azerbaijan. Dilanchiev, Umair, and Haroon (2024) examine the causal relationship between renewable energy consumption, carbon emissions, and economic growth in the South Caucasus countries, including Azerbaijan. Their findings support the idea that adopting renewable energy can decouple economic growth from CO2 emissions, providing a sustainable development path. Mukhtarov et al. (2022) present evidence on the impact of renewable energy consumption on CO2 emissions in an oil-rich economy like Azerbaijan. Their study confirms that increasing the share of renewables in the energy mix can effectively reduce carbon emissions, reinforcing the advantages of transitioning to cleaner energy sources. Vidadili et al. (2017) discuss the shift to renewable energy and sustainable energy development in Azerbaijan. They argue that a comprehensive policy framework and substantial investments in renewable energy infrastructure are essential for achieving sustainable energy goals and reducing CO2 emissions. Brizga, Feng, and Hubacek (2013) conduct an IPAT (Impact, Population, Affluence, and Technology) analysis of CO2 emissions in the former Soviet Union, including Azerbaijan. Their study identifies key drivers of emissions and provides a comparative perspective on the region's environmental challenges and progress.

This review highlights the complex nature of CO2 emissions in Azerbaijan, shaped by economic activities, energy consumption patterns, and policy measures. The collective insights from these studies emphasize the critical need for integrated approaches that include economic, technological, and policy dimensions to effectively address CO2 emissions challenges and promote sustainable development.

3. THE AMOUNT OF CARBON DİOXİDE PER CAPİTA İN AZERBAİJAN

The amount of carbon dioxide (CO2) emissions per capita is a significant metric for assessing the environmental impact of a nation's activities, particularly in the context of climate change and sustainable development. The amount of carbon dioxide (CO2) emissions per capita is a significant metric for assessing the environmental impact of a nation's activities, especially in the context of climate change and sustainable development. In Azerbaijan, a country with a rapidly developing economy and a unique energy landscape, understanding per capita CO2 emissions is crucial for formulating effective environmental policies and strategies. Azerbaijan, located at the crossroads of Europe and Asia, has a diverse economy heavily influenced by its rich oil and gas reserves. The exploitation and export of these fossil fuels have been central to the country's economic growth. However, this dependence on fossil fuels also poses challenges in terms of CO2 emissions. As Azerbaijan continues to modernize and industrialize, monitoring and managing its per capita CO2 emissions becomes increasingly important.

It will explore the historical trends, current levels, and the primary sources of emissions. Additionally, the study will examine the impact of economic activities, energy consumption patterns, and population growth on CO2 emissions. The findings will offer valuable insights into the effectiveness of existing environmental policies and highlight areas that require further attention and improvement. By understanding the dynamics of per capita CO2 emissions in Azerbaijan, policymakers, researchers, and stakeholders can better address the challenges of reducing greenhouse gas emissions and advancing towards a more sustainable future. This article contributes to the broader discourse on climate change mitigation and sustainable development by providing a focused examination of Azerbaijan's CO2 emissions per capita.

4. DATA AND EMPİRİCAL ANALYSİS CARBON DİOXİDE PER CAPİTA (TONS) İN AZERBAİJAN

Data: The amount of carbon dioxide per capita (tons) in Azerbaijan was included in this study for econometric analysis based on data from 1860 to 2023. First, let's analyze the trend graph of the carbon dioxide content over the years:

Figure 1. Azerbaijan carbon-dioxide emissions per capita, 1860-2023
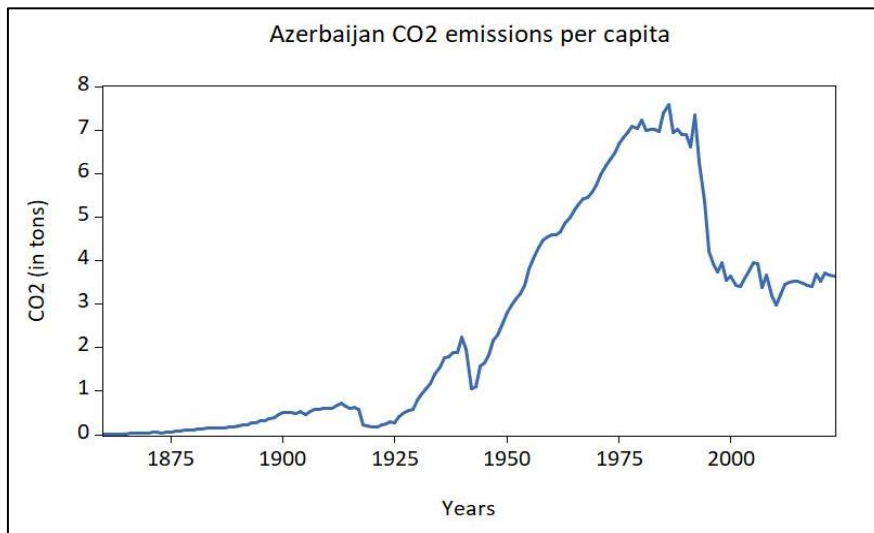
As can be seen from the graph above, although there is an increasing trend every year since 1860, in general, the breaks in several places are drawing attention. The first of them covers the years 1914 and 1918. It is also clear from history that during those times, when Azerbaijan was under the occupation of the Russian Empire, it entered the First World War as part of the empire, although not itself. Also, the well-known revolution and events that engulfed the empire at that time lowered the industrial production that had been increasing in our country since the 1840s. Azerbaijan's declaration of independence in 1918 and fighting for this independence also caused this break. However, the occupation of Azerbaijan by the Soviet Empire in 1920 and the increase of industrialization in the subsequent periods led to an increase in CO2 emissions again until 1940. Similarly, when looking at the graph, a small decrease is again accompanied by a decrease in industrial production in 1940 and 1944, when a workforce of 640,000 people was involved in World War II. After that, until the late 80s and early 90s, dramatic armor is the most prominent part of the chart. The emission, which was more than 7 tons at the beginning of the years of independence, decreased sharply until the early 2000s and continues with a stability between 3 and 4 tons until today.

71

The model and analysis: Initially, the database was checked for trend dependence and stationarity. According to the results of the Augmented Dickey-Fuller test (t_statistic = -0.897) even according to the 10% significance level, non-stationarity is not visible in the time series. Also, as can be seen from the equation below, there is no dependence on the trend and the 1st-order lag.

Null Hypothesis: AZ_CO2_PER_CAPITA has a unit root		t-Statistic	Prob.*
Exogenous: Constant, Linear Trend			
Lag Length: 1 (Automatic - based on SIC, maxlag=13)			
Augmented Dickey-Fuller test statistic		-0.897117	0.9529
Test critical values:	1% level	-4.015700	
	5% level	-3.437801	
	10% level	-3.143138	
*MacKinnon (1996) one-sided p-values.			

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AZ_CO2_PER_CAPITA(-1)	-0.011099	0.012372	-0.897117	0.3710
D(AZ_CO2_PER_CAPITA(-1))	0.243425	0.077646	3.135045	0.0020
C	0.027930	0.038140	0.732297	0.4651
@TREND("1860")	0.000207	0.000638	0.323976	0.7464

Similarly, when the stationarity is checked by the Phillips-Perron stationarity test, it is also observed that there is no dependence on the trend and the first order lag in the time series. The KPSS test (Kwiatkowski-Phillips-Schmidt-Shin test statistic), which is different from the two tested tests, checks only the stationarity in the time series, and according to this test, non-stationarity is not visible in the data of carbon dioxide emission per capita even according to the 10% significance level.

Looking again at Figure 1, we see that there is a break between the periods 1860 to 1943 and 1943 to 2023. Taking this into account, if we divide the data into the two periods mentioned above and check its stationarity, we encounter a different picture. So, when we check the stationarity test for the years 1860-1943, which we conventionally divide, we see that there is non-stationarity. There is also a clear trend here.

Figure 2. Azerbaijan CO2 emissions per capita (up to 1943)
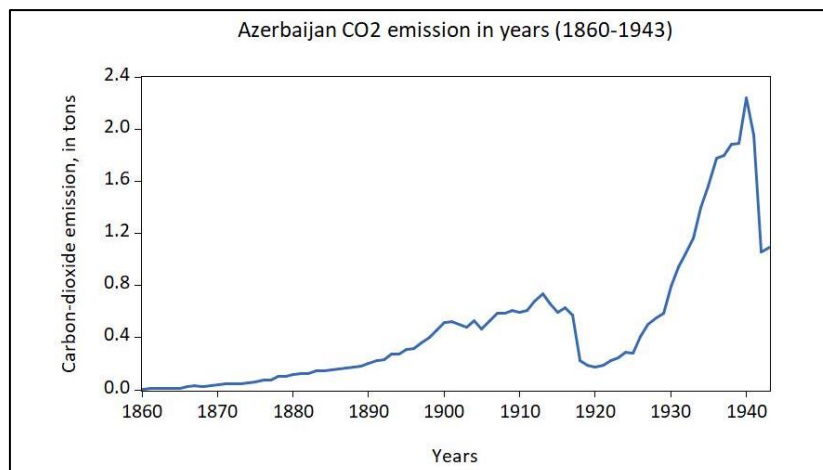
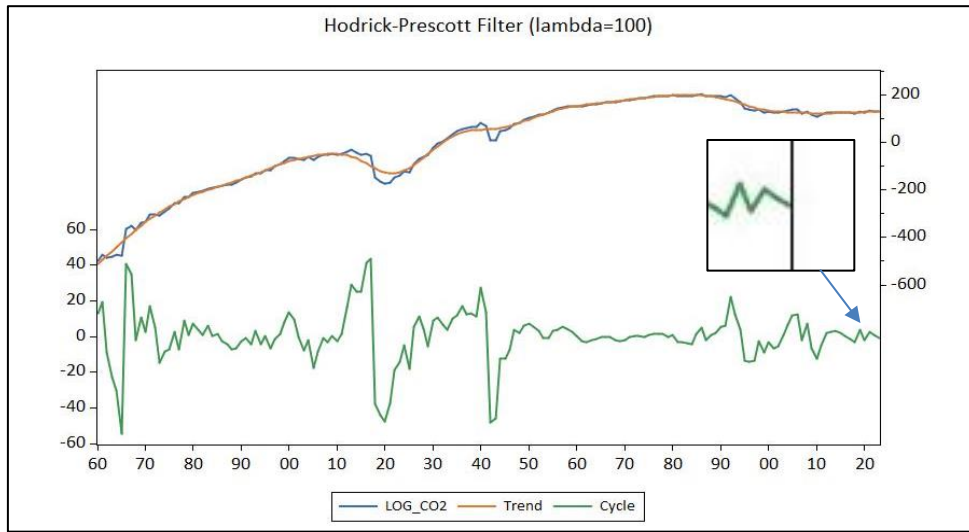|		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.144162	0.0003
Test critical values:	1% level	-4.080021	
	5% level	-3.468459	
	10% level	-3.161067	

Analyzing the results in the tables, we see that non-stationarity, i.e. dependence on delays, is observed in the trend of the amount of carbon dioxide between 1860 and 1943, even at the 0.1% significance level. It can be seen from the following tables that in this period, although the coefficient indicating the constant is not significant, there is a strong dependence on the trend. Also, the coefficients of the first, third, fourth and fifth lags of the differences between the first lag and the time periods are significant. The coefficient of determination in the table is also a good indicator for this model.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AZ_CO2_PER_CAPITA(-1)	-0.302403	0.058786	-5.144162	0.0000
D(AZ_CO2_PER_CAPITA(-1))	0.402094	0.102689	3.915640	0.0002
D(AZ_CO2_PER_CAPITA(-2))	-0.294605	0.172148	-1.711353	0.0914
D(AZ_CO2_PER_CAPITA(-3))	0.682745	0.188428	3.623373	0.0005
D(AZ_CO2_PER_CAPITA(-4))	0.755824	0.221644	3.410077	0.0011
D(AZ_CO2_PER_CAPITA(-5))	0.505235	0.244451	2.066815	0.0425
C	-0.040827	0.029060	-1.404902	0.1645
@TREND("1860")	0.003560	0.000940	3.787551	0.0003
R-squared	0.457079	Mean dependent var		0.013941
Adjusted R-squared	0.402786	S.D. dependent var		0.136010
S.E. of regression	0.105108	Akaike info criterion		-1.570739
Sum squared resid	0.773341	Schwarz criterion		-1.329025
Log likelihood	69.25883	Hannan-Quinn criter.		-1.473977
F-statistic	8.418869	Durbin-Watson stat		2.067244
Prob(F-statistic)	0.000000			

During the period of the Soviet Empire (1920-1991), an increasing trend in carbon dioxide emissions per capita is observed in Azerbaijan. In this period, dependence is observed both on the trend and on the lag of the first degree. However, the data remains stationary. The stationarity check for all the periods mentioned above, including this period, confirms the historical conjunctures.

