

**ACADEMIC RESEARCH &
REVIEWS IN SOCIAL, HUMAN
AND ADMINISTRATIVE
SCIENCES**

EDİTÖR
PROF. DR. İRFAN YILDIZ



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Chapter 1

PROJECT CYCLE MANAGEMENT*

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İmam Bakır ARABACI²

* Produced from the master thesis of Ceyda AKILLI named “The encountered problems of educational projects prepared and implemented by teachers and school managers in terms of project cycle management (The sample of Elazığ)” YOK numbered 466156

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1. Introduction

A project is a set of activities planned to be implemented in a certain place, within a certain time period, with a certain budget, for the realization of clearly defined objectives. Projects are based on strategic plans that aim for success in the medium and long term. A project can be seen as the most appropriately arranged plans chosen from among the available alternatives. In addition, projects are units of any plan that can be divided into targets and evaluated with performance indicators. From a broader perspective, the project; It is the provision of the budget to be used in order to produce certain goods and services and its use in accordance with the purposes (Albayrak, 2012). According to another definition, the project; It is the whole of activities that have certain values, goals, a beginning and an end to be implemented in order to achieve some goals and objectives (Ece and Kovancı, 2004).

The project cycle is the whole of the processes from the emergence of the project idea to the textualization of this idea, its review, grant applications for the project, the execution of the project, its conclusion and final evaluation, and then the production of new project ideas (Öktem, 2013). In the past, people produced project ideas, planned and implemented these projects without the existing technology, capital and materials. Today, with the development of science and technology, the concept of project cycle management has emerged with the use of techniques such as organization management, budget planning, risk and time management in projects.

2. What is Project Cycle Management?

Projects are the whole of short or long-term activities developed to solve the problems determined by the current situation analysis in line with the needs analysis. It is tried to reach a conclusion by synthesizing the data related to the subject to be discussed within the scope of the project. A new solution plan is tried to be put forward by bringing together information, numerical data and related researches about the subject or problem. The process and results of this solution plan are determined with the help of performance indicators. From this point of view, the concept of a project can be defined as a set of practices that are clearly and clearly planned, aim to find solutions to problems, have complementary goals and activities, and have a certain budget (Ece and Kovancı, 2004).

Project cycle management gained importance towards the end of the twentieth century and started to be used in many countries, especially in developed countries. The rapid development of technology, the acceleration of the competitive market, the continuous updating of the service sector and the acquisition of new paradigms have led to the emergence and

development of the concept of “Project Cycle Management”. Applications similar to project cycle management used today were first introduced in II. It is seen that it was used by the United States during World War II. The difficult times experienced during the war years necessitated the use of new strategies and force fields. Military action plans, strategy analyzes and solution theories have been created. All these were prepared as projects and put into practice, and it was necessary to systematically manage these projects. For this reason, it is seen that the first applications of project cycle management are applied in projects prepared for military purposes (Pamukçu, 2015).

Inter-sectoral competition races that gained momentum in the 2000s, the needs of modern societies becoming more complex compared to the past, the value of original ideas, diversity and diversity have led to the focus on project studies (Ece and Kovancı, 2004). Although various projects have been carried out to date, the realization of effective projects has been achieved through the use of project cycle management.

The action of planning, executing, supervising and evaluating the results of the works that take place in the process from the emergence of the projects as an idea to the emergence of the final product is called “Project Cycle Management”.

As expressed in ISO Standards, project cycle management is a process that covers the stages of planning, organizing, budgeting and final evaluation of the project in a transformation with all aspects in order to achieve the determined objectives (ISO, 1997). Project Management Institute (PMI) defines project cycle management. defines it as the art of achieving predetermined goals and objectives by using modern management techniques during the preparation and implementation of the project. Considered from a broader perspective; Project cycle management is a participatory and dynamic management approach that systematically handles many stages, in which interrelated individuals or groups in institutions and organizations come together to achieve a goal (Emrealp, 2013). In project cycle management, activities are tried to be organized and managed in the light of time and quality indicators in order to achieve predetermined goals, objectives and outputs. It can be said that project cycle management has two types of functions (Gürlek, 2014). The first is the role of planning and supervising the project; the other is the management of improving interpersonal relations, ensuring cooperation and realizing open communication.

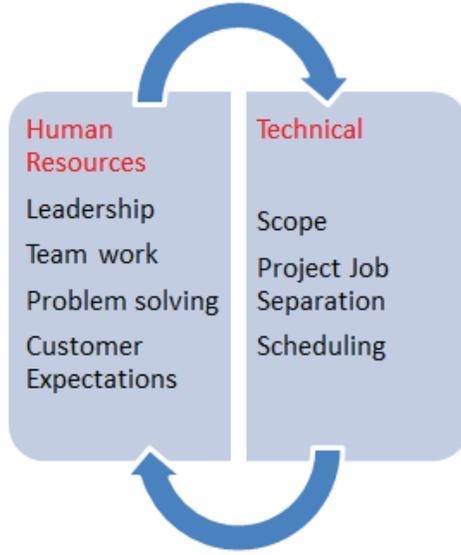


Figure 1. *Dimensions of Project Cycle Management (Gürlek, 2014).*

As can be seen, project cycle management encompasses management related issues in any organization. In order for a project to be successful, project management must be organized by associating it with management and business functions, job descriptions must be made, and authority and responsibility relations must be determined (Yurtcan, 2008).

Therefore, like every management activity, project cycle management can gain effectiveness and success by the effective fulfillment of management functions. Considering that the project is a management process, the application of new management approaches and techniques such as total quality, strategic management, benchmarking and performance management in project management will further increase the effectiveness of management functions.

One of the most important steps of the project process is the determination of the project subject. At this stage, students start solving a problem they have encountered by choosing a topic. Teachers need to help students choose projects where they can develop their problem-solving and critical thinking skills. In this way, students can develop their scientific process skills and research skills (Eslek, 2015). Project cycle management includes some functions related to management for the effectiveness of project management, as well as the functions in which the institution and the organization operate.



Figure 2. Concept of Project Cycle

Project is the set of activities planned for the realization of clearly defined objectives in a certain place, within a certain time, with a certain budget. It directs the activities to a specific goal, enables time and resource planning, enables monitoring and evaluation, helps to find resources, enables to be informed about the risks and obstacles to the achievement of the objectives and to take precautions, facilitates the expression of the idea and participation in the activities, increases the sustainability of the results. .

It is a systematic set of methods used in the preparation, implementation and evaluation of projects and programs, based on the logical framework approach. It refers to all the stages from the emergence of a project idea to the completion of the project.

One of the most important points that should not be forgotten when considering the concept of the project is that the concept of the project is not a static and single-stage event, but a dynamic and multi-stage process. Projects are formed as a result of the combination of various successive stages and mature through the feedbacks between the stages (Albayrak, 2012).

All the stages or the whole process that creates a logical sequence from the development of the projects as an idea to their evaluation are called “Project Cycle” or “Project Cycle”. A project cycle in the classical

sense consists of the following stages;

- Project development
- Preparing project
- Project analysis
- Project finance
- Project implementation
- Project evaluation

Each stage in the project cycle provides an important foundation for the success of the next stage. A successful project is realized by considering the whole process from idea level to post-completion evaluation. These stages, which are closely related to each other and need to be considered holistically, should be taken into account in the decision-making process. Transition from one of these stages to the other requires a definite and clear decision (Ayanoğlu et al, 1996). Necessary decisions for each stage, who will take responsibility for these decisions, the information that forms the basis for taking decisions, the work to be done and the criteria to be used in making the decisions should be determined in detail (Albayrak, 2012).

Since the 1950s, development efforts have been characterized by projects or programs aimed at improving the quality of life of society. Despite the use of extraordinary physical and human resources in these projects and programs, most projects/programs yield results that do not meet expectations. Projects cannot meet the primary needs of the communities they aim to benefit from, predicted outputs cannot be produced, cannot be made permanent in cases where they are produced, project costs become higher than predicted, the times foreseen in practice are exceeded, and sometimes unforeseen and undesirable outputs can be produced.

In the last thirty years, due to the reasons mentioned, the need for new project techniques has increased, and in this direction, some tools have been developed to eliminate failures and strengthen project management in order for projects to reach their goals. While project management techniques used to include only some planning techniques, it has now become an integrated discipline that has expanded its scope gradually, from teamwork to communication, from data analysis to problem solving, from reporting techniques to monitoring, from auditing to evaluation (Pamukçu, 2015).

3. Benefits of Project Cycle Management

If we list the benefits of project cycle management;

- It helps to reduce the inadequacies in the design and preparation of the project,

- Ensures that the project is relevant to the needs of target groups,
- Ensures that the impact of the project is continuous,
- Allows all stakeholders to participate in the design and implementation stages,
- It ensures that risks and success criteria are taken into account.

4. Stages of Project Cycle Management

Project cycle management consists of 6 basic stages. These stages are:

1. Determining the Project Idea: It is the first starting point where the ideas related to the project are put forward and designed. To make this possible, a preliminary research is required. Projects should usually focus on a single topic; otherwise, the issues will be scattered and project management will be difficult (Davis, 1995).

2. Formulation of the Project: It is the preparation of the project text and budget for evaluation by the funding agency by revealing all the details about the project after the project idea is determined. As a result, the relevant institution will decide to provide funding for the project. Formulation of the project; It is a process that is taken to help meet the expectations and needs of stakeholders by planning to bring together knowledge, skills, necessary tools and innovative techniques (PMI, 1996).

3. Preliminary Evaluation: This is the stage where the project proposal, whose formulation has been completed, is evaluated by the relevant institutions. During the preliminary evaluation of the project, the strategic plans and visions of the organizations involved in the project should be researched, and the evaluation should be carried out in line with these resources (Munns and Bjeirmi, 1996).

4. Project Financing: It is the stage where the financing agreement is made between the institution that provides the funding source for the project that has passed the preliminary evaluation and the institution that will carry out the project. At this stage, it is recommended to review the project objectives and budget.

5. Implementation of the Project: This is the phase of the implementation, monitoring and evaluation of the resources and activities envisaged in the project within the timeframe included in the financing agreement. In the implementation of the project, it is very important to ensure effective coordination and cooperation between stakeholders (Baker and Fisher, 1988).

6. Evaluation: It is the stage of evaluating the results and impact of the project at regular intervals throughout the project and after the project

ends. After the evaluation phase, it is recommended to make minor changes in the project in a way that will not harm the workflow and cooperation culture of the organizations (Kerzner, 1992).

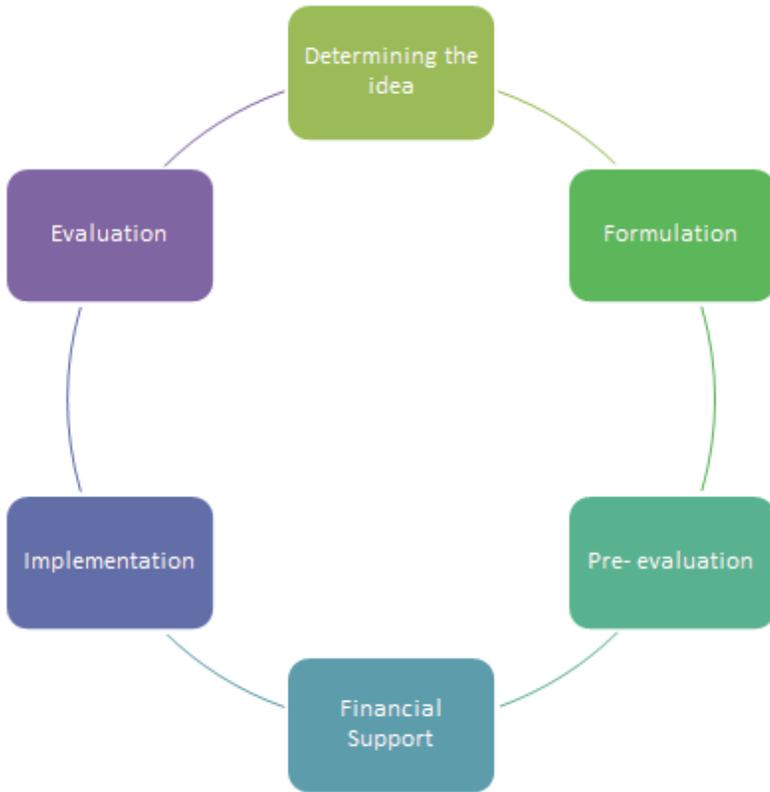


Figure 3. *Project Cycle Management*

5. Objectives of Project Cycle Management

The objectives of project cycle management are listed below:

1. To improve the quality of project design,
2. To increase application efficiency,
3. To guarantee the benefit to be provided,
4. To take care of its continuity.

6. Principles of Project Cycle Management

According to the research conducted by (Pinto and Slevin, 1988), if we list the basic principles of project cycle management;

- Incorporating the stages of due diligence, problem analysis and solution generation into the design,
- Reflecting the real problems of target groups,
- Demand-oriented solution production,
- The benefits of the project purpose are clear, feasible and realistic,
- Balanced distribution among the final beneficiaries,
- Focused on the continuity of the benefit,
- Ensuring the participation of all stakeholders,
- Relevance of results and activities for purpose,
- The monitoring and evaluation criteria for the purpose and results are clear, they create a verifiable effect, the result can be controlled,
- Anticipating the constraints and risks in front of the implementation of the activities,
- Anticipating the necessary resources for the realization of the activities,
- Production of standard and high quality key project documents and reports (monitoring, evaluation, financial reports, etc.),
- Implementation of the logframe approach.

7. Logical Framework Approach

It provides systematic and logical thinking and helps to show interactive relationships. The tool for this approach is the logframe matrix. The logframe and the logframe matrix are different. The matrix is a four-row and four-column visual planning tool that displays the results of the findings from the logframe approach. The logframe increases effectiveness and therefore project success; because the synonym of success is effectiveness (Belout, 1998).

8. Logical Framework Matrix/Table

The product that emerges at the end of the planning process is essentially a painting. This table, called the logframe, presents almost all the information about the project in a concise form.

The logframe table is effectively used and updated not only during the development phase of the project, but also during the execution of the project, making it easy to understand and monitor by people outside the project, such as funding agencies. The important criteria used in the monitoring and evaluation of the project are the measurable indicators in this table.

According to (Atkinson, 1999), with the logical framework approach;

- Why the project was carried out (Scope of the Project),
- What the project is expected to achieve (Scope of the Project and Indicators),
- How the project will achieve this (Activities and Tools),
- Which factors are important to the success of the project (Assumptions),
- Where to find the necessary information to evaluate the success of the project (Verification Sources),
- Which tools are required (Inputs),
- What will be the cost of the project (Costs),
- What precondition(s) must be fulfilled in order for the project to start (Prerequisites) are answered.