To check for cyclicity as a confirmation of stationarity tests, we apply the Hodrick-Prescott Filter [1] to the series as a percentage by multiplying the logarithmic transformation of the time series by 100, and we get the following graph as a result (Figure 3). Looking at the graph, it is observed in what periods there is cyclicality in the amount of carbon dioxide per capita in Azerbaijan. It appears first in 1866, then in 1918-1920, 1940-1942, 1992-1996 and 2008-2010 respectively. All these periods can be interpreted mainly as a result of the economic downturn. But the most recent, albeit small, decrease per capita coincides with the period of the Covid-19 pandemic, i.e. 2019-2021.

Figure 3. Hodrick-Presscott filter

Finally, after the above tests, it is determined that our fitting model for a stationary time series is more significant than the model you would create with autoregression from degree 1 and moving average from degree 6. The prediction equation and regression result for this model are as follows:

D(CO2 emissions) = [AR(1)=0.261, MA(6)=0.244, uncond, estsmpl="1920 2023"] (1)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(1)	0.260721	0.054803	4.757399	0.0000
MA(6)	0.244179	0.104405	2.338756	0.0213
SIGMASQ	0.072754	0.006261	11.62068	0.0000
R-squared	0.116468	Mean dependent var		0.033253
Adjusted R-squared	0.098972	S.D. dependent var		0.288347
S.E. of regression	0.273706	Akaike info criterion		0.279120
Sum squared resid	7.566396	Schwarz criterion		0.355401
Log likelihood	-11.51426	Hannan-Quinn criter.		0.310024
Durbin-Watson stat	2.046203			
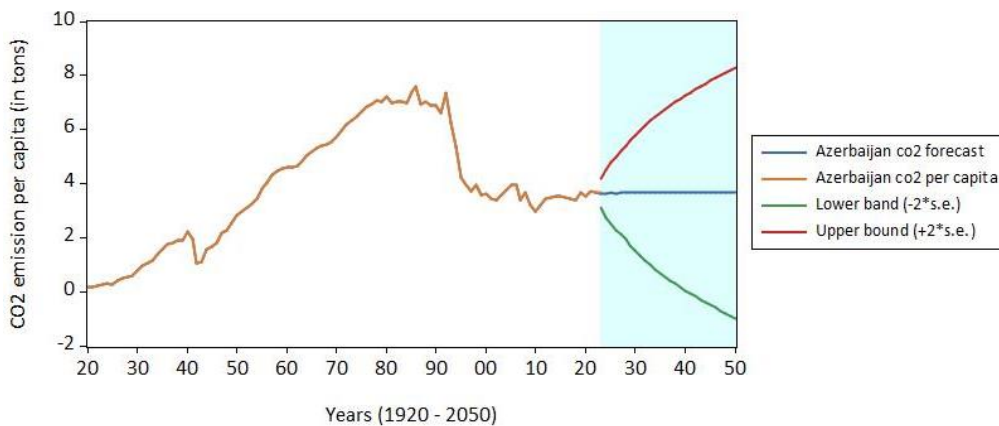
The forecast equation was calculated in Eviews software and an interval of up to 2 standard deviations around the forecast until 2050 was added to the model.

5. CONCLUSION

Although a fairly long period of time was considered in the study, the presence of such a secular period here creates various problems for the database. The most important of them is that the conjuncture has changed several times in the secular period. Examples of these are the rapid development of the manufacturing industry after the discovery of oil on the Absheron Peninsula in the 1840s, the revolutions in Tsarist Russia at the beginning of the last century and the crisis caused by the First World War, the rapid industrialization in the Second World War and its aftermath, and the collapse of the Soviet Empire. stagnation and finally the well-known pandemic can be shown. In addition to these, it is appropriate to analyze these data by dividing them into several periods. But for a more detailed analysis of these periods, instead of annual data, at least quarterly data may be more effective.

As can be seen from the forecast graph, although the forecast line shows a stable trend, the upper and lower limits of up to 2 standard deviations deviate from reality in the long run. This is the result of changes in the conjuncture and various political decisions in the long term. This review underscores the multifaceted nature of CO2 emissions in Azerbaijan, shaped by economic activities, energy consumption patterns, and policy measures. The collective insights emphasize the critical need for integrated approaches encompassing economic, technological, and policy dimensions to effectively address CO2 emissions challenges and foster sustainable development. The amount of carbon dioxide (CO2) emissions per capita is a crucial metric for evaluating the environmental impact of a nation's activities, particularly concerning climate change and sustainable development. In Azerbaijan, a rapidly developing economy with a unique energy landscape, understanding per capita CO2 emissions is vital for formulating effective environmental policies and strategies. Located at the crossroads of Europe and Asia, Azerbaijan has a diverse economy significantly influenced by its abundant oil and gas reserves. The extraction and export of these fossil fuels have been central to the country's economic growth, but this dependence also presents challenges regarding CO2 emissions. As Azerbaijan continues to modernize and industrialize, it becomes increasingly important to monitor and manage its per capita CO2 emissions.

REFERENCE:

1. Brizga, J., Feng, K., & Hubacek, K. (2013). Drivers of CO2 emissions in the former Soviet Union: A country level IPAT analysis from 1990 to 2010. *Energy*, *59*, 743-753.

2. Dilanchiev, A., Umair, M., & Haroon, M. (2024). How causality impacts the renewable energy, carbon emissions, and economic growth nexus in the South Caucasus Countries?. *Environmental Science and Pollution Research*, 1-17.

3. Gurbanov, S. (2021). Role of natural gas consumption in the reduction of CO2 emissions: case of Azerbaijan. *Energies*, *14*(22), 7695.

4. Hasanov, F. J., Mukhtarov, S., & Suleymanov, E. (2023). The role of renewable energy and total factor productivity in reducing CO2 emissions in Azerbaijan. Fresh insights from a new theoretical framework coupled with Autometrics. *Energy Strategy Reviews*, *47*, 101079.

5. Hodrick, Robert J. and Edward C. Prescott. "Postwar U.S. Business Cycles: An Empirical Investigation." Journal of Money, Credit and Banking 29 (1997): 1-16.

6. Huseynli, N. (2024). CO2 Emission and Research and Development Relationship for Azerbaijan. *International Journal of Energy Economics and Policy*, *14*(1), 219-223.

7. Mikayilov, J. I., Galeotti, M., & Hasanov, F. J. (2018). The impact of economic growth on CO2 emissions in Azerbaijan. *Journal of cleaner production*, *197*, 1558-1572.

8. Mukhtarov, S., Aliyev, F., Aliyev, J., & Ajayi, R. (2022). Renewable energy consumption and carbon emissions: evidence from an oil-rich economy. *Sustainability*, *15*(1), 134.

9. Vidadili, N., Suleymanov, E., Bulut, C., & Mahmudlu, C. (2017). Transition to renewable energy and sustainable energy development in Azerbaijan. *Renewable and Sustainable Energy Reviews*, *80*, 1153-1161.

HUMAN CAPİTAL AND ITS INFLUENCE ON THE EVOLUTİON OF NATİONAL INNOVATİON SYSTEMS

Parvana Mahammad ISMAYILOVA[1], Ulkar Fizuli ISFANDIYAROVA[2]

[1]*Azerbaijan State University of Economics, Zagatala branch, Azerbaijan*
[2]*Azerbaijan State University of Economics, Zagatala branch, Azerbaijan*

ARTICLE INFO	ABSTRACT
	The innovation ecosystem is expressed in the form of a network system that plays an important role in the economic development of countries in the 21st century. It is necessary to consider the innovation ecosystem in a way as an innovative environment in creation of which all sides implementing innovative work and service processes- governmental and non-governmental organizations, commercial associations and, most importantly, human capital are involved. Human capital, which refers to the skills, knowledge, experience and creativity of individuals within society, is a key driver of innovation and a fundamental element in fostering a dinamic and sustainable innovation ecosystem. *The human factor encourages the generation of ideas, entrepreneurship, collaboration and knowledge creation, contributing to the development of innovative solutions and the economic and social progress of a region or country. The research study investigated the role and importance of human capital in the innovation ecosystem, which is a particularly important factor in the modern world of information and digitization, where the main focus is on the "brain product". The result of researchers who have studied the mentioned topic before, are analyzed during the research, and the statistical data is used as the main data supporting the hypothesis.*

1. INNOVATION ECOSYSTEM

Since innovation is a concept related to entrepreneurship, its significant impact on the economy is undeniable. As Nicolas Valery (1999) points out in his article "Industry Gets Religion" published in "The Economist", it is possible to state that innovation became the religion of industry in the late 20th century and became the key for the business world to increase its market share and profits. He states that, along with innovation discourses, governments use innovative solutions in their interventions in the economy (Valery, 1999).

Jackson (2011) defined the innovation ecosystem as "complex relationships between actors and organizations whose goal is to enable technology development and innovation". Actors and organizations included in the definition are explained as follows: actors – financial resources (such as funds, equipment, facilities) and human resources (such as students, sector researchers, sector representatives), institutions (organizations) - business schools, engineering faculties, venture capitalists, institutions such as regional development agencies (Jackson, 2011).

However, in practice, there are many countries that cannot achieve the same results by building a similar ecosystem and implementing similar practices. In this case, the reasons why analogous situations do not produce the same results, or in other words, why ecosystem experiments remain ceremonial empiricism, should be explored. National innovation ecosystem can exist only with high functional contributions. The main purpose of importing technology to countries is not to develop, but to create, research and learn their own brands and technologies with the help of the national innovation system. Countries should approach this situation within the framework of national policy in order to increase their innovation competence. This, in turn, necessitates state intervention, that is, state financing of technological activities and state intervention in the market.

It is believed that countries prioritizing their national innovation ecosystems and integrating them into the broader economic landscape will gain momentum in achieving a competitive edge. This is because the national innovation ecosystem facilitates the "commer-cialization" of technological research outcomes, which arise from the collaborative efforts of the government, research institutes, universities, and industry (Lu, et al., 2014).

The National Innovation Ecosystem represents a conceptual model for examining innovation dynamics, focusing on the collaborative efforts of various entities such as government, businesses, universities/public research centers, and financial institutions. This framework underscores the importance of technology and information exchange among individuals, organizations, and institutions in driving the innovation process forward. The advancement of innovation and technology stems from intricate interactions among stakeholders within the ecosystem, including institutions, universities, and government research institutes. The concept of national innovation systems is employed to comprehend and facilitate fundamental transformations in organizing and overseeing the innovation process (World Economic Forum, 2020).

2. ECONOMIC MODELS USED TO ANALYZE INNOVATION ECOSYSTEMS:

2.1. Schumpeterian Model of Economic Growth:

Developed by economist Joseph Schumpeter, this model emphasizes the role of innovation and entrepreneurship in driving economic growth.

Key components of the Schumpeterian model include:

- Entrepreneurship: Entrepreneurs play a central role in the innovation process by introducing new products, technologies, and business models to the market.

- Creative Destruction: Innovation leads to the displacement of existing products and industries, creating opportunities for new firms and industries to emerge.

- Technological Change: Continuous technological progress is the primary driver of long-term economic growth, as new innovations increase productivity, efficiency, and competitiveness.

- Implications for Innovation Ecosystems: The Schumpeterian model highlights the importance of fostering a supportive ecosystem for innovation and entrepreneurship, including access to funding, skilled labor, research infrastructure, and supportive government policies (Schumpeter, 1934).

2.2. Porter's Diamond Model:

Developed by economist Michael Porter, this model identifies four interrelated factors that shape a nation's competitive advantage and innovation ecosystem.

Key components of Porter's Diamond model include:

- Factor Conditions: The availability of factors of production such as skilled labor, infrastructure, capital, and natural resources.

- Demand Conditions: The nature and sophistication of domestic demand for goods and services, which drive firms to innovate and improve their competitiveness.

- Related and Supporting Industries: The presence of strong and competitive upstream and downstream industries that facilitate innovation, knowledge spillovers, and collaboration.

- Firm Strategy, Structure, and Rivalry: The extent of domestic competition and the strategies adopted by firms to compete in the global market, which stimulate innovation and productivity improvements.

- Implications for Innovation Ecosystems: Porter's Diamond model emphasizes the importance of a holistic approach to building innovation ecosystems, addressing factors such as education and skill development, infrastructure development, industry collaboration, and competition policy to enhance national competitiveness and foster innovation-led economic growth (Davies and Ellis, 2000).

These economic models provide frameworks for understanding the dynamics of innovation ecosystems and the factors that drive innovation, entrepreneurship, and economic development. By applying these models, policymakers, business leaders, and researchers can identify opportunities to strengthen innovation ecosystems and promote sustainable growth and prosperity.

3. MAPPING NATIONAL INNOVATION ECOSYSTEM

Mapping the superstructure of national innovation systems involves understanding that it comprises multiple interrelated systems working in tandem. Unlike a single cohesive entity, there's typically no centralized direction due to the complexity and vast amount of information involved, making accurate and entirely rational planning challenging.

Governments often rely on a variety of experts and advisory groups to develop national-level strategies and plans. The outcomes of these exercises can vary widely in their utility and foresight. While some advisory groups may be influenced by self-serving interests aimed at shaping national policy for personal gain, others may produce innovative and forward-thinking recommendations (Lundvall, 2010).

Ultimately, the selection of members for strategy and planning roles emerges as a critical function of the executive branch, as it significantly impacts the direction and effectiveness of national innovation strategies.

Measurement and evaluation of national innovation systems are directed towards four types of knowledge or information flows:

- Mutual linkages between institutions, primarily focusing on joint research activities and other technical collaborations.

- Interactions between institutions, universities, and the public, including research institutes, joint research, patenting, joint publications, and more informal connections.

- Dissemination of knowledge and technology through institutions, including industry adoption levels for new technologies and dissemination through machinery and equipment.

- Mobility of personnel, both within and between technical teams, focusing on the movement of personnel between the public and private sectors.

Efforts to link these flows to a firm's activities enhance high-level technical collaboration, technology diffusion, and improve innovation potential, resulting in products, patents, and productivity gains for institutions (Lundvall, 2010).

The Global Innovation Index 2023 (GII) serves as a barometer of global innovation trends, offering insights into the innovation landscape amidst a backdrop of economic uncertainty. The report ranks the world's most innovative economies among 132 nations, shedding light on their strengths and areas for improvement. Furthermore, it identifies and highlights the top 100 science and technology innovation clusters, providing valuable localization of innovation hotspots around the globe.

In the Global Innovation Index 2023, Azerbaijan has been ranked 89th among countries categorized as upper-middle-income economies. This ranking provides a snapshot of Azerbaijan's innovation performance relative to other nations in a similar income bracket. It highlights Azerbaijan's position within the global innovation landscape and offers insights into areas where the country can focus on enhancing its innovation ecosystem and competitiveness (World Intellectual Property Organisation, 2023).

The Doing Business report is grounded in research that explores the development of effective institutions. It delves into the mechanisms behind institutional change, emphasizing the significance of historical context. The report underscores the importance of designing institutions

that complement existing frameworks, human capacities, and available technologies. By understanding the drivers of institutional change, policymakers can work towards creating environments conducive to economic growth and development.

As of the latest Doing Business report, Azerbaijan holds the 34th rank with a Doing Business score of 76.7. This score reflects Azerbaijan's performance in terms of business regulation and the ease of doing business within the country. A higher score indicates a more favorable business environment, while a lower rank suggests areas where improvements can be made to enhance the ease of doing business and attract investment (World Bank, 2020)

Azerbaijan serves as a notable example of how a country within the Eastern Partnership (EaP) has successfully developed an e-government system within a relatively short timeframe. The country initiated the "National Strategy for the Development of the Information Society in the Republic of Azerbaijan for 2014-2020" with the aim of addressing legal barriers hindering the introduction of digital services. Subsequently, in March 2018, the e-Government Development Center was established by Presidential Decree under the supervision of the State Agency for the Provision of Services to Citizens and Social Innovation. This center is tasked with coordinating the implementation of e-government services, enhancing the management of publicly available information, and raising awareness about the availability of e-services.

Through collaborative efforts, Azerbaijan launched a new unified portal for all e-government services (www.digital.gov.az) in 2018. This portal offers access to over 440 different digital services catering to various segments of the population, including both legal entities and individuals. This initiative demonstrates Azerbaijan's commitment to advancing digitalization and improving public service delivery through effective e-government solutions (Civil Society Forum, 2019).

4. THE ROLE OF HUMAN CAPITAL

Innovation ecosystems are essential for the advancement of smart, sustainable, and inclusive growth, which were the primary focus areas of the EU countries' 2020 strategy. It is widely acknowledged that achieving these goals is impossible without the cultivation of knowledge, skills, and values, collectively known as human capital. High-quality education and training, the spread of knowledge across production and service sectors, the promotion of creative industries, and the development of research-intensive economies are all critical components of building robust innovation ecosystems. Human capital, measured by indicators such as GDP per capita, stands out as the primary driver of economic growth. Therefore, many development objectives emphasize the importance of enhancing education and skills within innovation ecosystems (Hawkes and Ugur, 2012).

Human capital plays an important role in the formation and success of the innovation ecosystem. An innovation ecosystem is an interconnected network of individuals, organizations, resources, and institutions that collaborate and interact to create and commercialize new ideas, technologies, and products.

The impact of human capital development on innovation and, consequently, on the competitiveness of the economy has been emphasized by numerous researchers in many publications. More than 100 years ago, Schumpeter highlighted the importance of knowledge for innovation. Later, Drucker emphasized the importance of investments in human capital for the competitiveness of countries through innovation.

Human capital plays a crucial role in shaping the pace of technological advancement within a nation. It serves as a fundamental determinant of the country's technological progress. Human capital contributes to the acceleration of technological advancement through two main avenues: the creation of novel innovations and the adoption of more advanced technological solutions through imitation. The extent of imitation can be gauged by comparing the productivity levels of the leading technological country with the potential productivity of the nation in question.

Human capital is perceived in two distinct ways within economic discourse. Firstly, it is regarded as an autonomous factor of production that enhances productivity without necessarily altering the existing level of technology. This perspective is highlighted in the works of Lucas (1988) and Mankiw et al. (1992). Secondly, human capital is viewed as a crucial input in the innovation process, serving as a complement to technology. Scholars such as Benhabib and Spiegel (1994), Romer (1990), and Nelson and Phelps (1966) emphasize this perspective, suggesting that investments in human capital facilitate the development and adoption of new technologies, thereby contributing to economic growth and innovation (Lucas,1988; Mankiw and et al.;Benhabib and Spiegel, 1994; Romer, 1990; Nelson and Phelps, 1966).

Building on the foundational work of Nelson and Phelps (1966), these scholars posit that human capital primarily serves to enhance a country's level of technology through two main mechanisms: the adoption of superior foreign technology and the creation of domestic innovations. In essence, human capital is not viewed as a substitute for technology but rather as an essential component for driving innovation forward (Nelson and Phelps, 1966).

In their empirical approach, Benhabib and Spiegel propose that a country's technological level is influenced by both imitation and innovation activities. They measure a country's capacity to innovate based on its stock of human capital, which is quantified by the average years of schooling within the labor force. The potential for imitation is approximated by the existing gap between the technological level of the leading productivity nation and the less advanced technological level of the country in question (Benhabib and Spiegel, 1994)

It's noteworthy that their research reveals a significant impact only of human capital levels on the growth of total factor productivity. In contrast, the growth of human capital does not demonstrate a direct effect on economic performance. Their analysis focuses on levels rather than growth rates, as data on literacy and income proxies are available only for a single cross-section.

The state plays an important role in the cultivation of human capital in the national innovation ecosystem. Some countries (such as Taiwan, South Korea, Singapore, which previously did not have a say in the industry, but today are leaders in the world market with innovative products, as well as IEEs) are trying to form a national innovation ecosystem by investing in education, vocational training and lifelong learning initiatives. Arusha in Tanzania, Ahmedabad in India, or Kibera slums in Nairobi, Kenya lack many of the amenities that characterize Silicon Valley. Despite this, they managed to create vibrant, local innovation ecosystems. Countries like Azerbaijan and Turkey can develop this by investing in human capital with the necessary planning and innovation policies they should adopt. In addition, they should promote policies that attract and retain talent, support entrepreneurship, and foster a culture of innovation and creativity. By recognizing the importance of human capital and investing in its development, countries can position themselves for long-term economic growth and competitiveness in the context of global innovation.

It is stated in the "Azərbaycan 2020: Gələcəyə Baxış" İnkişaf Konsepsiyası, 2012" development concept that the transition from a traditional economy to a knowledge-based economy should be established as the foundation from now on, and for this purpose, adequate development of human capital, which is decisive, should be emphasized.

Human capital plays a pivotal role in nurturing and advancing a national innovation ecosystem through various means, including:

✓ Knowledge creation and R&D;

✓ Entrepreneurship and innovation;

✓ Adoption of new technologies;

✓ Problem solving and creativity;

✓ Transfer of knowledge;

✓ Cooperation and networking;

✓ Education and development of soft and hard skills;

✓ Research and academic institutions;

✓ Leadership and management;

✓ Innovation culture;

✓ Digital literacy

In his research, Cof (2012) assessed the innovation ecosystems of five countries based on six key variables: market, capital, people, culture, infrastructure, and policies. Within this framework, the variable of "human" encompasses enterprising individuals who contribute to the innovation ecosystem (Cof, 2012).

In their study, Fukuda and Watanabe (2008) analyzed the development of technology policy in Japan and the United States over the past 30 years and developed a model of how countries can assess their innovation ecosystem. In this model, they considered the variables of infrastructure, investments, talent pool, supply for innovation input and demand for innovation output (Fukuda and Watanabe, 2008). "Thinking brain" was one of the main elements of the mentioned research.

Tabanski and Israel (2015) analyzed Israel's innovation ecosystem from a cybersecurity perspective in their research works. The country's main strategy, performance indicators, culture, human resources, private sector in the country, legal conditions and universities were analyzed in the mentioned research work. Israel's innovation ecosystem, government programs, private/public sector activities, cooperation between the public and private sectors, investments in human resources, demand in the private sector, and the importance of research funds have also been analyzed in other studies. (Frenkel, et al., 2011).