9. Project Stages

In line with the work of (Winch, 2010), we can consider the stages of the project in two basic stages as analysis and planning. These stages are;

a.) Analysis Phase

1. Problem Analysis
2. Stakeholder Analysis
3. Target Analysis
4. Strategy Analysis

b.) Planning Phase

5. Logical Frame Matrix
6. Action Plan
7. Budget

9.1. Problem Analysis

It is a structural examination that enables the undesirable aspects of the current situation to be revealed in a cause-effect relationship. The problem analysis process is a phase where stakeholders are in communication and cognitive and metacognitive processes are processed (Grave and Boshuizen, 1996). During the problem analysis stages;

- Priority problems for stakeholders are discussed by brainstorming method,

- Problems related to the subject and undesirable situations are randomly listed,
- The most important issue among the problems determined as a result of the discussion is considered as the initial problem,
- Other identified problems are associated with the selected problem in a cause-effect relationship,
- A diagram is created by clearly stating the problems and sub-problems,
- The diagram is reviewed with all stakeholders.

9.2. Stakeholder Analysis

Individuals, institutions or groups that are directly or indirectly, positively or negatively affected by the project and/or affect the project are called stakeholders. Stakeholder analysis, on the other hand, is the determination of all stakeholder groups that may be affected by the current problem or possible project, their relations with the problem/project, their strengths and effects, and their participation strategies. Stakeholder analysis is used when analyzing problems, setting goals and choosing strategy. In the process of stakeholder analysis, it is necessary to clearly define who the stakeholders are, categorize the stakeholders and distribute the responsibilities, and regulate the relations between the stakeholders (Reed et al., 2009).

Different Types of Stakeholders

Project stakeholders are divided into two groups as beneficiaries and project partners.

1.) Beneficiaries

a) Target Audience: It consists of individuals and institutions that will be directly and positively affected by the project activities.

b) Final Beneficiary: It consists of individuals and institutions that will be positively affected in the long term and indirectly on a social or sectoral scale.

2.) Project Partners

They are the parties implementing the project. Project partners can also be selected from among the target audience groups. Partners are the parties that carry out the project activities and undertake all the responsibilities and costs.

Stakeholder Analysis Stages

- Identifying stakeholders,
- Identifying the interests and interests of stakeholders,
- Identifying the strengths and influences of stakeholders,
- Establishment of stakeholder engagement strategy.

9.3. Target Analysis

It is the process of defining the future situation, verifying the hierarchy between goals, and schematically showing the relationship between intermediate tools and results in case the problems identified in the problem tree are resolved.

During the goal analysis, it is imagined that the negative situations revealed in the problem analysis have become positive. In this way, the changes that will be caused by the project to be realized and planned will be determined.

9.4. Strategy Analysis

In its simplest definition, strategy analysis is the process of determining possible strategies for the realization of goals. This is the stage where the project owner or institutions recognize and define their capacities. In strategy analysis, individuals or institutions need to reveal their abilities, strengths and weaknesses. One of the most important steps to be taken before proceeding to the planning stage is to determine which targets the project will lead to. The tools to be used in the strategy analysis process are the determination of performance indicators, targets and values (Grant, 2016).

Elements to Consider During Strategy Analysis:

- Availability of resources
- Existing capacity
- Political flexibility
- Activity
- Social acceptance
- Contribution to reducing inequalities
- Complementarity with other projects on the same subject
- Urgency

9.5. Logical Framework Analysis

It is used in the stages of determining the project need, designing, implementing, evaluating and auditing the project. The logframe matrix/

table is used in the logframe analysis process. Logical analysis should create a hierarchical order among the targets, and the lower level target should meet the requirements of the next target level (Baccarini, 1999).

The product that emerges at the end of the logframe matrix/table planning process is, in essence, a table. This table, called the logframe, presents almost all the information about the project in a concise form. The logframe table is effectively used and updated not only during the development of the project, but also during the execution of the project, making it easy to understand and monitor by people outside the project, for example funding agencies. The important criteria used in the monitoring and evaluation of the project are the measurable indicators in this table. The first column of the logframe table consists of the project's objectives at different levels. These goals are the goals that the project is expected to achieve in the long, medium and short term. In the table, each goal is placed in such a way that it contributes to the realization of the next goal. There is a logical order in the table as the top-down ordering of the targets is based on the parent-child relationship.

9.6. Activity Plan

It breaks down the necessary details to perform the activities. Clarifies the sequence, duration and priority of activities. Assigns implementation and management responsibilities. Clarifies targeted products and/or services. According to a study conducted by (Johnson et al, 2004), the stages of preparing an action plan;

- Listing the main activities,
- Detailing the activities,
- Determining the sequence of activities and their dependencies,
- Determining the start, implementation and completion times of the activities,
- Determination of duties and responsibilities.

Gantt Chart is used for effective planning of project activities. The Gantt Chart includes the project activities that need to be completed, the logical sequence of the activities, the dependencies between the activities, and the start/end times of the activities. The chart shows the planned and actual progress in the activities along the horizontal time axis. It is an effective and easy-to-read chart that shows the actual status of each activity compared to the planned progress. It helps to control and monitor the project activities. It provides to take precautions before the implementation process of the activities begins.

9.7. Budget Planning

It is a systematic that shows how the financial resources of a project will be used and distributed among activities. The budget consists of three parts: “Operating Budget”, “Expected Financial Sources” and “Justification of Costs”.

Considerations when preparing a budget:

- The project budget should be easy to understand.
- The budget should reflect actual costs.
- Care should be taken to avoid double costing for a resource in the project.
- The organization submitting the project proposal should be able to meet the co-financing contribution in the budget.
- All items included in the budget should be documented.
- Sufficient resources should be allocated in the budget to carry out each activity.
- The costs included in the budget must be acceptable by the funding agency.
- A system that monitors the expenditures made according to the activities completed during the project implementation phase should be established.

References

- Albayrak, B. (2004). *Proje yönetimi ve analizi*, Nobel Yayın Dağıtım, Ankara.
- Atkinson, R. (1999). Project management: Cost, time and quality, two best guesses and a phenomenon. *International Journal of Project Management*, 17, p.337-342.
- Ayanoğlu, K., Düzyol, C., İltter, N., Yılmaz, C. (1996). *Kamu yatırım projelerinin planlanması ve analizi*. Kalkınma Bakanlığı Yayınları, Ankara.
- Baccarini, D. (1999). *The logical framework method for defining project success*. Project Management Institute Curtin University of Technology, Perth, Australia
- Baker, B., Fisher, D. (1988). *Factors affecting project success*. Project Management Handbook. Van Nostrand Reinhold, New York.
- Belout, A. (1998). Effects of human resource management on project effectiveness and success: Toward a new conceptual framework. *International Journal of Project Management*, 1, p.21-26.
- Davis, K. H. (1995). Logical framework analysis: A methodology to turn vision into reality. *AIPM National Conference*, Adelaide, p.393-397.
- Ece, E, Kovancı, A. (2004). Proje yönetimi ve insan kaynakları ilişkisi. *Havacılık ve Uzay Teknolojileri Dergisi*, p. 75-85.
- Emrealp, S. (2013). *Belediyelerde proje yönetimi*. T.C. Başbakanlık Toplu Konut İdaresi Başkanlığı Yayını, Kent Basımevi, İstanbul.
- Eslek S. (2015). *Fen bilgisi öğretmen ve öğrencilerinin proje hazırlama konusundaki bilgi ve becerilerinin araştırılması: Bu benim eserim proje çalışması*. Yüksek Lisans Tezi. Dokuz Eylül Üniversitesi, Eğitim Bilimleri Enstitüsü, İzmir.
- Grant, R. M. (2016). *Contemporary strategy analysis: Text and case*. Great Britain by TJ International, Padstow, Cornwall.
- Grave, W. S., Boshuizen, H. P. A., Schmidt, H. G. (1996). Problem based learning: Cognitive and metacognitive process during problem analysis. *Instructional Science Journal*, 24 (5), p. 321- 341.
- Gürlek, T. B. (2014). *Yenilikçi proje yönetimi değerlendirmesi*. Hayat Yayınları, Ankara.
- Johnson, K., Hays, C., Center, H., Daley, C. (2004). Building capacity and sustainable prevention innovations: A sustainability planning model. *Journal of Evaluation and Program Planning*, 27 (2), S. 135- 149.
- Kerzner, H. (1992). *Project management: A systems approach to planning, scheduling and controlling*. Van Nostrand Reinhold, New York.

- Munns, A. K., Bjeirmi, B. F. (1996). The role of project management in achieving project success. *International Journal of Project Management*, 14 (2), p. 81-87.
- Öktem, G. (2013). Firmalar arası proje yönetimi etkinliği: Uygulamalı bir çalışma. *Uluslararası Hakemli Beşeri ve Akademik Bilimler Dergisi*, 2(3), p.48-62.
- Pamukçu, T. A. (2015). *Proje yönetimi*. Kubbealtı Yayıncılık, Ankara.
- ISO 10006- E. (1997). Quality management-guidelines to quality in project management.
- Pinto, J. K., Slevin, D. P. (1988). Critical success factors across the project life cycle. *Project Management Journal*, 3(1), p. 67-75.
- Project Management Institute. (1996). *A guide to the project management body of knowledge*. PA: Project Management Institute, Upper Darby.
- Reed, M. S., Graves, A., Dandy, N., Posthumus, H., Hubacek, K., Morris, J., Prell, C., Quinn, H., Stringer, C. (2009). Who is and why?: A typology of stakeholders analysis methods for natural resource management. *Journal of Environmental Management*, 90 (5).
- Winch, G. M. (2010). Governing the project process: A conceptual framework. *Journal of Construction Management and Economics*, 19(8).
- Yurtcan, E. (2008). *Kamuda proje yönetimi uygulamasında etkinlik sorunu: Es-kişehir’de bir araştırma*. Yüksek Lisans Tezi. Dumlupınar Üniversitesi Sosyal Bilimler Enstitüsü, Kütahya.

Chapter 2

ARE ETHICS CODES A MAGICAL AMULET OF PROTECTION?: EVALUATION OF ETHICS CODES IN ORGANIZATIONAL ETHICS WITH THE EMPLOYEE DIMENSION

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1. INTRODUCTION

Since the beginning of coexistence, ethics, morality and right and wrong have been one of the most frequently discussed issues in the history of humanity. While the subject is sometimes viewed from a religious/spiritual perspective, sometimes it is approached from a managerial and regulatory perspective. It has not been easy to name and apply this concept from any point of view. The importance of the concept of ethics emerges more in the process experienced with the effect of new classes formed with the industrial revolution. With a basic but inclusive perspective, ethics is personal thinking about how to achieve a good life with others, makes a good/bad distinction, tries to give meaning to behaviors with a philosophical perspective, and questions the concepts of right-wrong, duty-obligation, social responsibility (Usta, 2011).

While ethics is a social science subject related to moral principles and social values, “Business Ethics” has evolved as the study area of appropriate business policies and practices related to potentially controversial issues such as corporate governance, transparency, bribery, discrimination, corporate social responsibility and fiduciary responsibilities. (Tutorialspoint, 2015). Business scandals that have increased significantly in recent times, emerging corruption allegations and reports, extremism even in the largest enterprises have made business ethics a subject to be discussed (Doğan, 2009). In parallel with this, management mentality has become a vital concern for society in the past few decades. Looking at the research, it is noteworthy that the public does not have a positive opinion about management ethics and business. The management science community needs to make significant efforts to reverse this situation. Because if there is no intervention, unethical behaviors will begin to be accepted as normal behaviors. Subsequently, it will spread to other areas and turn into an epidemic, which will further complicate the situation (Demirkiran, 2021). It should be understood what business ethics means, why it is important and how it should be integrated into the decision-making process (Jamnik, 2011). At this point, ethical codes emerge to meet the needs of organizations.

The ethical perception and practices of the organization and management perhaps affect the employees the most among their stakeholders. Since the beginning of the employer-employee relationship, the issue of ethics has had a critical position between the two parties. The interdependence and internalized structure of both sides make the situation even more complicated. While legal measures and practices create standards, other psychological expectations are shaped and emerging. In this context, the approach of organizations, especially large organizations that set an example for other organizations, is an element that is curious

and followed in terms of both researchers and the public. In this study, ethical codes and organizational ethics concepts will be evaluated from the perspective of the employee in the context of the literature.

2.CONCEPTUAL FRAMEWORK FOR BUSINESS ETHICS AND INSTITUTIONALIZATION OF BUSINESS ETHICS

Business ethics is a very broad interdisciplinary subject that covers a wide variety of normative issues for the business world, but is also misleading in many ways. In its simplest view, it covers the basic content of how individuals in the business world should behave or what principles they can apply to negotiate moral dilemmas at work (Norman, 2013). When considered in a broad context, it would be more appropriate to focus on the basic framework rather than focusing on the definition of the concept. If we understand the concept of business ethics, it will be useful to evaluate ethical codes.

2.1. Conceptual Framework for Business Ethics

The word ethics, from the etymological point of view, is of Greek origin, derived from the word “ethos-ethikos” and means “moral system, tradition-custom, character, human behavior, principle” (Ülgen and Mirze, 2004: 440). Ethics has been discussed in terms of content and understanding, which has been discussed in various aspects for centuries. Although there is no clear consensus on the concept, ethics with its most basic principles is personal reflection on how to ensure a good life with others. In this sense, ethics distinguishes between good and bad. Ethics questions the concepts of right-wrong, duty-obligation and social responsibility by trying to give meaning to behaviors with a philosophical perspective (Usta, 2011). In this context, ethics is not only in the dimension of human relations but also in a very broad perspective. However, for the business world, when considered in the sociological dimension, ethics is the values and judgments of people based on the relationships they establish as individuals and as a community; It can be expressed as a philosophical discipline that deals with concepts such as good-bad, right-wrong in their moral context (Kaplan, 2009: 344).

Moving away from the conceptual dimension and perceiving the main purpose of ethics in a sense will help to understand the next chapters. The main purpose of ethics is to illuminate human behavior in terms of its moral quality and to show that moral action is not an arbitrary action that a person can do if he wants to, but rather is an expression of an indispensable quality of his existence as a human being, that is, to teach people to love (Pekkan and Çavuş 2014). Considering within the framework of this purpose, it is a curious question why the importance of business ethics and ethics is increasing day by day, although it is an apparently costly process for the business world. Nalbant (2005:199) listed them in his study as follows;

- Perceiving the discussions on ethics and business life not as a threat or weakness, but as an extension of the efforts of today's industries to achieve excellence and high quality,
- The spread of the idea that relations between individuals and organizations are based on mutual trust and respect for each other's interests,
- Recognizing the fact that good morals are equivalent to good work,
- The growing need to balance the interests of various interest groups,
- Relates to social responsibility created by public pressure to operate ethically.