Khorsheed (2014) aimed to provide a general framework for the national innovation ecosystem and identified eight variables in his study: research centers, government, institutions, associations, financial providers, knowledge transfer centers, social networks and entrepreneurs (Khorsheed, 2014).
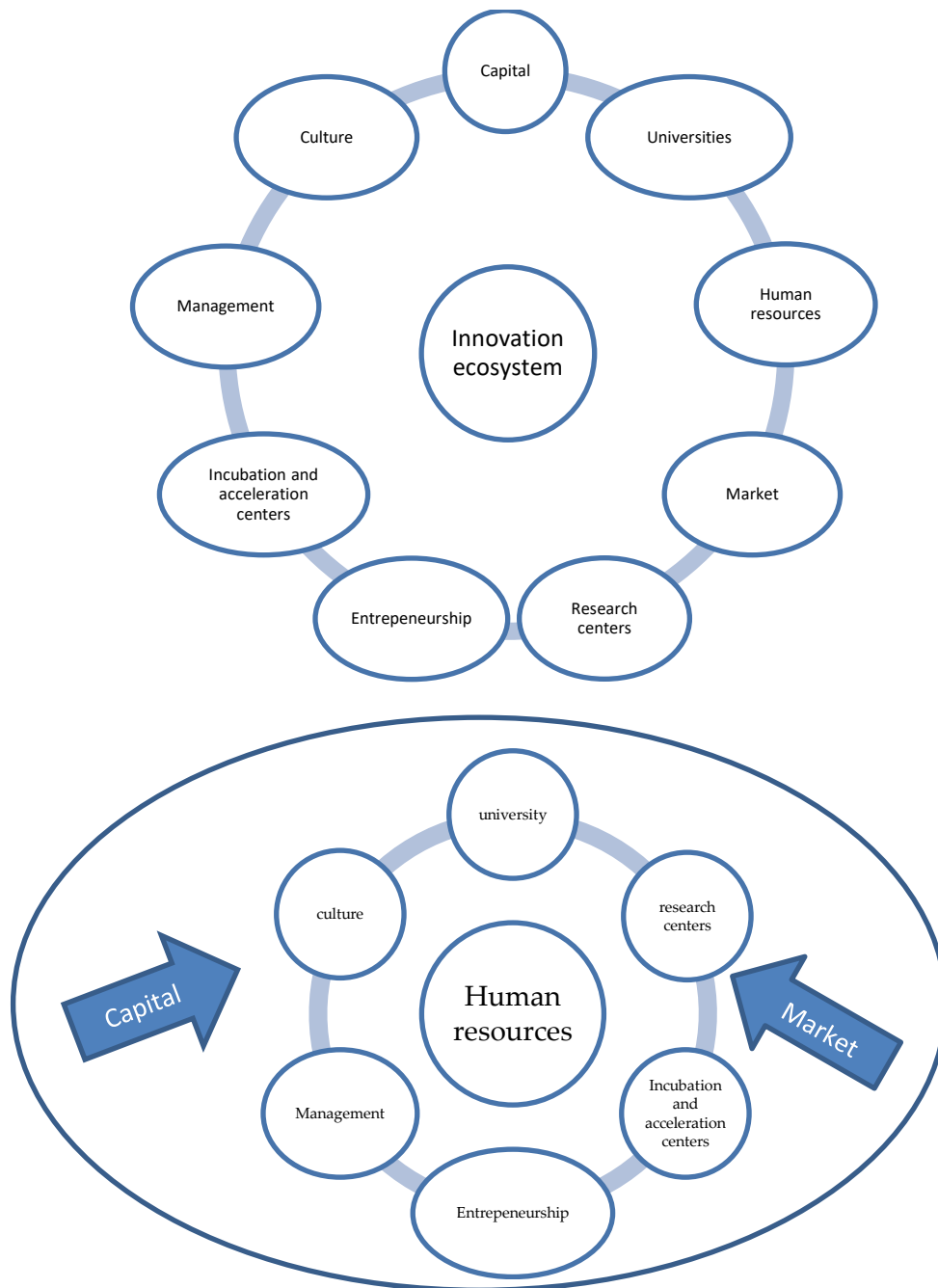
Figure1. Comparative analysis of the components of the national innovation ecosystem
and the human resource-centered innovation ecosystem

Universities are key factors in the ecosystem. In addition to directly participating in innovation activities, they are also important in providing human resources and creating an innovation culture.

5. TECHNOLOGY CENTERS ESTABLISHED TOGETHER WITH UNIVERSITIES IN AZERBAIJAN

The responsibilities of the education system Education qualities are indicators of an individual's breadth of knowledge and to some extent, their practical skills. However, a significant portion of knowledge in the knowledge economy comes from learning by doing and extends beyond traditional education.

If we look at the experience of the neighboring country Turkey, since 2012, it has been ranked in the "Most Innovative and Most Entrepreneurial 50 Universities" prepared by TUBITAK. Azerbaijan does not have such a demand from universities at the national level yet. Universities see the innovations happening in the world, try to get out of the position of only education providers, and also prepare a strategic action plan in the direction of becoming research centers. Azerbaijan State University of Economics, Khazar University, Baku Engineering University, Azerbaijan Diplomatic Academy, and Azerbaijan State Oil and Industry University are universities that function as research centers and play a significant role in contributing to the country's innovation ecosystem. These institutions collaborate with the government and industry to establish innovative triad models, fostering research, development, and innovation in various sectors of the economy.

The eiLink (Education Industry Link) Research and Development Center was established at Khazar University in December 2015 with the support of the Azerbaijan branch of the Society of Petroleum Engineers (SPE). The primary objective of this research center is to become a leading entity in research across various fields and to deliver high-quality education. Working in collaboration with industry experts, the eiLink R&D center conducts research in areas such as Geological Exploration, Reservoir Engineering, Computer and Information Sciences, with a focus on Data Science, numerical simulations, and oil engineering (https://khazar.org/az/item/1426).

The Baku Engineering University (BEU) Technopark stands as the pioneering and dynamic structural unit among higher education institutions in Azerbaijan. Since its inception on November 8, 2016, the technopark has been actively engaged in various activities. Its primary objective is to enhance the reputation of the university as a competitive higher education institution on the international stage. Additionally, the BEU Technopark aims to foster an ecosystem that facilitates university-industry collaboration, providing modern infrastructure and research opportunities to relevant companies, researchers, and academic staff (https://beu.edu.az/az/ page/technopark-30).

Baku Higher Oil School (BHOS) and Industry Partnerships: BHOS partners with government agencies and industry leaders in the oil and gas sector to offer specialized programs and research projects. These partnerships provide students with hands-on experience and industry-relevant skills, preparing them for careers in Azerbaijan's key economic sectors (bhos.edu.az).

6. ARTIFICIAL INTELLIGENCE

In the context of the innovation ecosystem, it's essential for Azerbaijan to adapt its focus in the ICT sector in response to global trends. While hardware manufacturing and distribution have become concentrated in a few global hubs, there are emerging technologies where Azerbaijan can invest and reap significant benefits.

Artificial intelligence, cloud computing, and social media represent areas of ongoing innovation with considerable potential. By directing efforts towards these domains, Azerbaijan can leverage its assets and capabilities to better integrate into the global economic system. This shift aligns with the principles of the innovation ecosystem, where resources and investments are strategically allocated to maximize returns and foster sustainable growth in line with evolving technological landscapes.

Artificial intelligence (AI) is indeed crucial for the future of governments, offering opportunities for improved efficiency, decision-making, and service delivery. Considering that

hardware manufacturing and assembly have become concentrated in other parts of the world, Azerbaijan may find it strategic to focus its ICT innovation efforts on AI. Unlike hardware, the barriers to entry for AI utilization are relatively low, making it accessible for countries like Azerbaijan to leverage its potential.

Investing in AI technologies can empower governments to streamline processes, enhance citizen services, and make data-driven decisions. By harnessing AI capabilities, Azerbaijan can modernize governance, improve public services, and stimulate economic growth. Moreover, prioritizing AI innovation aligns with global trends and positions Azerbaijan at the forefront of technological advancement in the governmental sector.

By leveraging AI in its university-government-entrepreneurship collaboration, ADA University's Center for Data Analytics Research demonstrates how AI technologies can drive innovation, economic development, and societal impact in Azerbaijan. Through interdisciplinary collaboration, education, and research, CEBA plays a pivotal role in advancing AI adoption, fostering entrepreneurship, and building a thriving digital ecosystem in the country.

7. CONCLUSION

In concluding the research findings, it's imperative to view human capital not merely as a component but as the very essence of the innovation ecosystem itself. As depicted in Figure 1, the circle represents the holistic national innovation ecosystem. Innovation is intricately linked to human cognition—a continuous process of ideation, experimentation, and adaptation. The establishment of a robust national innovation ecosystem hinges on the education, mindset, drive, and risk-taking propensity of the population. Therefore, the primary responsibility of the state lies in fostering a culture of innovation, nurturing creative thinking, and providing steadfast support to nascent ideas. This necessitates a concerted effort from incubation and acceleration centers, research institutions, and scientific facilities, all working collaboratively towards a common goal.

Ways to motivate skilled individuals to engage in national innovation endeavors could encompass the following incentives:

- Competitive Compensation and Benefits: Providing attractive salary packages and benefits can entice talented professionals to join and contribute to national innovation projects.

- Professional Growth Opportunities: Offering avenues for continuous learning, training, and skill enhancement can incentivize individuals to apply their expertise toward significant national initiatives.

- Recognition and rewards: Acknowledging and rewarding the contributions of individuals to national innovation efforts through awards, honors, or public recognition can serve as powerful incentives.

- Access to resources and infrastructure: Ensuring that skilled individuals have access to the necessary resources, research facilities, and infrastructure can motivate them to participate in national innovation projects.

- Collaboration opportunities: Facilitating collaboration and networking opportunities with other skilled professionals and organizations can incentivize individuals to contribute their talents to national innovation efforts.

REFERENCE LIST:

1. Benhabib, J., & Spiegel, M. M. (1994). The Role of Human Capital in Economic Development: Evidence From Aggregate Cross-Country Data. *Journal of Monetary Economics*, *34*, 143–173.

2. Benhabib, J., & Spiegel, M. M. (2005). Human Capital and Technology Diffusion. In P. Aghion & S. N. Durlauf (Eds.), *Handbook of Economic Growth* (Vol. 1A, pp. 935–966).

3. Fukuda, K. & Watanabe, C. (2012) Innovation Ecosystem for Sustainable Development" *Sustainable Development: Policy and Urban Development : Tourism, Life Science, Management and Environment* , 389-404. Winchester: InTech.

4. Hawkes, D. & Ugur, M. (2012). Evidence on the Relationship Between Education, Skills and Economic Growth in Low-Income Countries: A Systematic Review. *London: EPPI-Centre, Social Science Research Unit, Institute of Education*, University of London.

5. Howard, D. & Paul, E. (2000). Porter's Competitive Advantage Of Nations: Time For The Final Judgement? *Journal of Management Studies* 37(8):1189 – 1214

6. Jackson, D. J. (2011). What is an Innovation Ecosystem?,

   http://ercassoc.org/sites/default/files/topics/policy_studies/DJackson_Innovation%20Ecosystem_03- 15-11.pdf

7. Joffe, B. (2012). Ecosystem 101: The Six Necessary Categories To Build The Next Silicon Valley, Techcrunch:

   https://techcrunch.com/2012/09/01/ecosystem-101-the-six-necessarycategories-to-build-the-next-silicon-valley/

8. Khorsheed, M. S. (2014). The National Innovation Ecosystem: A Vehicle Toward Knowledge Based Economy, *Second Intl. Conf. on Advances in Economics, Management and Social Study*, 59-61.

9. Lu, W. M., Q. L., Kweh & C. L. Huang (2014). Intellectual Capital and National Innovation Systems Performance, Knowledge-based systems, 71: 201-210

10. Lucas, R. (1988). On the Mechanics of Economic Development. *Journal of Monetary Economics*, *22*, 3–42.

11. Lucas, R. (2002). The Industrial Revolution: Past and Future. In R. Lucas (Ed.), *Lectures on Economic Growth* (pp. 109–190). Cambridge: Harvard University Press.

12. Mankiw, G. N., Romer, D., &Weil, D. N. (1992).A Contribution to the Empirics of Economic Growth. *Quarterly Journal of Economics*, *107*, 407–437.

13. Bengt-Ake L., (2010). National Systems of Innovation: Toward a Theory of Innovation and Interactive Learning

14. Nelson, R. R., & Phelps, E. S. (1966). Investment in Humans, Technological Diffusion and Economic Growth. *American Economic Review*, *56*, 69–75.

15. Romer, P. M. (1990). Endogenous Technological Change. *Journal of Political Economy*, *98*, S71–S102.

16. Schumpeter, J.A., 1934 (2008). The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest and the Business Cycle. New Brunswick (U.S.A) and London (U.K.)