As in Nalbant's (2005) explanation, business ethics and business ethics are often mentioned together. However, when examined in terms of content, it is seen that there are deep relationships as well as fundamental differences. Gök(2008:9) tabulated these differences in his study as follows;

Table 1: *The Relationship Between Business Ethics and Business Ethics*

DIMENSIONS	Business Ethics	Business Ethics
Starting point	Thinking And Philosophy	Religion And Religious Beliefs
Contents	Universal Norms	Traditions And Customs
Reference	Legal Philosophy	Moral Philosophy
Qualification	General, Applicable To All	Variable From Society To Society
Scope	The Rules Cover The Whole	Covers The Code Of Conduct

Source: Gök, S. (2008), İş Etiği İle İş Ahlakı Arasındaki İlişki ve Çalışma Yaşamında İş Etiğini Etkileyen Faktörler, Uluslararası İnsan Bilimleri Journal, 5(1): 1-19.

When the table above is examined, it is understood that business ethics tends to be more normed and enacted than business ethics and has a more general structure. With this feature, it can be effective in creating a more permanent and auditable structure. When the development of business ethics is examined, this feature is supported. Business ethics came to the fore in the USA in the 1960s, and in the 1980s, "Code of Ethics", "Ethics Committees", "Ethics In-Service Training and Consultancy Units" were formed in all large businesses and companies in the USA (Güven et al., 2004: 800). Five important factors affect ethical behavior in organizations. These factors can be stated as follows (Hitt, 1990: 136):

- Behaviors of superiors,
- Behaviors of individuals in the organization,
- Ethical practices in the industry or profession,
- The moral climate of the society,
- Existence of formal organizational policies.

2.2. Unethical Behaviors Towards Employees

Unethical behaviors are handled in a triple dimension. Lefkowitz (2006) evaluated these as rudeness, organizational misbehavior and unethical behavior. With a simpler and holistic view, Gül (2006) expresses unethical behaviors as conflicts, aggressive behaviors and behavioral problems that occur for various reasons within the organization in his study.

Employees, who are the source of human capital, which is the most valuable capital of the organization, are the most frequently interacting stakeholders of the organization's management. Along with the perception of being a party from the past, mutually unethical behaviors can be exhibited within the organization. When the domestic literature is examined, the behaviors towards the employees under the main headings are compiled and shared with their explanations in the table below (MEGEB, 2006; Gül, 2006 and Dumanlı, 2013);

Table 2: *Unethical Behaviors Against Employees*

Discrimination	Discrimination is acting with prejudiced attitudes. Any unjust and harmful behavior against a group of people is defined as discrimination. Open discrimination; traditionally based on gender or racism. Institutional discrimination; Even if an organization offers an impartial election process, it occurs as a result of the non-representation of women or minorities in this organization with other groups (MEGEP, 2006).
Physical and Sexual Harassment	Physical abuse is a product of violence. The most common type of physical abuse is beating. Sexual harassment, on the other hand, takes place in a wide spectrum, starting with cursing at children, young people, women, and gesturing (MEGEP, 2006).
Psychological Harassment	Bullying, persecution and victimization, intimidation, threatening, exclusion, harassment about religion, race and country, leaving disturbing messages, obstructions regarding work equipment, hostile behavior, humiliating jokes Behaviors such as naming, not speaking intentionally can be given as examples (Dumanlı, 2013:74).
Grind	It is used in the sense of excessive torture to a person materially or spiritually. Torture or torture includes not only physical pain but also psychological pain. In addition, severe problems in business life affect the environment and private life of the individual (MEGEP, 2006).

Favoritism	Any favoritism that managers will make among employees in matters such as wages, promotions, workload, vacation time will adversely affect the performance of the employees and therefore the organization. Because, while the trust of the employees who witness the favoritism of their managers in their managers will be destroyed, feelings such as jealousy and grudge may occur among the employees in connection with the favoritism (Dumanlı, 2013: 74).
Misdirection and Blocking	The concept of being a hindrance; misdirection while aiming to stop the right actions to be taken; It is related to the incomplete or incorrect transfer of information and documents. It is seen that these types of behaviors are generally caused by the desire to hold power and the feeling of "I do everything best" (Gül, 2006).
Selfishness	Selfishness means thinking and directing developments self-centered without thinking about others. The manager or employee will refuse to share, assuming that he or she alone has needs. The selfish point of view interprets the extent to which the events that develop will affect his gain and loss. The needs of others are ignored
Dogmatic Behavior	Dogmatism is the adherence to a previously held belief, even if it loses its correctness over time. A dogmatic manager can become attached to the concepts and beliefs he has gained in his profession in a way that will not break with him over time. A generalized dogmatism can make an employee hostile to a race, a religion, a nation, a society, a professional view. A dogmatic person does not change his own concepts and beliefs and does not adopt innovations (MEGEP, 2006).
Violation of the Right to Privacy	The right to privacy has been expressed as a right that determines what kind of information individuals will disclose about themselves. However, electronic surveillance devices, virtual theft methods using digital technology and the existence of very small volume of listening devices have made it difficult to protect the privacy. Along with these, another reason is; The constant suspicion of the managers and their efforts to obtain information about them also damage the protection of this right (Dumanlı, 2013: 77).
Intimidation-Fear	It is defined as the unethical challenge of managers or employees with the same status to influence other people and/or groups outside of their legal authority (Gül, 2006).
Gossip	In general, gossip is speech made to slander others, to denigrate, condemn or accuse people without knowing whether they are true or not. Gossip causes a great loss of time and energy in the workplace, and causes human relations to become tense and deteriorate (MEGEP, 2006).
Exploitation (abuse)	Exploitation is the unfair use of people or objects. It is aimed at gaining profit. There are various types of exploitation (MEGEP, 2006); <ul style="list-style-type: none"> • The exploiter can coerce or deceive the exploited person. • The exploited person may voluntarily consent to the actions taken. • The exploited person's purpose is to gain benefits and secure his earnings.
Bigotry	Bigotry describe people who are intolerant and loveless, who do not allow discussion about their beliefs and thoughts, who believe that the only right thing is their own truth, who heavily attack those who do not think like them. The bigoted attitude of the managers prevents the development and innovation of the employees (MEGEP, 2006).

Source: Compiled from MEGEB(2006), Gül(2006) and Dumanlı(2013)

2.3. Evaluation of Turkish Business Ethics and Ethical Values from the Perspective of Employees in the Basic Context

Employer-employee relations have always been active and variable since the industrial revolution. In fact, these relations have affected the socio-political structures and management styles of the countries. Parallel to the transformations taking place in the world, there have been periods of ups and downs in our country. However, the late reflections of the industrial revolution have differentiated the processes from other western countries. The business ethics dimension has started to take shape almost from the first entry to Anatolia. Since the worker-employee relationship and classes did not exist at that time, the first work ethics infrastructures were established in the Fütüvvet and Ahi organizations. Evaluation of Turkish business ethics and ethical values in the basic context with their different dimensions is shared in the table below;

Table 3: *Evaluation of Turkish Business Ethics and Ethical Values in the Basic Context from the Perspective of Employees*

Period		
Fütüvvet Organization Period	As a part of the Islamic tradition, “Fütüvvet”, which was active in the Turkish and Iranian environment, was born as a “ideal of youth” living mostly among trade and art connoisseurs. The works that deal with the idea and ideal of the Fütüvvet Organization, specify its procedures and rules, and are in the form of regulations and regulations for the members of the Fütüvvet Organization are called “Fütüvvetname”. Adhering to the organizational structure, the moral qualities that the futuwva owner must comply with have been determined. The number of these qualifications varies between 33 and 130 according to the futuvetnames (Kinran, 2006).	Due to the period, although the working class has not yet been formed, there are production assistants such as apprentices, journeymen and apprentices who are their pioneers. Ethics has been recorded in written context by being bound by clear rules to be followed with this organization. Considering even the 6 most basic rules determined, “Be generous, have knowledge, have haya... etc.” It is emphasized that the assistants next to him are taught science, that his rights should be given, that he does not commit sexual and indecent attacks and that the result of these is being excluded from the society.
Ahi Organization Period	The Ahi organization is a Turkish artisan organization that lived in Anatolia in the Middle Ages. Turkish hospitality added to the rules of “fütüvvet” and the common principles and behaviors of Turkish art and profession experts in Anatolia are called “Ahilik”. The most important reason why the Ahi organization has continued its effectiveness in such a long period is the strong organization in the structure of the institutions that make up the Ahi unions and the unique control mechanism it has established on its members (Kinran, 2006).	When the studies on the functions of the Akhism are examined, one of its social functions is “educational function”; With the dimension of vocational training for the training of apprentices in the workplaces, and in the “Function of Regulating Labor Relationships”, it formed the prototype of the “individual labor law”, which became a scientific discipline in industrialized countries towards the end of the 19th century and aimed at regulating the relations between the worker and the employer. There is a perception of “horizontal solidarity” between the master, apprentice and journeyman. With its “Social Security Function”, it has become the forerunner of today’s “social security” institutions, with the same arrangement as the “Orta Sandığı” (Mahiroğulları, 2008).

Post-Ahilik Ottoman	<p>With the weakening of the social aspect of the Ahi organization and the strengthening of its political aspect, the institution went bankrupt in function and was closed by the power of the state. Capitalist powers started to fill the void created by the effects of the industrial revolution. As in all the structures of the state that entered the collapse period, great shocks and destructions have occurred in the dimension of business ethics.</p>	<p>The state has had to put business ethics into the background, sometimes within the framework of the West's own regulatory efforts. The working principles of the newly formed working class within the framework of base values began to take shape.</p>
1923-1950 Period	<p>In the 1923-1950 period, reforms and regulations were made in various fields to form the foundations of the Republic. Within the scope of the strategic goals of modernization and industrialization, economic issues were given importance and priority, and steps were taken to create a national industry. In these first steps, the private sector has succeeded in gaining a place for itself. With the 1929 global economic crisis, our country switched to statism (TÜSIAD, 2009).</p>	<p>The economic order, which was completely destroyed after the war, was tried to be nationalized and revived in a real context, and external-based internal elements that interfered with the economy and politics were tried to be eliminated. As a party to many issues, the state has tried to shape the necessary employee rights through law and has shaped ethical values within the framework of the social state.</p>
1950-1980 Period	<p>Like the liberal economic approach of 1923-1929, which was abandoned with the great economic crisis and shelved in the face of statism, the second liberal economic approach after 1950 left its place to “planned development” and “mixed economy” with the 1960 military intervention, and the state-dominated structuring once again left its place. This “guardianship” approach, which provides various advantages to the political and bureaucratic elites, led to the spread of partisanship, staffing, favor, bribery and corruption in public administration, especially in the 1970s (Berkman, 1983 as cited in TÜSIAD, 2009). Again, in this period, some of the labor unions became ideology-oriented organizations. Ethical problems have also become inevitable in this environment and context. (TUSIAD, 2009).</p>	<p>In the cold war that started after the World War II, the country started to experience chaos as a management approach, which was reflected in business and economic life. The sudden transition to the liberal system had terrible consequences in terms of ethics, and rightly employee movements began to appear. In this period when the unions gained strength, a struggle was fought to prevent the violation of ethical rights and, more importantly, to gain personal rights. The start of employee movements will have positive results in terms of human resources management and ethical perception for the following periods. Because now the employee as a class has shown itself.</p>

1980-2001 Period	The preference of political decision makers, which has been going back and forth between statism and liberal economics since the 1920s, has been used in favor of the latter, this time for a longer period of time, after the 1980s. After the second half of the 1990s, the attempts to adapt to the European Customs Union brought about important transformations. In this period, Turkey had large budget deficits due to uncontrolled and arbitrary public expenditures and populist public supports, inflation reached dangerous levels, and as a result, it experienced major crises in 1994, 1997 and 2001. Reasons such as their arbitrary use, insufficient supervision, failure to realize administrative reforms, the slow functioning of the judiciary, and lack of transparency allowed the favor, bribery and corruption of the 1970s to continue after 1980, and “scandals” came one after another (TÜSİAD, 2009).	Some of the efforts of the state were abused due to external pressures and the wrong policies followed, however, the rights of the employees continued to be violated by the lack of control mechanism, bribery and dark collaborations. In the ethical context, the ongoing processes that work in the society have spread to all areas of life, especially the business world. Many mistakes were made in the process of dissolving statism. It can be stated that mass dismissals, income and wage injustice, violation of personal rights, overtime, and immoral approaches have become widespread.
After 2001	When the 1994 and 1997 crises were followed by the economic crisis at the beginning of 2001, the Turkish economy became very weak and fragile. After the 2001 crisis, it was aimed to operate the liberal economy understanding and practice, which was corrupted in the 1990s, in accordance with its essence (TÜSİAD, 2009).	With the European Union process, the laws regarding employee rights were rearranged and the control mechanism was tried to be strengthened. With the inclusion of global companies in the system, HRM practices have been strengthened as a result of understanding the value of knowledge and gold-collar employees. Ethical values have gained value in the name of retaining employees for the business world.

2.4. Institutionalization of Business Ethics

Organizations need norms in various dimensions in order to make their existence permanent, not to lose their existing organizational memories and to continue their activities in a certain order. At this point, institutionalization is presented as a solution in the modernist approach in order to ensure continuity. Institutionalization; companies, other than individuals; It is the process of forming a set of rules, norms and procedures, determining the methods of how to do things, and thus having a different form from other companies (Karpuzoğlu, 2002). Starting from the definition, it will be noticed that institutionalization can be used as a tool to embody abstract concepts and practices in the organization function in management. Academics and ethics researchers have also adapted this advantage to the idea of institutionalizing ethics.