17. Tabansky, L. & Isaac B. I. (2015). Cybersecurity in Israel, New York: Springer.

18. Valery, N. (1999). Industry Gets Religion, *The Economist*: 10.04.2017:

19. Vandenbussche, J., Aghion, P., & Meghir, C. (2006). Growth, Distance to Frontier and Composition of Human Capital. *Journal of Economic Growth*, *11*, 97–127.

20. "AZƏRBAYCAN 2020: GƏLƏCƏYƏ BAXIŞ" İNKİŞAF KONSEPSİYASI 2012 Azərbaycan Respublikası Prezidentinin 2012-ci il 29 dekabr tarixli 800 nömrəli Fərmanı ilə təsdiq edilmişdir

   800 - "Azərbaycan 2020: gələcəyə baxış" İnkişaf Konsepsiyasının təsdiq edilməsi haqqında (e-qanun.az)

21. EaP Csf Covid-19 Policy paper "SMEs Digital Transformation in the EaP countries in Covid-19 Time: Challenges and Digital Solutions":18 COVID-19s-potential-for-change-in-the-EaP-countries.pdf (eap-csf.eu)

22. Soumitra D., Bruno L., Lorena R. L. & Sacha W. (2023). World Intellectual Property Organisation. Innovation in the face of uncertainty. WIPO Global Innovation Index 2023 – Innovation in the face of uncertainty (wipo.int)

23. Klaus S. & Saadia Z. (2020). The Global Competitiveness Report: How Countries are Performing on the Road to Recovery. World Economic Forum WEF_TheGlobalCompetitivenessReport2020.pdf (weforum.org)

24. UNDP-Aze-Knowledge-Economy-Azerbaijan-2018.pdf

25. United Nations Sustainable Development Cooperation Framework (2021-2025) UN-Azerbaijan Sustainable Development Cooperation Framework 2021-2025 Azerbaijan-UNSDCF-2021-2025_1.pdf

26. Doing Business in Azerbaijan - World Bank Group Edited by Bengt-Ake L.: 2010

27. BANM (bhos.edu.az)
    http://www.economist.com/node/186620

28. https://beu.edu.az/az/page/texnopark-30
    https://khazar.org/az

THE PARTICIPATION OF AZERBAIJANI BANKS IN THE RESTORATION OF KARABAKH

Salatin HACIYEVA, Mayis AZIZOV, Ulvi YAGUBOV

Baku Engineering University
Baku, Azerbaijan

ARTICLE INFO	ABSTRACT
	This article is about the distinctive role of Azerbaijani banks in the restoration process of the Karabakh region after the Nagorno-Karabakh war is over. In this process, banks play a crucial role in terms of financing and means of obtaining funds for investments. *The literature review includes recent articles written on the subjects related to the restoration process including the re-establishment of infrastructure, education, technology, economy, and social life in the territory.* *The Karabakh Revival Fund that is established with the decree of the president of the Republic of Azerbaijan serves as a fund collector function that pools the donations of public and private entities as well as individuals. Financial aid by the local banks' accounts for up to 2.550.000 AZN that will be directed to the renovation projects.* *Sustainable development will be achieved with the ongoing recovery efforts and the determination of all the stakeholders participating in the process. The current and projected bank branches in the territory will speed up the ongoing construction works, the development of the socio-economic conditions, will support the businesses, especially SMEs, and will contribute to the general recovery of the region.*

INTRODUCTION

Regardless of their nature, wars have always left regions with destructed infrastructure and economies. When the Nagorno-Karabakh war was over, there was a formidable obligation of rebuilding the region from all aspects. In the journey of restoring and revitalizing the liberated territories, the establishment of the Karabakh Revival Fund was the biggest step, which was the strategic initiative guided by the decree of the President of Azerbaijan. The fund aimed to provide financial support attracting investments and resources toward comprehensive reconstruction processes.

The banking sector's involvement is inevitable, considering its pivotal role in economic growth, banks provide financial support, playing the role of intermediary between investors and the region and fostering public-private cooperation.

The purpose of this article is to analyze the banks' contribution to the reconstruction of the Karabakh region. The tangled relationship between government projects, financial institutions,

and local banks is the base of our study and the study aims to reveal the banking sector's participation in the revival process. This paper can stimulate other banks that have not planned to come to this region yet, they can penetrate therein with their new branches. This is also important for them to reach to customers from this region and not to lose their existing customers.

We touched upon the legal framework, financial contributions, and initiatives, and considered the banks as architects of economic recovery. This article aims to contribute to the process of revitalizing the Karabakh region with a look from a different aspect, as well as to contribute to the study materials related to this issue.

This research is not without limitations, so that, due to the ongoing construction works and recovery process, not all data is accessible and its relevance may be under question for now. That's why, this research may need to be updated in the future when all fundamental investments and construction are over.

1. LITERATURE REVIEW

The exploration of the banking sector's role in regional development has emerged as a central focus in recent years. A considerable body of research over the past half-decade has scrutinized various dimensions, including the influence of banking services on economic expansion, the correlation between financial access and regional progression, and the consequential role of financial inclusivity in nurturing advancement within specific regions.

The post-conflict reconstruction and development of Karabakh present a crucial juncture for Azerbaijan's banking sector to make substantive contributions. This review amalgamates insights from several pivotal academic articles, dissecting how the banking sector can act as a catalyst for economic rehabilitation, infrastructural augmentation, financial inclusivity, and sustainable expansion in Karabakh.

There have been written several articles on the issue of reconstructing the Karabakh region and the article named "Infrastructure Financing in Post-Conflict Karabakh" by Aliyev, N. et al. (2021) is one of them. The authors accentuate the pivotal role of Azerbaijan's banking sector in funding imperative infrastructure projects pivotal for Karabakh's advancement. The publication emphasizes the necessity for targeted investments and loans to reconstruct essential infrastructure like roads, utilities, and other critical systems. In order to access funds, there is a need for a sustainable banking sector in this region and Abbasov et al. (2022) examined the imperative nature of establishing financial inclusivity in Karabakh in their article named "Financial Inclusion Initiatives in Karabakh". Their research highlights the establishment of accessible banking services, extending credit facilities, and promoting savings mechanisms to integrate the local populace into the financial framework.

Zeynalova and others analyzes challenges and constraints to Azerbaijan's post-war economy, using secondary data from various sources. The findings suggest prioritizing non-oil sector development, resistance to shocks, macroeconomic stability, and high economic growth to ensure economic independence and maintain stability during crises (Zeynalova et al., 2022). Aghazada also examined the banking sector's services in the Karabakh region, focusing on its unique economic potential in agriculture, precious metals, transport, logistics, tourism, and hospitality (Aghazada, H. 2021).

There is an article about the digitalization of the banking sector of the region which has been written by Ahmadov, E. et al. (2022) "Technology Integration for Financial Access". The study focuses on leveraging innovative financial technologies in Karabakh's banking sector. The article discusses digital banking solutions to enhance accessibility and efficiency in financial services for the local population.

Besides the cooperation with the government, the collaborative endeavors between Azerbaijani banks and international financial institutions for financing Karabakh's reconstruction has been studied by Guliyev, S. and Mammadov, H. (2022) The article, named "Reconstruction Financing Partnerships" delves into the role of partnerships with entities such as the EBRD and the World Bank in securing funding for developmental projects.

The amalgamated findings from these articles underscore the pivotal role of Azerbaijan's banking sector in the post-conflict development of Karabakh. Infrastructure financing, SME support, financial inclusion, reconstruction partnerships, sustainable practices, policy coordination, and technological integration emerge as fundamental strategies to facilitate Karabakh's sustainable and comprehensive development.

2. METHODOLOGY

Firstly, let us state that our article is more like a report or overview of the situation rather than a research project with a specific methodology.

In our research, we mainly used the reports provided by banks individually, as well as the information related to the Karabakh Revival Fund that was taken from the fund's website accordingly. When analyzing the grace loans, the information given by The Center of Economic Reforms and Communication of Azerbaijan Republic came to our help with its report based on the economic sectors.

We used the report of the CBAR, which demonstrates the loans provided by banks to Karabakh cities. The information on the bank branches is based mainly on the banks' projections that is declared on their websites. There were some obstacles as well and those obstacles derived from the difference in the liberation dates of the Karabakh cities and it affected the completeness of our charts and diagrams.

3. THE PARTICIPATION OF BANKS IN THE REVIVAL PROCESS

On January 4, 2021, The Karabakh Revival Fund was established by the Decree of the President of the Republic of Azerbaijan that aims to provide financial support, and attract investments to the measures implemented in the direction of the restoration and reconstruction of the territories liberated from occupation. In its activity, the Fund is guided by the Constitution of the Republic of Azerbaijan, the laws of the Republic of Azerbaijan, the Charter of the Fund, decrees and orders of the President of the Republic of Azerbaijan, decisions and orders of the Cabinet of Ministers of the Republic of Azerbaijan, and other normative legal acts. The funds of the fund are formed at the expense of donations, grants, and other sources not prohibited by law from individuals and legal entities. (Karabakh Revival Fund, 2021) Transformation of the territory into a region with a stable economy and high prosperity, the development of public-private partnerships in this field, as well as supporting promotional activities within and outside the country are among the priorities of this public legal entity. (Karabakh Revival Fund, 2022)

The banking sector stays at the root of the rebuilding process of the Karabakh region due to its stimulating role in the economy. It helps to establish a healthy business environment and can
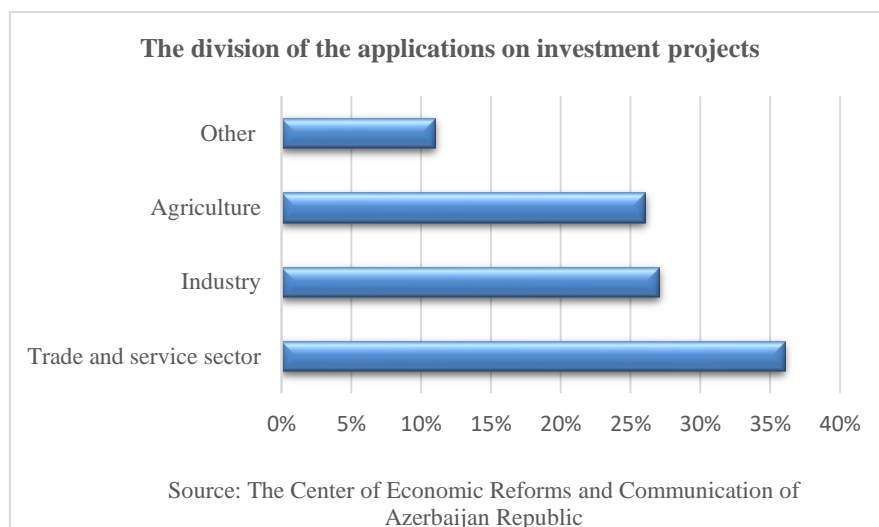
settle financial leverage issues to employ the full capacity of the region. The banking sector consists of the main components like attracting investment, direct financing, and facilitating interrelationships between the state and businesses. Initially, by providing financial support to both small and medium-sized enterprises and large-scale development projects, the sector plays a direct and powerful role in Karabakh. This involvement is essential as the region works towards economic reintegration with the broader national economy. Secondly, the sector holds a distinctive position in fostering investment prospects for the restoration and reintegration of Karabakh, drawing in regional and global investors to participate in these initiatives. Thirdly, the sector boasts extensive experience in facilitating government support for entrepreneurship and driving public-private partnership programs. This experience will be essential for ensuring a balanced recovery and fostering economic growth in the recently liberated territories. (Irwin-Hunt, A. 2021) Analysis is being conducted by the Central Bank of Azerbaijan regarding the creation of a branch network of banks and the increase of financial accessibility in the freed territories. Togrul Aliyev, General Director of the Central Bank said that banks, microfinance organizations, and insurance companies have been surveyed in this regard: "Their preparation for the "Great Return" is in the center of attention. Detailed analyzes are being conducted in this regard." (Aliyev, 2023). In February 2021, Ziraat bank Azerbaijan transferred 100.000 AZN to the Karabakh Revival fund as a contribution to restoration, rebuilding and landscaping processes in the liberated territories. The bank, besides participating in the rebuilding process of Karabakh, has made donations to the Aid Fund of the Armed Forces of the Republic of Azerbaijan, eliminated commissions on the aids from the Republic of Turkey and has sent medical instruments to the doctors serving on the border during the war.   "Ziraat Bank Azerbaijan" OJSC belongs to the Ziraat Finance Group that has a history of 157 years in Turkiye and operates in Azerbaijan based on the license dated 30.12.2014, numbered 255, given by the Central Bank of The Republic of Azerbaijan. Currently the bank operates in 6 branches overall in Baku, Sumgait and Ganja cities while offering corporate and retail banking simultaneously. (*Ziraat Bank Azərbaycan, 2021)* PASHA Bank OJSC, Kapital Bank OJSC, Bank Respublika OJSC, Xalq Bank OJSC, Unibank OJSC, Ziraat Bank OJSC, Rabitəbank OJSC, Bank of Baku OJSC, Gunay Bank OJSC, Muganbank OJSC, Turanbank OJSC, Yelobank OJSC, Expressbank OJSC, Aqrarkredit CJSC, Azər-Türk Bank OJSC have made donations to The Karabakh Revival Fund overall 2.550.000 AZN. (Karabakh Revival Fund, 2021) In 2022, PASHA Bank OJSC provided financial assistance of 132 million AZN to its customers that are operating within the liberated territories.[4]Bank of Baku OJSC, in order to support the revival of Karabakh, transferred 100,000 AZN to the Karabakh Revival Fund. It should be noted that at the same time, Bank of Baku transferred 100,000 AZN to the Armed Forces Assistance Fund for the purpose of supporting the Azerbaijan Army. (Bank of Baku, 2021) Experts of ABA (Azerbaijan Banks Association) Public Union visited Shusha city and discussed the provision of innovative financial and banking services in the Karabakh region. ABA was formed by commercial banks in 1990. The main goal is to represent member organizations, support their needs for various business services and coordinate their activities. Currently, 25 banks and 5 non-banking organizations are members of ABA. (Banker.Az_G. 2022) Bank Respublika OJSC was also among the banks that contributed to the Karabakh Revival Fund with the amount of 200.000 AZN. (Bank Respublika, 2021) AccessBank, during the first days of the Patriotic War, allocated 200,000 manats to help victims of the battles for the integrity of Azerbaijan. These funds were spent on the purchase of medicines and medical supplies for providing first aid to military hospitals and the wounded in the frontline areas. A part of the funds was used to buy necessary goods for the military.

AccessBank also provided humanitarian assistance to civilians affected by the war. The bank sent blankets, small household appliances and disposable dishes to the affected residents of Barda and Agjabadi to meet their daily needs. After the 44-day war, the employees of AccessBank continued their activities in the direction of the elimination of the consequences of the war and the restoration of Karabakh. Unique medical equipment was purchased by the bank and handed over to the Sports and Rehabilitation Center of the Azerbaijan State Academy of Physical Education and Sports, with their help, soldiers and officers were rehabilitated after operations. On the anniversary of the Patriotic War, the bank donated 100,000 manats to the Karabakh Revival Fund. AccessBank intends to actively cooperate with business people in the restoration entrepreneurship in Karabakh, taking into account the many years of cooperation with micro-entrepreneurs, especially those working in the agricultural sector, as well as the presence of branches in the western regions of the country. (AccessBank, December, 2021)

4. GRACE LOANS

The government has already taken a number of important steps to promote entrepreneurship in Karabakh and East Zangezur. According to the information of the Small and Medium Business Development Agency, until January 1 of this year, the agency received 1,339 applications to engage in business activities in the liberated territories. A significant part of the applications, i.e. 873 are local and 466 are foreign applications covering 37 countries. Entrepreneurs from Turkey, Russia, Kazakhstan and Hungary are particularly interested in investing in Karabakh and Eastern Zangezur. (Guliyeva, 2023)

Table 1.

The division of the applications on investment projects

Source: The Center of Economic Reforms and Communication of Azerbaijan Republic

State support for loans, which make up the main part of the investment for entrepreneurial activity, has already been determined. In order to support the granting of loans to entrepreneurs operating in the liberated territories, on January 9 2023, the President Ilham Aliyev approved the "Rule on State Guarantee of Loans and Subsidization of Loan Interests" and attached to it "Framework Guarantee Agreement on State Guarantee of Loans to Entrepreneurs Operating in Territories Liberated from Occupation" was adopted. The adopted rule defines the terms of state guarantee for loans to business entities operating in Karabakh and Eastern Zangezur region and subsidizing the interest of received loans. The Ministry of Finance of the Republic of Azerbaijan plays the role of guarantor in loans obtained with a state guarantee. The requirements for state-guaranteed loans to Karabakh region are as follows:

- the total amount of all authorized loans of an entrepreneurial subject determined by state insurance should not exceed 5,000,000 (five million) manats;
- the annual interest rate of the loan should not exceed 15%;
- the term of the loan should not exceed 7 years;
- the grace period for the loan should be no more than half of the loan period, up to 36 months;
- the ratio of the state guarantee to the loan should not exceed 90% of it. (Qafqazinfo.az, 2023)

The stimulation of the attraction of the citizens around the frontline to the entrepreneurial activities and allocation of grace loans for them are among the main priorities of The Entrepreneurship Development Fund. On September 26, 2023, during the business forum held by The Entrepreneurship Development Fund of The Ministry of Economy, 1.9 million AZN was allocated to 21 entrepreneurs operating In the Upper Karabakh economic region. The loans will be directed mainly to the development of animal husbandry, cotton growing, horticulture, bread production and other areas, and this will lead to the creation of up to 50 new jobs. Sahib Mammadov, the deputy of the minister, states that, up to now, including the recent allocation, 44.6 million AZN grace loan was granted for the financing of up to 1300 investment projects. (AzTV.az, 2023)

The diagram below demonstrates the loans provided by banks to the Karabakh region. The figures are reflecting the information as of the 10th of January, 2023. As Khankendi, Khojaly, Khojavend cities liberated after 19 September 2023, the allocations to these cities are not shown herein.

Table 2.

	Xankəndi şəhəri / Khankendi city	Ağcabədi / Aghjabedi	Ağdam / Aghdam	Bərdə / Barda	Füzuli / Fuzuli	Xocalı / Khojaly	Xocavənd / Khojavend	Şuşa / Shusha	Tərtər / Tartar
■ Total	0.0	113.0	31.7	201.9	23.0	0.0	0.0	0.0	27.4
■ of which	0.0	112.1	31.0	201.8	22.4	0.0	0.0	0.0	27.4
■ of which	0.0	0.9	0.7	0.1	0.5	0.0	0.0	0.0	0.0
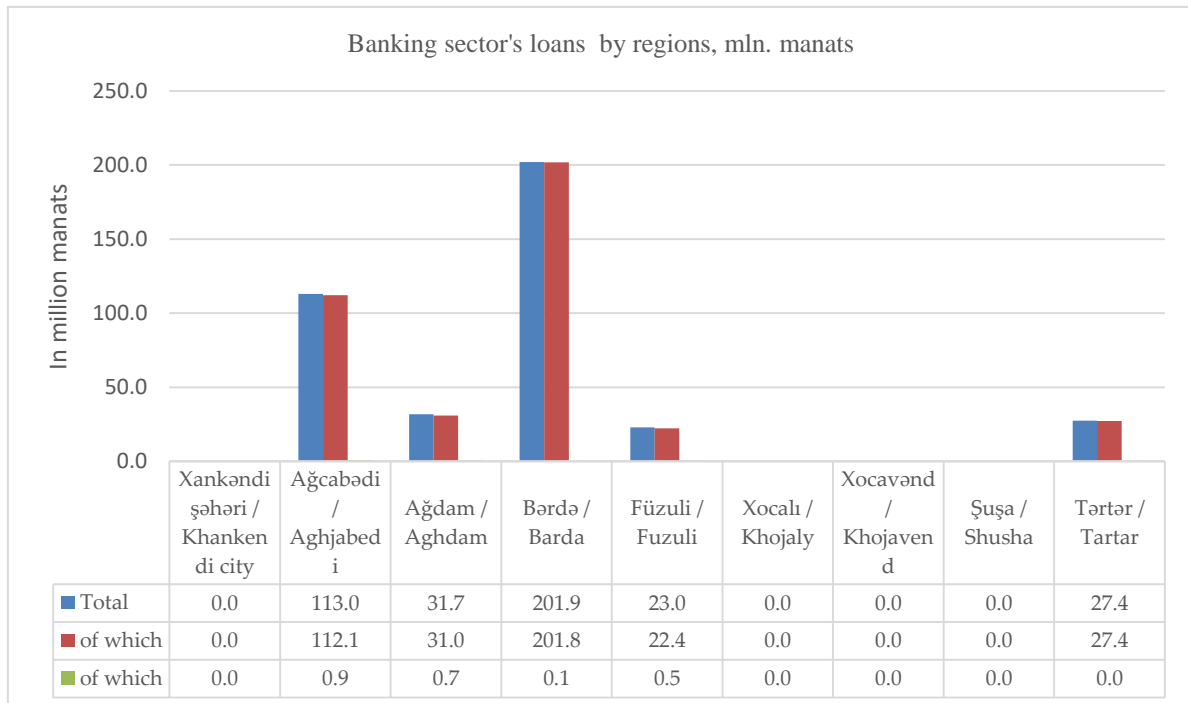
Source: The Central Bank of Azerbaijan Republic

5. LAUNCHING BANK BRANCHES

Bank branches to be opened in the liberated areas will have a substantial role in the process of realization of the returning program, in the implementation of construction works and socio-economic development measures in the region as well as in the creation of favorable environment for small and medium enterprises. (Paşayev, F., 2020)

For the meantime, Kapital Bank OJSC is the largest bank in terms of its coverage area and even before the liberation, it had branches under names of several Karabakh cities like Susha, Gubadli, Aghdam, Lachin, Jabrayil. Those branches will be moved to the cities accordingly along with new branches in Kalbajar, Zangilan and other districts, and will operate there from then on. In this regard, preparatory work has already started at the bank's head office, and as soon as conditions are favorable in the appropriate places that determined by the state authorities, the opening of branches will be carried out as planned. All necessary conditions and opportunities will be created to provide high-level service to customers in the newly opened branches.

Recently, in Zangilan and Lachin cities new branches were launched and several days before, a new branch in Khankendi was opened. The Khankendi branch, presented on the basis of a new concept, will provide the highest level of service to customers 5 days a week from 9:00 to 18:00. The branch has all the necessary conditions and facilities for this. Here, Khankendi residents are offered all kinds of banking services, including deposits, plastic cards, various types of loans and other products, settlement-cash transactions, and currency exchange.

The number of branches of the bank with the largest branch network in the country reached 120 after the opening of the Khankendi branch. It is planned to open a branch of the bank in Jabrayil city soon. In the newly opened branches, all the necessary conditions and opportunities for providing high-level customer service will be created. (Kapital Bank, 2020)

As soon as the Jabrayil city was liberated, The International Bank of Azerbaijan Republic announced its intention to open a branch therein. A decision was made in this regard at the meeting of the Bank's Management Board and the decision was submitted to the Supervisory Board for approval in accordance with corporate governance procedures.