Ethical responsibility includes behaviors that are not obligatory in the law and do not directly serve the economic benefit of the institution (Küçüköğlü, 2012). It is very possible that the ethical values determined in this context will be lost and forgotten only in verbal expressions over time and within the framework of the dilemma of the situations encountered. In a sense, the ethical values of the organization must be used, developed and

secured as a system. In other words, the fact that only the top management has ethical values does not mean that the organization is and will remain ethical. Apart from this, there are certain reasons that make it necessary or require the institutionalization of business ethics. The main ones are (TÜGİAD, 1992 and Karadut, 2014);

- The need for this structuring of the management staff,
- Professional life forcing this now,
- Public pressure and perspective on this issue,
- Developing and changing socio-cultural structure,
- Increasing awareness of individuals, tendency to protect rights and values
- Change in organizational structure and perception
- High costs created by ethical problems

Although ethical institutionalization transformation is a desirable structure, it is not easy to realize it. There are certain conditions and ways to be followed in the application process. Akkuş (2008:85) tried to determine the ways to be followed for institutionalization in business ethics in a simple scale, while Çotul (2019) interpreted Akkuş's work and shared the determined ways as follows;

- Businesses should clarify the philosophy on which their purpose is based. When this clarity is revealed, both the ethical framework of the business will be drawn and the control mechanism will be established.
- How the determined corporate philosophy will be adapted to corporate ethics should be clarified.
- Business managers are required to have exemplary behaviors and attitudes in order to disseminate the ethical codes determined by the institution.
- Business ethics codes and principles need to be aligned with other processes in the business.
- An ethical area open to continuous development and participation should be established.
- In order to maintain the established business ethics, the general ethical view of all business personnel should be strengthened.
- It should be ensured that the whole business adopts the competitive power that ethical principles will provide to the business.

In 2009, TÜSİAD had a report prepared in order to explain the

importance of the institutionalization of business ethics and related concepts. In this report, the roadmap of institutionalization of business ethics is summarized in parallel with previous studies as follows;

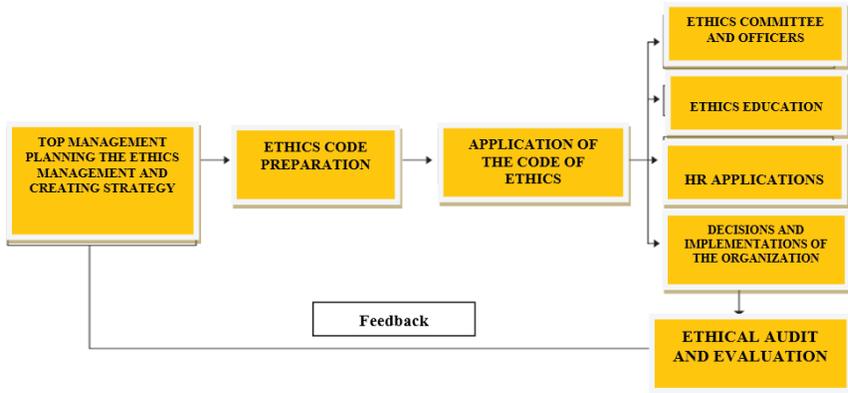


Figure 1: Institutionalization of Ethics

Source: Compiled from Öztürk and Cevher(2015) and TUSİAD(2009)

It is important that an employer community turns to this area and creates a guide report. As can be understood from the process shared above, ethical codes are the main instrument of the institutionalization of ethics in the theoretical context, which constitutes the main dimension of this study.

3. ORGANIZATIONAL ETHICAL STANDARDS AND ETHICS CODES

3.1. Ethical Code Concept and Content

Ethical codes, also called code of conduct or code of ethics, define the company's values, ethics, goals and responsibilities. A well-written code of ethics should also guide employees on how to deal with certain ethical situations. Every code of ethics is different and should reflect the company's ethos, values, and business style. Some codes are short, providing only general rules, and others are broad guides covering a wide variety of situations (Singh & Prasad, 2017). While defining ethical codes, quite different perspectives have been developed. Some of the definitions focus on the idea of setting rules, while others focus on developing behavior patterns. One of the main mistakes that should not be made when examining ethical codes is the perception that ethical codes only impose behavior patterns on the employees of the organization. While the aims of

creating ethical codes differ from organization to organization, it has been focused on similar titles. These are (Kolçak, 2012: 32);

- Increasing ethical expectations
- To legalize dialogues on ethics
- Preventing the abuse of authority in practices by encouraging ethical decision making
- To ensure that the behaviors are in a good way.

From this point of view, it is possible to understand it as a promise made by the organization to its stakeholders. But technically, it is transforming the behavior structure of the organization. While creating ethical codes, headings for as many interaction networks as possible should be looked at. It should not only focus on customers and products/services, but also titles for other stakeholders should be included in the ethical code. Öztürk and Cevher (2015) shared the framework in the ethical code at the level of domestic literature and practice, as in the table below;

Table 4. *Basic Ethical Code Framework at Local Level*

RESPONSIBILITY DIMENSION	CONTENT	EXAMPLE
To The Shareholders	It covers the ethical responsibilities of the company to its partners or shareholders. Emphasis is placed on financial ethics and equity of participation	We are committed to ensuring that all categories of shareholders are treated equally and to prevent preferential treatment for a category or a business.
To Customers	It covers the ethical responsibilities of the company regarding its customers. In the basic sense, the quality of the products and services offered, the attention shown to the customer and their ability to meet customer demands are emphasized.	We deliver our services on time and under the conditions we promised; We approach our customers within the framework of the rules of respect, honor, justice, equality and courtesy.
To The Employees	It covers the ethical responsibilities of the company towards its employees. Basically, it focuses on occupational health and safety, quality and welfare of the working environment, wages and working policies.	We ensure that employees' personal rights are fully and correctly used.

To Society	It covers the ethical responsibilities of the company towards the society in general. Socio-economic contribution to the human rights approach, from the perception of sponsorship and support to regional development.	Protection of democracy, human rights and the environment; education and charity work, the elimination of crime and corruption are very important to us.
To The Environment	It covers the ethical responsibilities of the company towards the natural environment. Emphasis is placed on non-polluting nature, producing environmentally friendly products or outputs, and sustainable environmental policies.	Beyond laws and regulations, it is responsible to society for protecting nature and using resources.

Source: Compiled from Öztürk and Cevher(2015)

3.2. The Importance and Structure of Ethical Codes in the Protection of Employees

Rules that are not based on values are unfounded, and in cases where the rules are not specified, the values remain empty. In other words, codes should not be just a “do-not-do list”, they should be based on the values on which the codes of conduct are based. In addition, it should be noted that codes that cannot be implemented will not be beneficial (Öztürk & Cevher, 2015). Before mentioning the advantages it provides to the employee, it is useful to look at the net benefits in a general context. Torlak(2012:169) gathered this under the following main titles in their study;

- Ethical codes provide group guidance if the person encounters an original situation,
- Ethical codes form the basis for the evaluation of professions and public expectations,
- Strengthens common sense of purpose among organization members,
- Professional reputation and public trust increase thanks to ethical codes,
- Maintains strong tendencies towards the profession,
- Defines sanctions, deters unethical behavior,
- Supports people who are under pressure to act unethically,
- It serves to organize discussions between members and non-members and between members of the profession.

When we direct the point of view from general to the employee, ethical codes not only bring various responsibilities and rules to the employee, but also offer advantages for their own basic regulations, working conditions

and human values. It is possible to compile them as follows;

- **Improved working conditions:** although basic occupational health and safety measures are guaranteed by law, these measures are assumed to be at a basic level. Improvements and commitments in this area in ethical codes will be effective on the employee in the most basic motivation process.

- **Increase in Relationship Quality:** Relationship channels that will be opened even in the process of creating ethical codes will bring new perspectives. However, the psychological contract nuances created by the existence of ethical codes are an advantage for the employee.

- **Economic Protection:** Remuneration, equal opportunity, job security, framing of working hours will provide gains beyond legal regulations in personal rights.

- **Increase in Quality of Life:** Steps that can prevent unwanted behaviors such as mobbing, sexual and physical harassment will indisputably have a positive impact on workplace peace.

Beyond these, codes that will satisfy the psychological and sociological aspects of the employee will affect organizational commitment and organizational spirituality. As mentioned in the sections above, while preparing ethical codes, the HRM department should be especially involved and ensure the sustainability and control of the codes. Human Resources Management should work to represent the ethics committee in organizations and ensure that the continuity of ethical codes, which fall under the responsibility of ethics committees, is maintained and that conflicts that may arise in the organization are resolved in line with ethical principles. For this reason, HRM should design and revise ethical codes by taking the opinions of employees (HR Focus, 2005). All ethical code processes that are not controlled and followed will not prevent the preparation of an expensive printed book. If the measurable standards of the ethical program are not integrated with the performance evaluation, rewarding and remuneration system, imbalance and injustice may occur in defining the developments that occur with the change in the organization (Weaver and Trevino, 2001:121).

CONCLUSION

Although the department of human resources management has evolved between periods in the historical process, it has never lost its role in providing communication between the company and human resources. This metaphorically resembles an improvised dance; Both the employee side and the employer side have different requests and they make their moves mutually. It will be enjoyable to watch such dances only if there

is harmony in between, otherwise it will not be different from a fight or a chaotic series of movements. It is ethics that brings harmony in this metaphor. Without ethics, there will be no rules of the game, and the strong will always crush the less powerful. In this context, not only laws but also ethical frameworks created in the individual and organizational context gain importance. Because, under certain conditions, gaps in the law may create opportunities for rights violations. In other words, even though it is in accordance with the commonly used laws, immoral behavior can be revealed. In such cases, ethical codes appear as written forms of psychological contracts to be made mutually. Ethical codes increase the credibility of the issues related to ethical processes in terms of employees, because in a way, they carry verbal expressions to a legal dimension. It provides a basis for the prevention of abuse of power, and essentially ensures that the ethical boundaries and framework of the existing organization are understood by the members of the organization. In all cases, there are mechanisms that protect the employee. However, it is an important step towards psychological commitment and performance, to be able to adapt to the organization in an ethical dimension and to make a promise to the employee in a metaphorical context and put it in writing.

In this study, the concept of ethics, ethical code is discussed from the perspective of the employee and examined in the context of the literature. In future studies, it is important to examine ethical codes in the context of companies from the point of view of the employees. In other words, it would not be wrong to say that the difference or similarity between what is written and what is applied will be an indicator of the validity of ethical codes in a cultural context.

REFERENCES

- Akkuş, H. (2008), İş Ahlakı ve İş Uygulamaları, İGİAD İş Ahlakı Symposium, İstanbul.
- Çotul, A. (2019), İş Etiğinin Kurumsallaşmasının İşletmeler Açısından Önemi, Avrasya Sosyal ve Ekonomi Araştırmaları Journal (ASEAD), 6(3): 81-88.
- Demirkıran, M. (2021), Sağlık Yöneticisi Adaylarının Görüşlerine Göre Akademik Etik Dışı Davranışların Nedenleri, International Journal of Society Researches, 11(18): 1394-1414.
- Doğan, N. (2009), İş Etiği ve İşletmelerde Etik Çöküş, Sosyal Ekonomik Araştırmalar Journal, 8(16): 179 – 200.
- Dumanlı, Y. (2013), Çalışanların İş Etiği Algılamaları Üzerine Bir Araştırma, Marmara University Institute Of Social Sciences Labor Economy And Industrial Relations Department, Master Thesis, İstanbul,
- Gök, S. (2008), İş Etiği İle İş Ahlakı Arasındaki İlişki ve Çalışma Yaşamında İş Etiğini Etkileyen Faktörler, Uluslararası İnsan Bilimleri Journal, 5(1): 1-19.
- Gül, H. (2006). Etik Dışı Davranışlar ve Ussallaştırılması: Devlet Hastanelerinde Bir Uygulama. Karamanoğlu Mehmetbey Üniversitesi Sosyal ve Ekonomi Araştırmalar Journal , 2006 (1) , 65-79.
- Güven, M., Büyükbeşe, T., Bakan, İ.. and Taşlıyan, M. (2004), KOBİ Yöneticilerinin İş Ahlakı ve Sosyal Sorumluluk Algılaması: K.Maraş KOBİ'lerinde Bir Araştırma, I.Kobiler ve Verimlilik Congress Book (11-12 December 2004), İstanbul Kultur University Press, Publication No: 43, 799-809.
- Hitt, W. D. (1990). Ethics and leadership: Putting theory into practice. Columbus, OH: Batelle Press.
- HR Focus: (2005) The Hands-On Tool For Human Resources Professionals”, April, 82(4): 11-14.
- Jamnik, A. (2011), The Challenges of Business Ethics - Management and the Question of Ethics, Tourism & Hospitality Management, 17(1): 141-152.
- Kaplan, Çetin (2009), Kamu Yönetiminde Etik ve Kamu Çalışanlarının Etik Kavramını Algılayışları, Süleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi Journal, 14(3), 343-355.
- Karadut, G. (2014). Etik İklimin ve Örgütsel Adalet Algılarının Çalışanların İş Tatminine Etkisi: Konaklama İşletmelerinde Amprik Bir Uygulama, Bahçeşehir University, Institute of Social Sciences, Master Thesis, İstanbul.
- Karpuzoğlu, E. (2002). Büyüyen ve Gelişen Aile Şirketlerinde Kurumsallaşma, Hayat Pub. İstanbul.

- Kınkan, Ş.B. (2006), İş Ahlakı ve Etik Değerlerin Türk İşletmeciliğindeki Yeri, Istanbul University Institute of Social Sciences, Department of Labor Economics, Master Thesis, Istanbul.
- Kolçak, M. (2012). Meslek Etiği. Murathan Pub., Ankara..
- Küçüköğlü, M. T. (2012), Etik Değerler ve Etiğin Kurumsallaşması, Hukuk ve İktisat Araştırmaları Journal, 4(1): 177-185.
- Lefkowitz, J., (2006), The Constancy of Ethics Admits the Changing World of Work, Human Resource Management Review, 16:245-268.
- Mahiroğulları, A. (2008), Selçuklu/Osmanlı Döneminde Kurumsal Bir Yapı: Ahilik/Gedik Teşkilatı ve Sosyo-Ekonomik İşlevleri, Sosyal Siyaset Konferansları Journal, 54: 139-154.
- MEGEP (2006), Tüm Alanlar Meslek Etiği, T.R. Ministry of National Education, Ankara.
- Nalbant, Z. E. (2005), İşletmelerde Sosyal Sorumluluk ve İş Ahlakı. Yönetim ve Ekonomi Journal, 12:193-201.
- Norman, W. (2013), The International Encyclopedia of Ethics. Edited by Hugh LaFollette, print pages 652–668., Blackwell Publishing Ltd. Published 2013, DOI: 10.1002/ 9781444367072.wbiee719.
- Öztürk, U. C. and Cevher, E. (2015), Yeşil İşletmeler Gerçek Mi? Çevre Duyarlılığı ve Etiği Kapsamında Etik Kodların İncelenmesi, Gaziosmanpaşa Üniversitesi Sosyal Bilimler Araştırmaları Journal, 10(2):145-162:145-162.
- Pekkan, N. Ü. A. and Çavuş, M. F. (2014), İnsan Kaynakları Yönetiminde Etik, Akademik Sosyal Araştırmalar Journal. 2(1): 542-548.
- Singh, C. and Prasad, M. (2017), Code of Ethics in an Organisation, International Journal of Application or Innovation in Engineering & Management, 6(5):138-142.
- Torlak, Ö. (2012). İşletmelerde Sosyal Sorumluluk ve Etik. Anadolu University. Pub, Eskişehir.
- Tutorialpoints (2015), Business Ethics, https://www.tutorialspoint.com/business_ethics/business_ethics_tutorial.pdf, Date of Access: 01.11.2021.
- TÜGİAD, 1992. İş ahlakı ve Türkiye’de İş Ahlakına Yönelik Tutumlar, TÜGİAD Pub., İstanbul.
- TÜSİAD (2009), Dünyada ve Türkiye’de İş Etiği ve Etik Yönetimi, <http://etik.gov.tr/wp-content/uploads/2019/03/tusiad-dunyadaveturkiyedeisetigiveetikyoneti.pdf>, Date of Access: 09.11.21.
- Usta, A. (2011), Kuramdan Uygulamaya Kamu Yönetiminde Etik ve Ahlak, Kahramanmaraş Sütçü İmam Üniversitesi İktisadi ve İdari Bilimler Fakültesi Journal, 1(2), 39-49.