The newly established Khankendi branch of IBA has started serving its customers. The building of the branch has been built according to the new development concept of the bank and equipped with modern banking technologies, is located in the center of Khankendi city. The bank didn't forget about the environment as well, so that, when establishing the Khankendi branch, the declaration of Karabakh and Eastern Zangezur as a green growth zone was taken into the account and the building of the Khankendi branch was built accordingly. Solar panels are placed on the roof of the building. The facade and billboards of the Khankendi branch will be illuminated with renewable energy. (Pashayev, F., 2020)

The construction of Shusha branch of the PASHA Bank OJSC will be completed for the April, next year. The new branch will be in compliance with the architecture of Shusha. The branch will cover the Karabakh region as well as Khankendi city. (Kerimov, 2023)

"Ziraat Bank Azerbaycan" OJSC is also planning to expand its branch network. According to the information provided by Alpaslan Chakar, the general director of the bank, new branches will be launched in Karabakh and Nakhchivan. (Nesirzade, 2021)

For the meantime, already two ATMs belonging to Kapital Bank and International Bank of Azerbaijan, have been installed in the Karabakh region. They are located in Shusha and Aghdam accordingly.

6. CONCLUSION

To sum up, we can say that in the process of rebuilding and revitalizing of the liberated areas, the Azerbaijani government, Karabakh Revival Fund and the main banks of the country work collaboratively with an all-round approach. It is clearly visible that the banking sector plays a crucial role in financial support, and attracting investments through substantial donations to the Revival Fund. Entrepreneurship and sustainable economic growth in the region are fostered thanks to the Entrepreneurship Development Fund that provided investors with state-supported loans and initiatives.

As banks prepare to open branches in the region, their contribution to the socio-economic development, favorable environments, construction works, and for businesses, particularly small and medium enterprises, is with no exception plays an essential role in the ongoing recovery. These collaborative efforts reflect a commitment to transforming the Karabakh region into a thriving and flourishing part of the overall economy of the country, reflecting the determination of all stakeholders involved and the sustainability of the projects.

New banks branches will be beneficial for several parties, so that, new branches mean new work places, new taxable amount for the government as well as new foreign investments.

7. RECOMMENDATIONS

Despite of the fact that the main banks of the country play a crucial role in the recovery process by investing with money and they open branches therein, they need to increase their branches considering the fact that the Karabakh region is mountainous and its districts have several villages. Investments and increasing branches in the shortest time is important form the market share perspective as well. The more accessible branches and ATMs mean the more prominence and customers.

REFERENCES

1. Aliyev, N. (2021). *Infrastructure Financing in Post-Conflict Karabakh. International Scientific Conference of Masters and Doctoral Students in Economics and Management*.

2. "Guliyev, S. (2022). *Examining the role of Public-Private Partnership in Post-Conflict Reconstruction and Development* (Doctoral dissertation)."

3. Abbasov, E. (2022). *Financial Inclusion Initiatives in Karabakh*. In *The Nagorno-Karabakh Conflict* (pp. 59-87).

4. Ahmadov, E. (2022). *Technology Integration for Financial Access*. (Master's thesis, Universidade NOVA de Lisboa-master'sal)

5. Zeynalova, G., Mammadov, A., & Nadirov, O. (2022). THE CHALLENGES AND CONSTRAINTS TO ECONOMIC GROWTH IN THE POST-WAR PERIOD AZERBAIJAN. *TURAN: Stratejik Arastirmalar Merkezi*, *14*, 502-510.

6. Aghazada, H. (2021). EVALUATION OF THE BANKING SECTOR SERVICES INTENDED FOR THE KARABAKH REGION. *Economic and Social Development: Book of Proceedings*, 804-810.

7. *Qarabağ Dirçəliş Fondu / Karabakh Revival Fund. (n.d.). Qarabağ Dirçəliş Fondu / Karabakh Revival Fund LinkedIn.*

   https://az.linkedin.com/company/qdfazerbaijan

8. *Qarabağ Dirçəliş Fondunun Azərbaycan Banklar Assosiasiyasının Rəyasət Heyətinin üzvləri ilə görüşü keçirilib. (n.d.). https://qdf.gov.az/fealiyyet/layiheler/Qarabag-Dirchelish-Fondunun-Dostlari-iguzar-platformas/xeberler/305-Qarabag-Dirchelish-Fondunun-Azerbaycan-Banklar-Assosiasiyasinin-Reyaset-Heyetinin-uzvleri-ile-gorushu-kechirilib.html*

9.   Irwin-Hunt, A. (2021, September 27). Rebuilding the Karabakh region. *The Banker*.
     https://www.thebanker.com/Rebuilding-the-Karabakh-region-1632746641

10. Aliyev, T. (2023, July 10). *Qarabağda bank xidmətləri üçün hazırlıqlara başlanıb*.
     koordinat.az. https://koordinat.az/41291/qarabagda-bank-xidmetleri-ucun-hazirliqlara-baslanib

11. (*Ziraət Bank Azərbaycan-ın Sədrinə Qarabağ Dirçəliş Fondu Tərəfindən Xüsusi Sertifikat Təqdim Edilib.|Ziraat Bank,* n.d.)

12.   (*Qarabağ Dirçəliş Fondunun Azərbaycan Banklar Assosiasiyasının Rəyasət Heyətinin Üzvləri Ilə Görüşü Keçirilib,* n.d.-b)

13. *Bank of Baku "Qarabağ Dirçəliş Fondu"nun xüsusi sertifikatı ilə təltif olunub!* (n.d.).
     https://order.bankofbaku.com/en/news/bank-of-baku-qarabag-dircelis-fondu-nun-xususi-sertifikati-ile-teltif-olunub/.

14. Banker.Az_G. (2022, October 17). Qarabağda innovativ maliyyə-bank xidmətlərinin göstərilməsi müzakirə edilib. *Banker.az.* https://banker.az/qarabagda-innovativ-maliyy%C9%99-bank-xidm%C9%99tl%C9%99rinin-gost%C9%99rilm%C9%99si-muzakir%C9%99-edilib/

15. *Bank Respublika Mobil Şöbə ilə "Qarabağ Dirçəliş Fondu"na ianə etmək imkanını yaratdı.* (n.d.).
     https://www.bankrespublika.az/news/bank-respublika-mobil-sobe-ile-qarabag-dircelis-fonduna-iane-etmek-imkanini-yaratdi_1195.

16. *AccessBank Qarabağın dirçəlişinə dəstək olur*. (n.d.). https://www.accessbank.az/az/private/news/79115

17. Guliyeva, G. (2023, February 3). *Qarabağ və Şərqi Zəngəzurda sahibkarlıq mühiti*. Ereformsgov.az.
     https://ereforms.gov.az/az/eksport-yazilari/qarabag-ve-serqi-zengezurda-sahibkarliq-muhiti-68

18. *Qarabağda kreditlərə dövlət zəmanətinin verilməsi şərtləri açıqlandı*. (2023, January 9). Qafqazinfo.
     https://qafqazinfo.az/news/detail/qarabagda-kreditlere-dovlet-zemanetinin-verilmesi-sertleri-aciqlandi-387706

19. *Yuxarı Qarabağ iqtisadi rayonunda fəaliyyət göstərən sahibkalara güzəştli kreditlər verilib - VİDEO*. (n.d.). Aztv.az.
     https://aztv.az/az/news/1513/yuxari-qarabag-iqtisadi-rayonunda-fealiyyet-gosteren-sahibkalara-guzestli-kreditler-verilib-markvideo

20. Paşayev, F. (2020, October 5). *Cəbrayılda bank filialı açıldı - FOTO | KONKRET*. KONKRET.
     https://konkret.az/cebrayilda-bank-filiali-acildi-foto/

21. *Kapital Bank işğaldan azad olunan bütün rayonlarda yeni filiallar açacaq*. (n.d.-b). Kapital Bank.
     https://www.kapitalbank.az/news/karabakhbranches

22. Paşayev, F. (2020b, October 5). *Cəbrayılda bank filialı açıldı - FOTO | KONKRET*. KONKRET.
     https://konkret.az/cebrayilda-bank-filiali-acildi-foto/

23. Kerimov, A. (2023, October 20). *"Paşa Bank"ın Şuşa filialı gələn il fəaliyyətə başlayacaq*. apa.az.

24. https://apa.az/maliyye/pasa-bankin-susa-filiali-gelen-il-fealiyyete-baslayacaq-791400

25. Nesirzade, X. (2021, October 29). *"Ziraat Bank Azerbaycan" Qarabağda və Naxçıvanda filiallar açacaq*. interfax.az.
     https://interfax.az/view/848912/az

INSTRUCTIONS FOR AUTHORS

1. "The Baku Engineering University Economics and Administration" accepts original unpublished articles and reviews in the research field of the author.

2. Articles are accepted in English.

3. File format should be compatible with **Microsoft Word** and must be sent to the electronic mail (**journal@beu.edu.az**) of the Journal. The submitted article should follow the following format:
   - Article title, author's name and surname
   - The name of workplace
   - Mail address
   - Abstract and key words

4. The title of the article should be in each of the three languages of the abstract and should be centred on the page and in bold capitals before each summary.

5. **The abstract** should be written in **9 point** type size, between **100** and **150** words. The abstract should be written in the language of the text and in two more languages given above. The abstracts of the article written in each of the three languages should correspond to one another. The keywords should be written in two more languages besides the language of the article and should be at least three words.

6. . **UDC** and **PACS** index should be used in the article.

7. The article must consist of the followings:
   - Introduction
   - Research method and research
   - Discussion of research method and its results
   - In case the reference is in Russian it must be given in the Latin alphabet with the original language shown in brackets.

8. **Figures, pictures, graphics and tables** must be of publishing quality and inside the text. Figures, pictures and graphics should be captioned underneath, tables should be captioned above.

9. **References** should be given in square brackets in the text and listed according to the order inside the text at the end of the article. In order to cite the same reference twice or more, the appropriate pages should be given while keeping the numerical order. For example: [7, p.15].

Information about each of the given references should be full, clear and accurate. The bibliographic description of the reference should be cited according to its type (monograph, textbook, scientific research paper and etc.) While citing to scientific research articles, materials of symposiums, conferences and other popular scientific events, the name of the article, lecture or paper should be given.

   Samples:

a) *Article:* Demukhamedova S.D., Aliyeva İ.N., Godjayev N.M.. *Spatial and electronic structure af monomerrik and dimeric conapeetes of carnosine üith zinc,* Journal of structural Chemistry, Vol.51, No.5, p.824-832, 2010

b) *Book:* Christie ohn Geankoplis. *Transport Processes and Separation Process Principles.* Fourth Edition, Prentice Hall, p.386-398, 2002

c) *Conference paper:* Sadychov F.S., Aydın C., Ahmedov A.İ.. Appligation of Information – Commu-nication Technologies in Science and education. II International Conference."*Higher Twist Effects In Photon- Proton Collisions", Bakı, 01-03 Noyabr, 2007, ss 384-391*
   References should be in 9-point type size.

10. The margins sizes of the page: - Top 2.8 cm. bottom 2.8 cm. left 2.5 cm, right 2.5 cm. The article main text should be written in Palatino Linotype 11 point type size single-spaced. Paragraph spacing should be 6 point.

11. The maximum number of pages for an article should not exceed 15 pages

12. The decision to publish a given article is made through the following procedures:
   - The article is sent to at least to experts.
   - The article is sent back to the author to make amendments upon the recommendations of referees.
   - After author makes amendments upon the recommendations of referees the article can be sent for the publication by the Editorial Board of the journal.

YAZI VƏ NƏŞR QAYDALARI

1. "Journal of Baku Engineering University-İqtisadiyyat və İdarəetmə"- əvvəllər nəşr olunmamış orijinal əsərləri və müəllifin tədqiqat sahəsi üzrə yazılmış icmal məqalələri qəbul edir.

2. Məqalələr İngilis dilində qəbul edilir.

3. Yazılar **Microsoft Word** yazı proqramında, (**journal@beu.edu.az**) ünvanına göndərilməlidir. Göndərilən məqalələrdə aşağıdakılara nəzərə alınmalıdır:

- Məqalənin başlığı, müəllifin adı, soyadı,
- İş yeri,
- Elektron ünvanı,
- Xülasə və açar sözlər.

4. **Məqalədə başlıq hər xülasədən əvvəl** ortada, qara və böyük hərflə xülasələrin yazıldığı hər üç dildə olmalıdır.