Ülgen, H. and Mirze S. K. (2004), *İşletmelerde Stratejik Yönetim*, 2.ed, Literatür Pub, İstanbul.

Weaver, G. R. and Trevino, K.. L.. (2001),“The Role of Human Resources In Ethics/Compliance Management: A Fairness Perspective”, *Human Resources management Review*, 11:113-134.

Chapter 3

A HOLISTIC APPROACH TO MARKETING OF CULTURAL HERITAGE

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1. Introduction

Destinations around the world have natural and cultural resources. Societies exist and maintain their existence with their cultural capital (Bourdieu, 1986; Rossetti & Quinn, 2021). Protecting the cultural assets of different societies and making efforts to transfer them to the future is seen as a reflection of tolerance and dialogue. From the perspective of supply, cultural assets are disappearing day by day due to human and nature destruction and cannot be reproduced. From the perspective of demand, cultural assets attract visitors from the international regions and their visit rates are increasing to a great extent (Caserta & Russo, 2002). At this point, societies should strive to protect the current right of use of cultural assets and not to endanger the right of use of future generations. In today's age where goods, services, information and ideas are marketed, cultural assets or products are also marketed.

The marketing of goods and services and the marketing of cultural heritage differ from each other. The main mission and goals in the marketing of cultural assets or products is to preserve, development and promotion (Daenos & Punsalan, 2021; Tinkouv& Parvanova, 2021). At this point, the marketing of cultural heritage differs from other segments. In this study, it is aimed to benefit from different perspectives for the marketing of cultural heritage.

2. Cultural Heritage

It is thought that it is useful to express the meaning of the word culture before making a definition of cultural heritage. Culture is a complex word with hundreds of definitions (Tomlinson, 1991, p. 4). Different definitions of culture are encountered in disciplines. Each discipline redefines culture within its own field. However, the etymological origin of the word culture comes from the Latin verb "Cultura or Colera". Taylor (2010) has made a comprehensive definition accepted internationally by defining culture as the body of knowledge, belief, art, law, custom, tradition, habits and abilities that a person gains as a member of society. According to Harris (1971, p. 136) culture is the representation of the feelings, thoughts and behaviors that represent the characteristics of a group of people rather than individuals and that are influenced or gained through learning. According to another definition, culture is a socially passed heritage. (Boyd & Richerson, 1988, p. 33).

The meaning of the word heritage has a definition that is discussed in the same way as the word culture. (Herbert, 1989: 1). Heritage is defined as the history, traditions and characteristics of a country or a society that have been possessed for years and that are thought to represent an important part of that society or country (Thompson, 1996, pp. 699-700).

The United Nations Educational, Scientific and Cultural Organization (UNESCO) divides heritage into tangible and intangible. The tangible heritage is divided into two as natural and cultural heritage. Natural heritage; It is defined as “natural monuments composed of physical and biological formations or groups of such formation, with exceptional universal value in terms of aesthetics or science”. Cultural heritage: classified as “monuments, building groups, sites of exceptional universal value” (Unesco, 1972, p.2). Intangible cultural heritage is expressed as: “practices, representations, narratives, knowledge, skills and related tools, materials and cultural spaces that communities, groups and in some cases individuals define as part of their cultural heritage” (Unesco, 2003). Today, heritage exists in many different forms. The heritage areas are listed in Table 1.

Table 1: The Fields of the Heritage

Nature	Nature reserves, zoos, museums	Fauna, flora, geology, habitats, air and water
Landscape	National parks, national gardens and parks nature areas, heritage coasts	Gardens ve parks, cultural and archaeological, mountain chains, plains and coastlines
Monuments	Registered monuments, protected areas	Buildings, passageways, archaeological remains, sculptures
Sites	National battlefields, historical remains	Battlefields, mythological cities
Works	Museums, galleries, open air museums	Museums artifacts, family albums, artwork, wrecks (ship)
Activities	Clubs, societies, customs and traditions	Language, religion, festivals, sports, food and drink, calendars, traditions, crafts
People	Battlefields, plaques, cemeteries, testaments	Relics of saints, heroes, victims, belongings of famous people

Source: Howard (2003: 54).

It is seen that academic studies on cultural heritage assets started to be carried out after the 1950s. From these studies concern include Tilden (1957) ‘s study is remarkable. Tilden (1957) handled heritage with an interpretation approach and determined six principles. These six principles briefly; “To interpret is to understand; to understand is to accept, to accept is to protect”. Interpreting a cultural asset means more than transferring information about that asset. This information should inspire or attract the person to gain a better understanding of the value of the asset. Understanding, in another sense, refers to the acceptance that the existence exists and that

it is valuable. As a result, an asset that is understood and accepted brings with it the purpose of protection. Therefore, the interpretation of cultural assets emerges as one of the basic requirements for the preservation of assets” (cited in Uzzell, 1998, p. 12). Preserving and marketing cultural assets requires a distinct effort. In its simplest definition, marketing is targeting the consumers who will buy the product. However, when the product is a cultural heritage, it is possible to talk about consumers who have a wide variety of demands, needs and expectations. Nuryanti (1996) stated that at this point, heritage sites have a heterogeneous character that attracts visitors from national and international areas. Although there are authors who determine the characteristics of this market (Herbert, 1989; Poria et al., 2003; Prentice, 1989; Timothy & Boyd, 2003, pp. 64-69), it is thought that the characteristics of each niche market should be determined and marketing activities should be carried out accordingly.

According to some authors, inheritance has a heterogeneous structure and is named at different levels as universal, national, regional and individual (Timothy & Boyd, 2003, p. 14). There are also authors who distinguish the importance and value of heritage economically, socially, politically and scientifically (Hall & McArthur, 1993; Karampampas, 2021). In short, heritage is evaluated as a product that is consumed and found in many different ways, as can be seen in Table 1. Tilden (1957) stated that the importance of heritage is conveyed to the visitor with an enriched understanding in the current time. Creative handling of heritage assets encourages visitors to travel to the past in creating their own mental space and to mentally reconstruct / recreate their heritage (cited in Nuryanti, 1996). It is a process where creativity, animation, formation and transformation are simultaneously. People try harder to come together with the past than to verify or verify historical facts. In short, they attribute a new dimension to history (Lowenthal, 2015).

2.1. An Overview of Marketing of Cultural Heritage

Heritage issues has an increasing importance in the marketing literature (Misiura, 2006). Marketing of cultural assets requires an effort different from marketing of other goods and services (Garrod & Fyall, 2000; Herbert, 1989; Tinkov & Parvanova, 2021). Marketing activities differ due to the fact that these assets cannot be reproduced, have no substitution, have the aim of being passed on to future generations, preserving their authenticity and many other features (Daenos & Punsalan, 2021).

Marketing of heritage does not only mean increasing the number of visitors through advertisements, as one of the main purposes of managing heritage assets is to preserve and keep alive the past (Timothy & Boyd, 2003). Instead, the purpose of marketing is to provide opportunities for managers

to control target consumers and visits to help them develop standards of protection for heritage assets. Despite this, it is seen that marketing activities are carried out today to attract visitors to heritage sites. Information technologies enable marketers to save time, money and effort, and reach a wider audience, especially in heritage tourism (Bennett, 1997). Because marketers have a low budget for marketing, promotion and advertising in historical areas (Timothy & Boyd, 2003, p. 185). It is necessary to use appropriate tactical strategies to make exciting and attractive applications for visitors with a small budget (Wigle, 1994, p. 96). Gonzales (2021) introduces social marketing to eliminate the post-pandemic low cultural participation in the arts and culture sector. The author offers a holistic application involving researchers, cultural policy makers and cultural heritage professionals and cultural actors who better understand, expand and diversify the target audience. In short, it encourages stakeholders to research, design and implement social marketing programs. Based on the traditional function of learning by playing in the promotion of cultural heritage, gamification applications have been researched in the promotion of cultural areas and museum collections (Bonacini & Giaccone, 2021). As a result, the authors see gamification as strategic digital marketing tools to promote cultural heritage and tourism. Krajnovic, Vrdoljak-Roguz & Perkovic (2021) examined how the coronavirus pandemic has impacted digital strategies, marketing communications and performance in the delivery of cultural programmes. The results revealed that after the crisis, marketing communications in cultural programs and performances turned more strongly to digital media. At the same time, it is pointed out that new and creative tactics will be used in the marketing of culture in the future.

Many authors have drawn their attention to the marketing of cultural assets with a long-term and sustainable strategic feature (Garrod & Fyall, 2000; Herbert, 1989; Lukac, Stachova, Stacho, Pajtinkova-Bartakova & Gubiniova, 2021). Chhabra (2009) stated that three points should be considered for the strategic marketing of heritage. The first point; to redefine the marketing elements for heritage tourism. The second point; collaborate with heritage institutions on issues such as service, market segmentation, research, environmental analysis, consumer behavior and organizational behavior. The last point, issues such as participation of local people, considering their interests, ensuring cooperation between stakeholders, taking into account the concepts of authenticity, protection, protection, interpretation and sensitive visitors gain importance. The author also provided a model for the strategic sustainable marketing of heritage (Chhabra, 2009, p. 313). This model; It refers to a long-term, collaborative and interdisciplinary holistic approach. There are eight

elements for the strategic sustainable successful marketing of heritage. These were stated below in Table 2.

Table 2: The Eight Elements for the Strategic Sustainable Successful Marketing of Heritage

Participation of local people
Ensuring cooperation between stakeholders in marketing, managing tourism flow and its impact and ensuring the welfare of local people
Setting goals for preserving and preserving the authenticity of tangible and intangible heritage
Focus on macro and micro environmental analysis (SWOT) and long-term strategic marketing plans to support intergenerational equality
To create conscious and sensitive visitors
Paying attention to the content of interpretation and communication with other educational tools
Conducting research on how to better present the sustainable heritage product and encourage common sense behavior
Economic viability

Source: Chhabra (2009, p. 313).

Herbert (1989) presented strategies for the marketing and development of heritage. Herbert (1989, p. 226) stated that interpreting heritage tourism as an integral part of marketing, managing and planning is a strategy. According to Herbert (1989), interpretation should be about experience, reveal the truth, be seen as an art, encouraged and holistic. For example, if an interpretative visual event is made, it creates an impact on the viewer, leaves an image and raises awareness for the visitor to make the visit more memorable. Because visual activities have a potential impact. The scope of interpretation ranges from simple signboards and wall panels to elaborate audio / visual images, staged events and reconstructions. In addition, Herbert (1989) stated that the interpretation of heritage assets has positive results based on empirical studies. Visitors gain greater satisfaction, awareness, understanding, self-realization and satisfaction from the interpretation of heritage assets. Therefore, it is stated that interpretation efforts will increase the number of new visitors as well as permanent visitors. Thomas (1989, p. 62) focused on the reasons for visiting the heritage site visitors. Determining the behavioral motivations of the visitors is effective in the controlled development of the site areas and the determination and achievement of potential strategies. The reasons for the visit have an atypical feature. For example the reasons for the visit; having a general interest in historical houses, architecture, art, wondering,

visiting, spending a nice day, location of the site, recognition, spending time with friends and relatives, promotion, landscape, advice, satisfaction and education. Wee & Ariffin (2021) investigated the determinants of behavioral intention to visit a historical city in the context of cultural heritage tourism from the perspective of marketing experience. The research provides evidence that leisure and service experiences, apart from the innovation experience, play crucial roles in the marketing of cultural heritage in order to ensure revisit and to recommend the destination.

Isdarmanto, Susanto, Tyas, Mahanani & Djamil (2021) conducted to investigate the role of local governments and local communities in the marketing strategy and to raise awareness in the branding of Yogyakarta through cultural heritage and culinary products. According to the result obtained, the number of foreign tourists visiting the country does not meet the expected target. For this reason, she underlined that a community-based approach should be adopted in order for Yogyakarta tourism to be more competitive in global competition and to ensure tourism development.

Some authors look at the marketing of cultural assets from the perspective of the marketing planning process. Hall & McArthur (1993, p. 130) defined five steps or stages in the marketing planning process of heritage attractions. These were stated below in Table 3.

Table 3: Stages in the Marketing Planning Process of Heritage Attractions

Internal and external environmental analysis (situational analysis),
Determining marketing goals and strategies,
Marketing activities,
Marketing management
Market evaluation

Source: Hall & McArthur (1993, p. 130).