5. **Xülasə** 100-150 söz aralığında olmaqla, 9 punto yazı tipi böyüklüyündə, məqalənin yazıldığı dildə və bundan əlavə yuxarıda göstərilən iki dildə olmalıdır. Məqalənin hər üç dildə yazılmış xülasəsi bir-birinin eyni olmalıdır. Açar sözlər uyğun xülasələrin sonunda onun yazıldığı dildə verilməklə ən azı üç sözdən ibarət olmalıdır.

6. Məqalədə UOT və PACS kodları göstərilməlidir.

7. Məqalə aşağıdakılardan ibarət olmalıdır:

- Giriş,
- Tədqiqat metodu
- Tədqiqat işinin müzakirəsi və onun nəticələri,
- İstinad ədəbiyyatı rus dilində olduğu halda orjinal dili mötərzə içərisində göstərməklə yalnız Latın əlifbası ilə verilməlidir.

8. **Şəkil**, **rəsm**, **grafik** və **cədvəllər** çapda düzgün, aydın çıxacaq vəziyyətdə və mətn içərisində olmalıdır. Şəkil, rəsm və grafiklərin yazıları onların altında yazılmalıdır. Cədvəllərdə başlıq cədvəlin üstündə yazılmalıdır.

9. **Mənbələr** mətn içərisində kvadrat mötərizə daxilində göstərilməklə məqalənin sonunda mətn daxilindəki sıra ilə düzülməlidir. Eyni mənbəyə iki və daha cox istinad edildikdə əvvəlki sıra sayı saxlanmaqla müvafiq səhifələr göstərilməlidir. Məsələn: [7,səh.15].

Ədəbiyyat siyahısında verilən hər bir istinad haqqında məlumat tam və dəqiq olmalıdır. İstinad olunan mənbənin biblioqrafik təsviri onun növündən (monoqrafiya, dərslik, elmi məqalə və s.) asılı olaraq verilməlidir. Elmi mə-qalələrə, simpozium, konfrans, və digər nüfuzlu elmi tədbirlərin materiallarına və ya tezislərinə istinad edərkən məqalənin, məruzənin və ya tezisin adı göstərilməlidir.

Nümunələr:

a) *Məqalə:* Demukhamedova S.D., Aliyeva İ.N., Godjayev N.M.. *Spatial and electronic structure af monomeric and dimeric complexes of carnosine with zinc,* Journal of structural Chemistry, Vol.51, No.5, p.824-832, 2010

b) *Kitab:* Christie ohn Geankoplis. *Transport Processes and Separation Process Principles.* Fourth Edition, Prentice Hall, 2002

c) *Konfrans:* Sadychov F.S., Aydın C., Ahmedov A.İ.. Appligation of Information-Communication Technologies in Science and education. II International Conference. "*Higher Twist Effects In Photon- Proton Collisions",* Bakı, 01-03 Noyabr, 2007, ss 384-391

Mənbələr 9 punto yazı tipi böyüklüyündə olmalıdır.

10. **Səhifə ölçüləri:** üstdən 2.8 sm, altdan 2.8 sm, soldan 2.5 sm və sağdan 2.5 sm olmalıdır. Mətn 11 punto yazı tipi böyüklüyündə, **Palatino Linotype** yazı tipi ilə və tək simvol aralığında yazılmalıdır. Paraqraflar arasında 6 punto yazı tipi aralığında məsafə olmalıdır.

11. Orijinal tədqiqat əsərlərinin tam mətni bir qayda olaraq 15 səhifədən artıq olmamalıdır.

12. Məqalənin nəşrə təqdimi aşağıdakı qaydada aparılır:

- Hər məqallə ən azı iki ekspertə göndərilir.
- Ekspertlərin tövsiyələrini nəzərə almaq üçün məqalə müəllifə göndərilir.
- Məqalə, ekspertlərin tənqidi qeydləri müəllif tərəfindən nəzərə alındıqdan sonra Jurnalın Redaksiya Heyəti tərəfindən çapa təqdim oluna bilər.

YAZIM KURALLARI

1. "Journal of Baku Engineering University- Ekonomi ve Yönetim" önceler yayımlanmamış orijinal çalışmaları ve yazarın kendi araştırma alanın-da yazılmış derleme makaleleri kabul etmektedir.

2. Makaleler İngilizce kabul edilir.

3. Makaleler Microsoft Word yazı programında, (**journal@beu.edu.az**) adresine gönderilmelidir. Gönderilen makalelerde şunlar dikkate alınmalıdır:

• Makalenin başlığı, yazarın adı, soyadı,

• İş yeri,

• E-posta adresi,

• Özet ve anahtar kelimeler.

4. **Özet** 100-150 kelime arasında olup 9 font büyüklüğünde, makalenin yazıldığı dilde ve yukarıda belirtilen iki dilde olmalıdır. Makalenin her üç dilde yazılmış özeti birbirinin aynı olmalıdır. Anahtar kelimeler uygun özetin sonunda onun yazıldığı dilde verilmekle en az üç sözcükten oluşmalıdır.

5. Makalede UOT ve PACS tipli kodlar gösterilmelidir.

6. Makale şunlardan oluşmalıdır:

• Giriş,

• Araştırma yöntemi

• Araştırma

• Tartışma ve sonuçlar,

• İstinat Edebiyatı Rusça olduğu halde orjinal dili parantez içerisinde göstermekle yalnız Latin alfabesi ile ve-rilmelidir.

7. **Şekil, Resim, Grafik** ve **Tablolar** baskıda düzgün çıkacak nitelikte ve metin içerisinde olmalıdır. Şekil, Re-sim ve grafiklerin yazıları onların alt kısımda yer almalıdır. Tablolarda ise başlık, tablonun üst kısmında bulunmalıdır.

8. **Kullanılan kaynaklar**, metin dâhilinde köşeli parantez içerisinde numaralandırılmalı, aynı sırayla metin so-nunda gösterilmelidir. Aynı kaynaklara tekrar başvurulduğunda sıra muhafaza edilmelidir. Örneğin: [7,seh.15].

Referans verilen her bir kaynağın künyesi tam ve kesin olmalıdır. Referans gösterilen kaynağın türü de eserin tü-rüne (monografi, derslik, ilmî makale vs.) uygun olarak verilmelidir. İlmi makalelere, sempozyum, ve konferanslara müracaat ederken makalenin, bildirinin veya bildiri özetlerinin adı da gösterilmelidir.

Örnekler:

a) *Makale:* Demukhamedova S.D., Aliyeva İ.N., Godjayev N.M.. *Spatial and Electronic Structure of Monomerik and Dimeric Conapeetes of Carnosine Üith Zinc,* Journal of Structural Chemistry, Vol.51, No.5, p.824-832, 2010

b) *Kitap:* Christie ohn Geankoplis. *Transport Processes and Separation Process Principles.* Fourth Edition, Prentice Hall, p.386-398, 2002

c) *Kongre:* Sadychov F.S., Aydın C., Ahmedov A.İ. Appligation of Information-Communication Technologies in Science and education. II International Conference. *"Higher Twist Effects In Photon- Proton Collisions", Bakı, 01-03 Noyabr, 2007, ss 384-391*

Kaynakların büyüklüğü 9 punto olmalıdır.

9. **Sayfa ölçüleri**; üst: 2.8 cm, alt: 2.8 cm, sol: 2.5 cm, sağ: 2.5 cm şeklinde olmalıdır. Metin 11 punto büyük-lükte **Palatino Linotype** fontu ile ve tek aralıkta yazılmalıdır. Paragraflar arasında 6 puntoluk yazı mesa-fesinde olmalıdır.

10. Orijinal araştırma eserlerinin tam metni 15 sayfadan fazla olmamalıdır.

11. Makaleler dergi editör kurulunun kararı ile yayımlanır. Editörler makaleyi düzeltme için yazara geri gönde-rilebilir.

12. Makalenin yayına sunuşu aşağıdaki şekilde yapılır:

• Her makale en az iki uzmana gönderilir.

• Uzmanların tavsiyelerini dikkate almak için makale yazara gönderilir.

• Makale, uzmanların eleştirel notları yazar tarafından dikkate alındıktan sonra Derginin Yayın Kurulu tarafından yayına sunulabilir.

13. Azerbaycan dışından gönderilen ve yayımlanacak olan makaleler için,(derginin kendilerine gonderilmesi za-mani posta karşılığı) 30 ABD Doları veya karşılığı TL, T.C. Ziraat Bankası/Üsküdar-İstanbul 0403 0050 5917 No'lu hesaba yatırılmalı ve makbuzu üniversitemize fakslanmalıdır.

ПРАВИЛА ДЛЯ АВТОРОВ

1. «Journal of Baku Engineering University» - Экономика и управление публикует оригинальные, научные статьи из области исследования автора и ранее не опубликованные.

2. Статьи принимаются на английском языке.

3. Рукописи должны быть набраны согласно программы **Microsoft Word** и отправлены на электронный адрес (**journal@beu.edu.az**). Отправляемые статьи должны учитывать следующие правила:
- Название статьи, имя и фамилия авторов
- Место работы
- Электронный адрес
- Аннотация и ключевые слова

4. **Заглавие статьи** пишется для каждой аннотации заглавными буквами, жирными буквами и располагается по центру. Заглавие и аннотации должны быть представлены на трех языках.

5. **Аннотация**, написанная на языке представленной статьи, должна содержать 100-150 слов, набранных шрифтом 9 punto. Кроме того, представляются аннотации на двух других выше указанных языках, перевод которых соответствует содержанию оригинала. Ключевые слова должны быть представлены после каждой аннотации на его языке и содержать не менее 3-х слов.

6. В статье должны быть указаны коды UOT и PACS.

7. Представленные статьи должны содержать:
- Введение
- Метод исследования
- Обсуждение результатов исследования и выводов.
- Если ссылаются на работу на русском языке, тогда оригинальный язык указывается в скобках, а ссылка дается только на латинском алфавите.

8. **Рисунки, картинки, графики и таблицы** должны быть четко выполнены и размещены внутри статьи. Подписи к рисункам размещаются под рисунком, картинкой или графиком. Название таблицы пишется над таблицей.

9. **Ссылки** на источники даются в тексте цифрой в квадратных скобках и располагаются в конце статьи в порядке цитирования в тексте. Если на один и тот же источник ссылаются два и более раз, необходимо указать соответствующую страницу, сохраняя порядковый номер цитирования. Например: [7, стр.15]. Библиографическое описание ссылаемой литературы должно быть проведено с учетом типа источника (монография, учебник, научная статья и др.). При ссылке на научную статью, материалы симпозиума, конференции или других значимых научных мероприятий должны быть указаны название статьи, доклада или тезиса.

    Например:

a) *Статья:* Demukhamedova S.D., Aliyeva I.N., Godjayev N.M. *Spatial and electronic structure of monomeric and dimeric complexes of carnosine with zinc,* Journal of Structural Chemistry, Vol.51, No.5, p.824-832, 2010

b) *Книга:* Christie on Geankoplis. *Transport Processes and Separation Process Principles.* Fourth Edition, Prentice Hall, 2002

c) *Конференция:* Sadychov F.S, Fydin C,Ahmedov A.I. Appligation of Information-Communication Nechnologies in Science and education. II International Conference. *"Higher Twist Effects In Photon-Proton Collision",* Bakı,01-03 Noyabr, 2007, ss.384-391

Список цитированной литературы набирается шрифтом 9 punto.

10. **Размеры страницы:** сверху 2.8 см, снизу 2.8 см, слева 2.5 и справа 2.5. Текст печатается шрифтом **Palatino Linotype**, размер шрифта 11 punto, интервал-одинарный. Параграфы должны быть разделены расстоянием, соответствующим интервалу 6 punto.

11. Полный объем оригинальной статьи, как правило, не должен превышать 15 страниц.

12. Представление статьи к печати производится в ниже указанном порядке:
- Каждая статья посылается не менее двум экспертам.
- Статья посылается автору для учета замечаний экспертов.
- Статья, после того, как автор учел замечания экспертов, редакционной коллегией журнала может быть рекомендована к печати.