Many authors also conduct market segmentation research to understand the cultural heritage market. The heritage market are not expressing a homogeneous market. Hence segmentation helps in identifying different groups (Tsiotsou & Vasioti, 2006). Market segmentation is an important concept in marketing activities (Nuryanti, 1996). Chhabra (2010, p. 306) stated that the segmentation approach in the marketing of heritage means defining the target market as a whole process. The purpose of this process is to know and use appropriate communication strategies for designing and delivering effective messages. In the literature, heritage tourists divided into subgroups as demographic (Chen & Hsu, 2000), motivation

(Kerstetter, Confer, & Graefe, 2001), activities (Sung, 2004), attitude (Poria, Butler & Airey, 2003), interests (Frochot, 2005), and tend to spend (Caserta & Russo, 2002). Prentice (1989, p. 15) explained the characteristics of a market segmentation according to the social character of visitors in heritage sites. Accordingly, such segmentation would be beneficial in creating effective promotion, pricing and interpretive strategies. The author evaluated visitor surveys on heritage sites (monuments, historical houses, museums, national parks and gardens) and compiled the market segmentation criteria. These; the social class of the visitors in the heritage area, age groups, vacation situations, travel distance, visitor origin, mode of transportation, re-visit status, duration of stay and visitor group characteristics. However, it is emphasized that the segmentation of heritage sites should be done by taking into account other important variables, not the social characteristics of the visitors (education, age, economic status, education, etc.). Recently, psychographic segmentation, which defines the sociological and psychological characteristics of consumers, is a key concept related to heritage marketing (Poria, Airey & Butler, 2001; Misiura, 2006). Because heritage visitors seek a “symbiotic” relationship. The most important component of this symbiotic relationship is emotions (Poria et al., 2001). Emotion perception and motivation can affect potential behavior (Poria, Reichel & Biran, 2006). For example, a tourist who identifies a cultural heritage site with her own past, feels an emotional connection and sees it as a part of her own heritage, intends to visit that place again. Moreover, the tourist intends to visit again despite the site entrance fee and intends to recommend it to her friends (Poria et al., 2003).

Another important concept in the marketing of cultural heritage sites is the definition of the attractiveness scale of the site. At this point, Nuryanti (1996, p. 254) stated that if a cultural object can attract visitors from the international arena, this object is valuable enough. The scale of attraction of a site can be local or regional, national and international. The visitor profile of the site area is important in determining this scale. “What scale does the site attract visitors to?” this problem needs to be determined. Because the answer to this question is decisive in the visitor’s accommodation process and in choosing the touristic product (Nuryanti, 1996). Nuryanti (1996) stated that the concept of marketing planning for heritage tourism differs according to developed and developing countries. Heritage tourism marketing plans in developed countries are usually made by public or public and private partnerships. Developing countries, on the other hand, lack a strong private sector infrastructure or a developed tourism industry. In this situation, the role of the public sector can be much more complex. The public sector is not only responsible for tourism education and industry regulation, but also has to play an entrepreneurial

role. Garrod and Fyall (2000) suggested that the management of heritage assets is important in evaluating potential strategies for directing heritage tourism towards sustainability.

Creative marketing tactics related to the marketing of tangible cultural heritage are also applied. Deitch (1989) stated that the infusion of foreigners' ideas with new symbols and materials on Southwestern Indian arts and crafts such as pottery, weaving and jewelry has had a significant impact. Daniel (1996) stated that the continuous infusion or inculcation of creativity in traditional ethnic dances reflects the characteristics of the dance (cited in Chhabra, Healy & Sills, 2003, p. 708). Lalone (2005, p. 136) conducted a study on infusion the anthropological planning approach to local heritage tourism. The Coal Mine National Park and the Farm Heritage Museum and Park, located in Appalachia, a cultural region in North America, are the case studies of the study. The author stated that anthropologists who are experts in human behavior should be involved especially in the design of heritage sites. According to the author, heritage parking areas should not consist of just a simple area design. In addition, it is important to understand the demands and behavior of the people visiting and living in the heritage site. The anthropological perspective refers to the use of the information it collects about people to design heritage sites. For this, practitioners should infuse the information they gather about human behavior into a project design. Based on her previous experiences in heritage tourism projects, the author mentioned some elements of a roadmap. The common point of these elements is to design projects for the local people and for the heritage sites in the region with a community-based approach.

In today's millennium age, there is a digital transformation in almost every sector all over the world. To stay in touch with people, the way to promote goods and services, adapt to change can be achieved with. There is also a digital transformation in the cultural heritage sector. Russo-Spena, Tregua & Bifulco (2021) address the role of technology in the strategic process of modeling and developing cultural services in the digital age. The focus of digital transformation is how marketing activities and customer processes are transformed by digital technologies to create better value, which can be communicated to customers in a connected and personalized approach. Wang & Wang (2021) highlight brand studies in the marketing of cultural heritage. It introduces an innovative model to computer graphic design for the development of the intangible cultural heritage brand. The authors state that branding is an important marketing element for the development of culture, which is seen as the acceleration of economic development.

3. Conclusion and Recommendations

Countries aim to product differentiation in order to get more shares from the world tourism market. With their cultural heritage and use cultural heritage elements more in their marketing activities. Cultural heritage is in a way a cultural economy (Bourdieu, 1986). Therefore, it is clear that countries and regions that are rich in cultural terms effectively manage their cultural economy will contribute to their development and the extension of activities such as tourism to a year or to their continuity.

In this study, it is aimed to gain a holistic perspective by citing from different authors for the marketing of cultural heritage. In addition, in this study, information is presented about the fact that heritage requires a different marketing effort from other goods and services, it should be handled with a strategic approach (Garrod & Fyall, 2000; Prentice, 1989; Thomas, 1989), and creativity tactics (Daniel, 1996; Deitch, 1989; Nuryanti, 1996) used in marketing the heritage. When the studies on the marketing of cultural heritage in the literature are examined, generally the studies; conducting supply and demand research for heritage tourists (Poria, Butler, & Airey, 2004), marketing cultural assets (Light & Prentice, 1994), determining the motivation factors of tourists visiting the cultural destination (Kerstetter, Confer, & Graefe, 2001; Poria et al., 2006), and the attractions of the destination (Nuryanti, 1996; Prentice, 1989; Richards, 1996). Presenting cultural assets to visitors brings along a strategic marketing approach rather than the traditional marketing approach. Because these assets are structures from the past, that are not reproduced and the number of visitors increases greatly (Caserta & Russo, 2002). However, studies on heritage tourism seem to lack a holistic and strategic marketing approach (Chhabra, 2010, p. 307). Many authors have argued that the marketing of cultural assets requires a different effort (Garrod & Fyall, 2000; Herbert, 1989; Tinkov & Parvanova, 2021). On the other hand, Herbert (1989) stated that cultural assets should be marketed with a long-term and sustainable strategic feature. In other words, Herbert (1989, p. 12) emphasized the importance of interpretation for the development, understanding and protection of sites. It is thought that handling cultural assets with a strategic marketing approach may be decisive in the transfer of these assets to the future. For this reason, the authors draw attention to the economic, social, political and scientific importance and value of the heritage (Hall & McArthur, 1993; Karampampas, 2021).

Cultural heritage assets need a roadmap for long-term sustainable marketing. For this, many researchers offer various roadmaps on how to market and promote cultural assets (Chhabra, 2009; Hall & McArthur, 1993; Lalone, 2005; Tinkov & Parvanova, 2021). In the marketing of cultural products and services, it starts with determining the goals and

objectives, as is done when determining a traditional marketing strategy (Tinkov & Parvanova, 2021). Hall & McArthur (1993) stated that the specified stages should be focused on heritage tourism market and heritage tourists, and marketing plans should be created. In addition, the purpose of marketing the heritage should be to create a positive image for the site. Nuryanti (1996) emphasized that marketing of tangible cultural heritage artefacts depends on segmentation, determination of scale, presentation as a part of cultural tourism and the development level of the country. According to Prentice (1989, p. 15), a market segmentation according to the social character of visitors to heritage sites will be helpful in creating effective promotion, pricing and interpretation strategies. This type of segmentation expressed by Prentice (1989) was effective a few decades ago, but today the general characteristics of heritage visitors (education, age, income status, etc.) are known (Timoty & Boyd, 2006). Therefore, it is thought that different market segmentation should be done by using digital technology. Russo-Spena & Bifulco (2021) draw attention to an inclusive perspective that considers marketing strategy in the digital age as a proactive, technology-enabled process in which firms collaborate with customers to create, communicate, deliver, and continue to co-create experience and value.

Another prominent element in the marketing of cultural heritage is the brand. Brand is already a well-known concept in the field of marketing. Wang & Wang (2021) refer to the importance of brands in the marketing of cultural heritage. The brand is not only intended to distinguish products produced by different manufacturers, but also covers the characteristics and image of the products. Public relations also play an important role in promoting cultural heritage. A current research tried to determine the impact of marketing communication tools on cultural heritage on visitor participation. The study shows that offline marketing communication activities have a significant impact on quality perception, visit intention and repeat visits (Lukac et al., 2021).

Creative marketing tactics are also applied on intangible cultural heritage such as arts and crafts (Daniel, 1996; Deitch, 1989). Thus, tourism provides the emergence of an art form distinct and distinctly different from traditional styles (Besculides, Lee & McCormick, 2002). The anthropological approach has been used to infuse new ideas in the heritage thanks to collaboration with stakeholders (Lalone, 2005). Preserving and conserving the heritage requires a collaborative approach. Al- Sakkaf, El-Zahab, Abdelkader & Alfalah (2021) in their research by assessing the maintenance of heritage sites holistically and systematically, revealed that nations around the world should have stronger cooperation for research in the field of heritage, since the heritage belongs to all humanity. Tinkov

& Parvanova (2021) offer suggestions for marketing and promotion of cultural heritage. It presents a detailed marketing strategy and promotion plan prepared specifically for an institution related to cultural heritage. Chhabra (2009) stated that eight elements for the strategic sustainable marketing of heritage. The core of these eight elements is redefining the marketing elements for heritage tourism, collaborating with heritage institutions and engaging local people. It has been demonstrated by empirical study that the destination does not attract the targeted number of visitors and cannot provide tourism development when there is no community-based marketing approach (Isdarmanto, Susanto, Tyas, Mahanani & Djamil, 2021).

In briefly, when the studies on the marketing of cultural heritage are examined with a holistic approach, it is seen that they do not differ much from each other. It is seen that the only thing that has changed is to redesign cultural services and products by adapting to the developments required by the age. Otherwise, it should not be forgotten that there is a huge resource, promotion of cultural products, a special approach and a lot of work for the successful implementation of the plans to be prepared for the marketing of cultural heritage. This requires only a collaborative approach with stakeholders. It is understood that an interdisciplinary approach, strategy, communication and cooperation between stakeholders, participation of local people, new trends in supply and demand in heritage tourism should be taken into account for the implementation of the prepared roadmap. As Thomas (1989) stated that the reasons for visiting heritage tourists are gradually evolving towards a purpose-based feature. Especially, determining a strategy based on obtaining information and education will be meaningful for heritage tourists. Therefore a “memorable tourism experience generated will definitely bring them back the tourism destinations in the future” (Wee & Ariffin, 2021).

4. References

- Al- Sakkaf, A., El-Zahab, S., Abdelkader, E. M., & Alfalah, G. (2021). A Holistic and Systematic Assessment of Maintenance Approaches in Heritage Sites'. *Wseas Transactions on Systems and Control*, 16, 335-350. <https://doi.org/10.37394/23203.2021.16.29>
- Bennett, M. M. (1997). Heritage Marketing: The Role of Information Technology. *Journal of Vacation Marketing*, 3 (3), 272-280. <https://doi.org/10.1177/135676679700300308>
- Besculides, A., Lee, M. E., & McCormick, P. J. (2002). Residents' Perceptions of the Cultural Benefits of Tourism. *Annals of Tourism Research*, 29 (2), 303-319. [https://doi.org/10.1016/S0160-7383\(01\)00066-4](https://doi.org/10.1016/S0160-7383(01)00066-4)
- Bonacini, E. & Giaccone, S. C. (2021) Gamification and cultural institutions in cultural heritage promotion: A successful example from Italy, *Cultural Trends*, 1-20. <https://doi.org/10.1080/09548963.2021.1910490>
- Bourdieu, P. (1986). The Forms of Capital", In W. Szeman and T. Kaposy (Eds.), *Cultural Theory: An Anthology*, pp. 81-93, United Kingdom: WileyBlackwell.
- Boyd, R., & Richerson, P. J. (1988). *Culture and the Evolutionary Process*. United States of America: University of Chicago Press, p. 83.
- Caserta, S., & Russo, A. P. (2002). More Means Worse: Asymmetric Information, Spatial Displacement and Sustainable Heritage Tourism". *Journal of Cultural Economics*, 26 (4), pp. 245-260. <https://doi.org/10.1023/A:1019905923457>
- Chen, J. S., & Hsu, C. H. (2000). Measurement of Korean Tourists' Perceived Images of Overseas Destinations. *Journal of Travel Research*, 38 (4), 411-416. <https://doi.org/10.1177/004728750003800410>
- Chhabra, D. (2009). Proposing a Sustainable Marketing Framework for Heritage Tourism. *Journal of Sustainable Tourism*, 17 (3), 303-320.
- Chhabra, D. (2010). *Sustainable Marketing of Cultural and Heritage Tourism*. New York: Routledge, pp. 306-307.
- Chhabra, D., Healy, R., & Sills, E. (2003). Staged Authenticity and Heritage Tourism. *Annals of Tourism Research*, 30 (3), 702-719. [https://doi:10.1016/s0160-7383\(03\)00044-6](https://doi:10.1016/s0160-7383(03)00044-6)
- Daenos, R. G., & Punsalan, M. C. (2021). Staging Heritage and Cultural Activities/Events at The City College of Angeles: Experiential Marketing to Promote Sense of Patrimony and Nationalism. *Asia Pacific International Events Management Journal*, 2 (1), 10-22.
- Daniel, Y. P. (1996). Tourism Dance Performances Authenticity and Creativity. *Annals of Tourism Research*, 23(4), 780-797.
- Deitch, L. I. (1989). The Impact of Tourism upon the Arts and Crafts of the Indians of the Southwestern United States. In *Hosts and Guests: The Anth-*

ropology of Tourism, V. L. Smith (ed.).USA: University of Pennsylvania Press, pp. 223–235.

- Frochot, I. (2005). A Benefit Segmentation of Tourists in Rural Areas: A Scottish Perspective. *Tourism Management*, 26 (3), 335-346. <https://doi.org/10.1016/j.tourman.2003.11.016>
- Gonsales, F. I. (2021). Social Marketing for Museums: An Introduction to Social Marketing for the Arts and Culture Sector. *RAUSP Management Journal*. 56 (3), 314-333. <https://doi.org/10.1108/RAUSP-08-2020-0194>
- Garrod, B., & Fyall, A. (2000). Managing Heritage Tourism. *Annals of Tourism Research*, 27, 682-708. [https://doi.org/10.1016/S0160-7383\(99\)00094-8](https://doi.org/10.1016/S0160-7383(99)00094-8)
- Hall, C. M., & McArthur, S. (1993). Heritage Management: An Introductory Framework. In C. M. hall & S. McArthur (Eds.), *Heritage Management in New Zealand and Australia: Visitors Management, Interpretation, and Marketing*. Auckland: Oxford University Press, pp. 1-17.
- Harris, M. (1971). *Culture, Man and Nature*. New York: Crowell, p. 136.
- Herbert, D. T. (1989). Leisure Trends and The Heritage Market. In D. T. Herbert, R. C. Prentice & C. J. Thomas (Eds.), *Heritage Sites: Strategies for Marketing and Development*. Aldershot: Avebury, pp. 1-14.
- Howard, P. (2003). *Heritage: Management, Interpretation, Identity*. Londra: Continuum, pp. 39-54.
- Isdarmanto, I., Susanto, D. R., Tyas, D. W., Mahanani, S., & Djamil, F. D. (2021). Analysis of Marketing Strategies Through The Uniqueness of Heritage, Cultures, and Culinary Products as an Asset of Branding Towards Tourism Development in Yogyakarta Special Regency. *Kepariwisata: Jurnal Ilmiah*, 2 (1). <https://doi.org/10.47256/pringgitan.v2i01.162>
- Karampampas, P. (2021). (Re)inventing intangible cultural heritage through the market in Greece, *International Journal of Heritage Studies*, 27:6, 654-667. <https://doi.org/10.1080/13527258.2020.1844277>
- Kerstetter, D. L., Confer, J. J., & Graefe, A. R. (2001). An Exploration of The Specialization Concept within the Context of Heritage Tourism. *Journal of Travel Research*, 39 (3), 267-274. <https://doi.org/10.1177/004728750103900304>
- Krajnović, A., Vrdoljak Raguž, I., & Perković, A. (2021). Strategic and Digital Marketing in Cultural Institutions and the Impact of the COVID-19 Pandemic—a Comparative Analysis of Two Case Studies. *Interdisciplinary Description of Complex Systems: INDECS*, 19 (2), 257-280. <https://doi.org/10.7906/indecs.19.2.6>
- Lalone, M. B. (2005). An Anthro-Planning Approach to Local Heritage Tourism: Case Studies from Appalachia. *NAPA Bulletin*, 23 (1), 135-150.
- Light, D., & Prentice, R. (1994). Market-Based Product Development in Heritage Tourism. *Tourism Management*, 15 (1), 27-36. [https://doi.org/10.1016/0261-5177\(94\)90024-8](https://doi.org/10.1016/0261-5177(94)90024-8)

- Lowenthal, D. (2015). *The past is a foreign country-revisited*. New York: Cambridge University Press.
- Lukáč, M., Stachová, K., Stacho, Z., Bartáková, G. P., & Gubíniová, K. (2021). Potential of Marketing Communication as a Sustainability Tool in the Context of Castle Museums. *Sustainability*, 13 8191, 1-16. <https://doi.org/10.3390/su13158191>
- Misiura, S. (2006). *Heritage Marketing*. Oxford: Butterworth-Heinemann.
- Nuryanti, W. (1996). Heritage and Postmodern Tourism. *Annals of Tourism Research*, 23 (2), 249-260. [https://doi.org/10.1016/0160-7383\(95\)00062-3](https://doi.org/10.1016/0160-7383(95)00062-3)
- Poria, Y., Airey, D., & Butler, R. (2001). Challenging the Present Approach to Heritage Tourism: Is Tourism to Heritage Places Heritage Tourism?. *Tourism Review*, 56 (1/2), 51-53. <https://doi.org/10.1108/eb058358>
- Poria, Y., Butler, R., & Airey, D. (2003). The Core of Heritage Tourism. *Annals of Tourism Research*, 30 (1), 238-254. [https://doi.org/10.1016/S0160-7383\(02\)00064-6](https://doi.org/10.1016/S0160-7383(02)00064-6)
- Poria, Y., Butler, R., & Airey, D. (2004). Links between Tourists, Heritage, and Reasons for Visiting Heritage Sites. *Journal of Travel Research*, 43 (1), 19-28. <https://doi.org/10.1177/0047287504265508>
- Poria, Y., Reichel, A., & Biran, A. (2006). Heritage Site Perceptions and Motivations to Visit. *Journal of Travel Research*, 44 (3), 318-326. <https://doi.org/10.1177/0047287505279004>
- Prentice, R. C. (1989). Visitors to Heritage Sites: A Market Segmentation by Visitor Characteristic. In D. T. Herbert, R. C. Prentice & C. J. Thomas (eds.), *Heritage Sites: Strategies for Marketing and Development*. Aldershot: Avebury, pp. 15-61.
- Rossetti, G., & Quinn, B. (2021, in press). Understanding the Cultural Potential of Rural Festivals: A Conceptual Framework of Cultural Capital Development. *Journal of Rural Studies*. <https://doi.org/10.1016/j.jrurstud.2021.05.009>
- Russo Spena T., Tregua M., Bifulco F. (2021). Future Internet and Digital Ecosystems. In Russo Spena T., Bifulco F. (eds) *Digital Transformation in the Cultural Heritage Sector. Contributions to Management Science*. Cham: Springer. https://doi.org/10.1007/978-3-030-63376-9_2
- Sung, H. H. (2004). Classification of Adventure Travelers: Behavior, Decision Making, and Target Markets. *Journal of Travel Research*, 42 (4), 343-356. <https://doi.org/10.1177/0047287504263028>
- Taylor, E. B. (2010). *Primitive Culture: Researches into the Development of Mythology, Philosophy, Religion, Art, and Custom*. New York: Cambridge University Press. <https://doi.org/10.1017/CBO9780511705960>

- Tilden, Freeman (1957). *Interpreting our heritage: principles and practices for visitor services in parks, museums, and historic places*. Chapel Hill: University of North Carolina Press.
- Timothy, D. J., & Boyd, S.W. (2003). *Heritage Tourism* (First edition). Harlow: Prentice Hall, p. 14, pp. 64-65, p. 185.
- Tinkov, S., & Parvanova, A. (2021). Development and Promotion (Marketing and PR strategies) of Creative Centre of Kalofer Bobbin Lace. *Традиционное прикладное искусство и образование*, 36 (1), 125-139.
- Thomas, C. J. (1989). The role of historic sites and reasons for visiting, In D. T. Herbert, R. C. Prentice and C. J. Thomas (Eds.), *Heritage Sites: Strategies for marketing and development*. Aldershot: Avebury, pp. 62-93.
- Tomlinson, J. (1991). *Cultural Imperialism*. London: Continuum, p. 4.
- Thompson, D. (1996). *Oxford Compact English Dictionary*. New York: Oxford University Press.
- Tsiotsou, R., & Vasioti, E. (2006). Satisfaction: A Segmentation Criterion for “Short Term” Visitors of Mountainous Destinations. *Journal of Travel and Tourism Marketing*, 20 (1), 61-73. https://doi.org/10.1300/J073v20n01_05
- Unesco (1972). Convention Concerning the Protection of the World Cultural and Natural Heritage. Adopted by the General Conference at its 17th session, Paris, 16 November 1972. UNESCO, Paris. Retrieved from <https://whc.unesco.org/archive/convention-en.pdf> (19.08.2021).
- Unesco (2003). Convention for the Safeguarding of the Intangible Cultural Heritage. The General Conference of the United Nations Educational, Scientific and Cultural Organization hereinafter referred to as UNESCO, meeting in Paris, from 29 September to 17 October 2003, at its 32nd session. Retrieved from http://portal.unesco.org/en/ev.php-URL_ID=17716&URL_DO=DO_TOPIC&URL_SECTION=201.html (19.08.2021).
- Uzzell, D. (1998). Interpreting Our Heritage: A Theoretical Interpretation. In D. Uzzell and R. Ballantyne (Eds.), *Contemporary Issues in Heritage & Environmental Interpretation*. London: The Stationery Office, pp. 11-25.
- Wang, P., & Wang, A. (2021). “Analysis of Intangible Heritage Image Design and Brand Integration Design Based on Computer Graphic Design,” *2021 IEEE Asia-Pacific Conference on Image Processing, Electronics and Computers (IPEC)*, 1088-1091, <https://doi.org/10.1109/IPEC51340.2021.9421076>.
- Wee, G. F., & Ariffin, A. A. M. (2021). Cultural Heritage Tourism: Determinants of Behavioral Intention To Visit A Historical City From Experiential Perspectives. *Journal of Tourism, Hospitality and Environment Management*, 6 (22), 01-10. <https://doi.org/10.35631/JTHEM.622001>.
- Wigle, R. (1994). Making History Seem Tempting: Marketing an Historic Site as a Visitor Attraction. *Journal of Travel and Tourism Marketing*, 3 (2), 95-101. https://doi.org/10.1300/J073v03n02_07

Chapter 4

DETERMINATION OF CRITERIA AFFECTING WHEAT SELECTION BY FACTOR ANALYSIS

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1. Introduction

In recent years, the increase in the demands and needs of people in parallel with the population growth in our country and in the world has played an effective role in the importance of businesses. In this context, the production phenomenon, which emerged as a result of the inadequacy of nature to meet the needs of human beings, has expanded the fields of activity of the enterprises and thus gradually increased their share in the country's economy (Kobu, 2008: 10-32). Pointing out how important the functionality of production is in terms of both human life and businesses, this situation is evaluated as providing benefit from the eyes of economists and operators, while it refers to the process of transforming raw materials or semi-finished products into a product suitable for use (Kobu, 2008: 26).). In this context, businesses, which have become an important dynamic in terms of preserving the natural balance, need the most appropriate methods that can bring together a number of production factors such as human labor, machinery, raw materials. As a matter of fact, the competitive advantage of an enterprise that can meet the desired demand within the framework of time, cost and quality by using the available resources at the optimum level will be inevitable (Demir and Mazman İtik, 2005: 12). The concept of business is broadly defined as units that produce goods and/or services that bring together the factors of production in order to meet the needs of people and earn a certain level of profit in a systematic planning (Kumkale, 2010: 23). In this respect, enterprises, which are social and economic organizations, are also seen as units in which various resources (human labor, machines, raw materials, etc.)). For this reason, whether it is large or small-scale enterprises, the common goals of all of them include the understanding of profitability and community service to a large extent. The ability of an enterprise to fulfill these objectives and maintain its position in the markets is possible by determining the objectives accurately, clearly and in a realistic manner.

The main special objectives of the enterprises are as follows (Şimşek, 2009: 42).

- To meet the needs and requirements by offering better quality goods or services to customers and consumers,

- To provide a better working environment for the employees by developing and improving the good wages and working conditions for the employees,
- By providing training to the employees of the enterprise, both to realize the self-development of the employees and to work with better quality personnel,
- To provide permanent employment opportunities to its employees in a stable manner,

It is among the special purposes of businesses. When businesses are evaluated as living organisms, it can be said that all these purposes enable businesses to profit and grow in the long run.

Within the scope of this research, a study was carried out that is thought to contribute to flour production enterprises. The wheat required for flour production is not of a single type or in other words of a single quality. A factory purchases many different types of wheat in order to produce. Although the main reason for this situation is climate, geography, type of soil, etc., this situation affects the flour production process. Businesses carry out some operations in order to minimize these effects and to separate the wheats according to their quality. Some characteristics of the wheat, which is the input for the flour produced by these processes, emerge. Wheat with known properties is stored with the same type of raw material. Numerous tests and analyzes are performed for this process. These studies both cause loss of time and increase costs. Considering such situations, this study was carried out in order to facilitate the decision-making action of the decision maker. The aim of the study is to reduce the number of tests and analyzes required to evaluate wheat, to provide definitive solutions, that is, to prioritize the important ones. Thus, the number of tests and analyzes will be reduced and both cost reduction and time savings will be achieved.

2. Importance of Wheat in the World and in Our Country

The fact that agricultural products are basic necessities has given these products a strategic importance. All countries in agricultural products; In particular, they strive to be self-sufficient in basic agricultural products such as grain, sugar, milk, meat and vegetable oil and direct their agricultural policies in line with this goal (Aytekin et al., 2019). One of the most important reasons why countries turn to these policies is the increasing population. With

the increase in population, it becomes more difficult to meet the needs. (Arısoy and Oğuz, 2005). In addition to the rapid increase in the world population, the hunger problem that arises due to the limited agricultural and cultural areas has led to the acceleration of studies on wheat, which can adapt to various climatic and soil conditions, which is high in yield, easy to produce, convenient for storage, and has a high nutritional value, and to increase production. Ertugay: 166). Wheat is a plant that ranks first in the world and in our country in terms of cultivation area and production among the main food crops used in human nutrition, and it has played an important role as a basic energy and protein source for thousands of years in humans (Doğan and Kendal, 2012). In this context, the country-based distribution of wheat, which is important both in our country and in other countries, is presented in Figure 1 (TZOB, 2005).



Figure 1: Distribution of wheat production by country

Wheat takes the first place as a basic nutrient and strategic product in our country and in the world, and it is seen that this importance will continue in the coming years (Aydoğan et al.; 3). According to a study conducted in our country, 60% of our daily calorie needs are met from wheat. This result shows how important wheat is in human nutrition. Although the consumption of wheat is less in developed countries, in our country and in countries with low per capita income, bread-based nutrition is quite high (TZOB, 2005). Wheat quality has different meanings from the farmer, who is at the beginning of the production chain, to the person who does the trade, to the people who grind, cook, market and finally consume.

For this, a single definition is not sufficient when it comes to wheat quality (Şahin et al., 2011).

As seen in Table 1, there are 700 active flour factories in Turkey, and the capacity of these factories is 30 million tons. It is seen that most of these factories are gathered in Central Anatolia and Marmara Region. Insufficient irrigation facilities in the Central Anatolia region, high soil erosion, semi-arid climatic conditions and being an agricultural product that can adapt to the climate order of the region have made wheat farming widespread in the region.

Table 1: Distribution of flour mills according to our regions

Distribution of Flour Factories by Regions		
Number	Regions	Number of Factories
1	Central Anatolia Region	202
2	Marmara Region	135
3	Black Sea region	141
4	Southeast Anatolia Region	94
5	Eastern Anatolia Region	28
6	Aegean Region	54
7	The Mediterranean region	46

Due to the excess of factories located in the Central Anatolia region, it was decided to choose the research area from this region. Kırşehir Province, which is located in this region and has an important place in terms of grain agriculture, has a dynamic that directs the economy of both the region and the city. In this context, when wheat is examined, 13 years of wheat cultivation area, harvest area, production and yield of Central Anatolia Region and Kırşehir province between 2001-2014 are given in Table 2(TUIK, 2015).

Table 2: Anatolian Region and Kırşehir Province Wheat Data

Years	Region City	Planting Area (Decares)	Harvested Area (Decares)	Production (Ton)	Yield (kg/da)
2014	Central Anatolia	11.608.712	11.251.581	2.182.937	194
	Kırşehir	1.077.936	1.077.936	218.957	208
2013	Central Anatolia	11.308.665	11.304.516	2.943.657	260
	Kırşehir	967.083	966.134	275.314	285
2012	Central Anatolia	12.098.941	12.098.941	2.674.357	221
	Kırşehir	1.062.471	1.062.471	237.501	224

2011	Central	12.382.380	12.382.010	3.097.243	250
	Anatolia				
2010	Kırşehir	1.044.946	1.044.946	263.617	252
	Central	12.673.236	12.645.836	2.675.625	212
2009	Anatolia				
	Kırşehir	1.037.316	1.017.428	260.805	256
2008	Central	12.506.911	12.491.417	2.763.750	221
	Anatolia				
2007	Kırşehir	938.696	934.712	258.347	276
	Central	12.506.911	12.491.417	2.763.750	221
2006	Anatolia				
	Kırşehir	758.975	758.975	113.527	150
2005	Central	12.574.360	12.204.842	1.913.279	157
	Anatolia				
2004	Kırşehir	782.975	782.975	116.773	149
	Central	12.524.161	12.524.161	2.440.056	195
2003	Anatolia				
	Kırşehir	672.986	672.986	151.497	225
2002	Central	13.096.420	13.096.420	2.656.513	203
	Anatolia				
2001	Kırşehir	699.310	699.310	168.661	241
	Central	12.947.160	12.797.720	2.342.983	183
2000	Anatolia				
	Kırşehir	687.620	687.620	166.763	243
1999	Central	14.393.880	14.316.750	2.353.848	164
	Anatolia				
1998	Kırşehir	1.168.570	1.145.960	171.790	150
	Central	14.779.880	14.708.000	2.462.628	167
1997	Anatolia				
	Kırşehir	1.144.790	1.080.090	185.127	171
1996	Central	15.096.590	14.631.540	2.156.466	147
	Anatolia				
1995	Kırşehir	1.251.240	1.251.240	246.182	197
	Central				

As can be seen from Table 2, Kırşehir province has an important share in meeting Turkey's agricultural products. Wheat is cultivated on 119,488 ha of a total of 220,040 ha agricultural land in Kırşehir and a total of 261,800 tons of wheat is produced, and the income of this production for Kırşehir's economy is 99 843 809 TL (URL - 2, 2015)

3. Purpose and Importance of the Application

In this research, factor analysis was carried out to determine the tests and analyzes that play an important role in determining the wheat quality of flour factories operating in Kırşehir. The aim of the study was to save time for the factory. Since the criteria to be used in the research are too many and it is considered that this

situation will reduce the quality of the analysis, a survey was prepared based on the opinions of experts (food engineer-agricultural engineer) and this survey study was applied to the people who are considered experts in the wheat purchasing process, the number of criteria was reduced and the maximum number of criteria was determined in line with the information received from the experts. important ones are taken into account. In the study, first of all, the general characteristics of the flour mills operating in the province of Kırşehir and to be included in the survey study were examined. Then, the general characteristics of the experts working in this factory and participating in the survey were examined. Finally, a survey study conducted with the expert group was included. Thus, in the light of the information obtained from the experts, generally accepted results were tried to be explained.

3.1. Limitations of the Research

Since Turkey is an agricultural country, the main body of the research is quite large. For this reason, some restrictions such as region and city were made in the sample. For this reason, first of all, Turkey's wheat production according to the regions was examined. The region with the highest production amount was determined as Central Anatolia. When the cities in this region are examined, it has been determined that the most wheat production is made in Kırşehir. At the next stage, the factories operating in Kırşehir and the experts working in this factory were determined. In the research, a questionnaire was applied to 62 experts working in a total of 14 factories operating in Kırşehir.

3.2. General Information About the Flour Factories Where the Research Was Made

In this part of the application, some descriptive features of 14 factories are included. These examined features are as follows, respectively.

1. The state of the factory to follow the innovations
2. The operating times of the factories
3. Quality control unit in factories
4. Wheat stock status
5. Warehouse situations where wheat is stored
6. Wheat storage situations
7. The use of chemicals

8. Reason for using chemicals
9. Purchasing purposes of wheat
10. Types of flour produced
11. Participation in the training and seminars of the employees in the factory
12. Suitability of laboratory conditions in the factory
13. Wheat purchasing preferences of the factory
14. Wheat suppliers

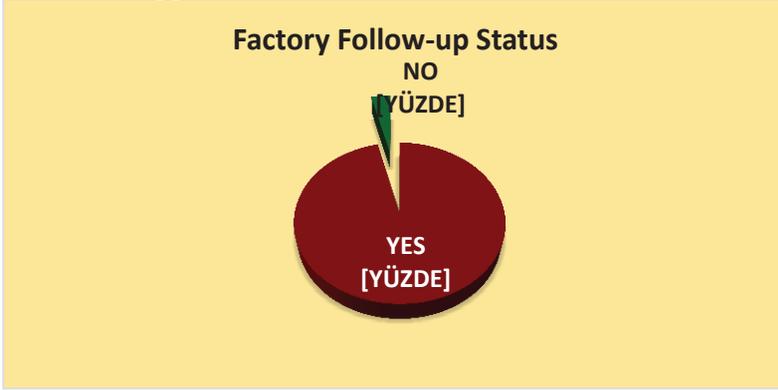


Figure 2: The status of the factory following the innovations

Table 3: Information of the factory to follow the innovations

	Frequency	Percent(%)	Valid Percent(%)	Cumulative Percent(%)
Yes	55	88,7	88,7	88,7
No	7	11,3	11,3	100,0
Total	62	100,0	100,0	

In Figure 2 and Table 3, information about following the innovations in the field of the factories is given. According to the results of the survey, it was concluded that while 96% of the factories in Kırşehir followed the innovations, 4% did not.

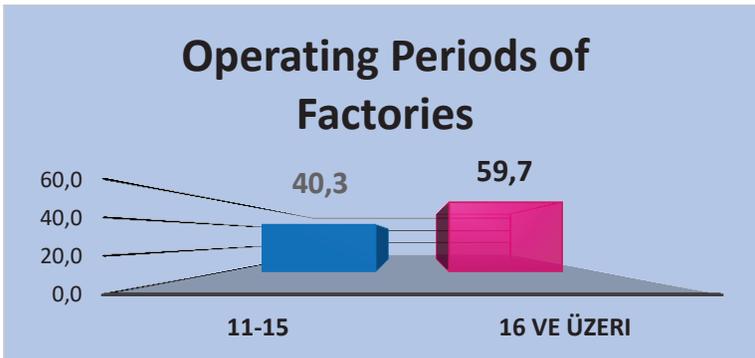


Figure 3: Operating times of factories

Table 4: Operating information of the factories

	Frequency	Percent(%)	Valid Percent(%)	Cumulative Percent(%)
11-15	25	40,3	40,3	40,3
16 and Over	37	59,7	59,7	100,0
Total	62	100,0	100,0	

In Figure 3 and Table 4, it has been tried to determine how many years the factories participating in the survey in Kırşehir have been operating. According to the results of the survey, 59.7% of the factories have been operating for 16 or more years, and 40.3% of the factories have been operating for 11-15 years, while the information on the factory operating for less than 10 years could not be reached.

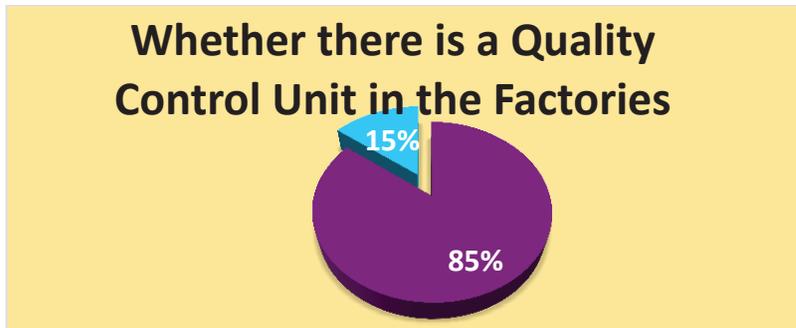


Figure 4: Quality control unit in factories

Table 5: Quality control unit information in factories

	Frequency	Percent(%)	Valid Percent(%)	Cumulative Percent(%)
Yes	53	85,5	85,5	85,5
No	9	14,5	14,5	100,0
Total	62	100,0	100,0	

In Figure 4 and Table 5, it is concluded that 85.5% of the factories in Kırşehir have a quality control unit, while 14.4% do not have a quality unit.

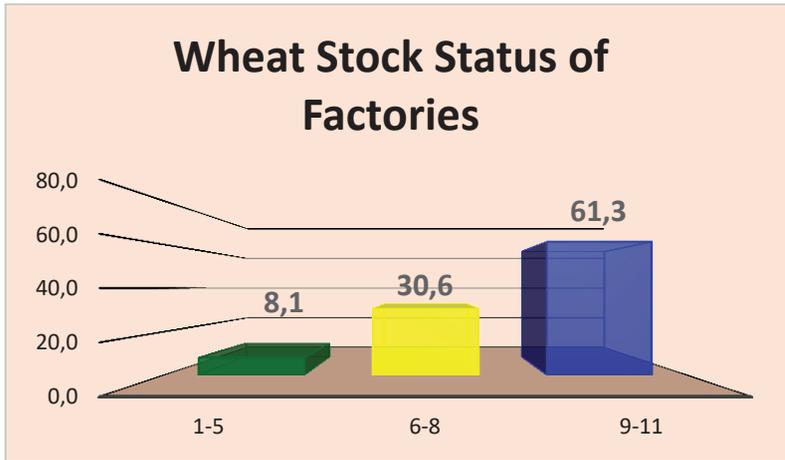


Figure 5: Wheat stock status

Table 6: Wheat stock status information

	Frequency	Percent(%)	Valid Percent(%)	Cumulative Percent(%)
1-5	5	8,1	8,1	8,1
6-8	19	30,6	30,6	38,7
9-11	38	61,3	61,3	100,0
Total	62	100,0	100,0	

According to the survey results in Figure 5 and Table 6, 61.3% of the factories have 9-11 tons of wheat stock, while 30.6% have 6-8 tons of wheat and 8.1% have 1-5 tons of wheat. has stock.

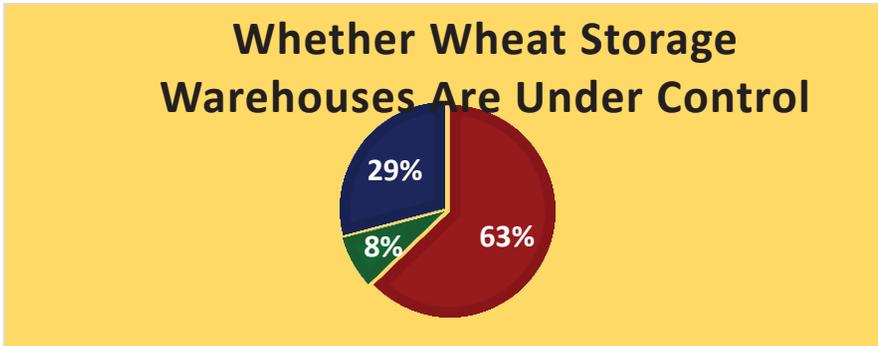


Figure 8: Warehouse situations where wheat is stored

Table 7: Warehouse status information where wheat is stored

	Frequency	Percent(%)	Valid Percent(%)	Cumulative Percent(%)
Yes	39	62,9	62,9	62,9
No	5	8,1	8,1	71,0
I Don't Know	18	29,0	29,0	100,0
Total	62	100,0	100,0	

In Figure 6 and table 7, it has been investigated whether the wheat storage warehouses of the factories participating in the survey in Kırşehir are under control. According to the results of the survey, it was concluded that while the warehouses of 62.9% of the factories were under control, 8.1% were not controlled and 29% had no knowledge about the subject.

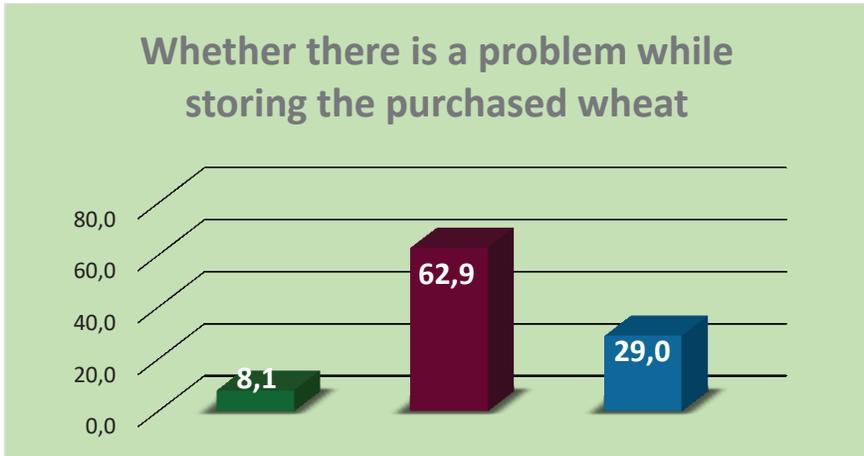


Figure 7: Wheat storage situations

Table 8: Wheat storage status information

	Frequency	Percent(%)	Valid Percent(%)	Cumulative Percent(%)
Yes	5	8,1	8,1	8,1
No	39	62,9	62,9	71,0
I Don't Know	18	29,0	29,0	100,0
Total	62	100,0	100,0	

In Figure 7 and Table 8, it was investigated whether any problems were encountered while storing the wheat purchased from the factories participating in the survey in Kırşehir. According to the results of the survey, it was concluded that 62.9% of the factories did not encounter any problems, 8.1% had problems while storing the wheat and 29% had no knowledge about the subject.

The Situation of Using Chemical Substances in Wheat Storage

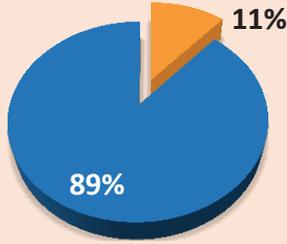


Figure 8: Use of chemicals

Table 9: Chemical substance use status information

	Frequency	Percent(%)	Valid Percent(%)	Cumulative Percent(%)
Yes	7	11,3	11,3	11,3
No	55	88,7	88,7	100,0
Total	62	100,0	100,0	

In Figure 8 and Table 9, the use of chemical substances in the storage conditions of the wheat purchased in the factories has been examined. According to the results of the survey, it was concluded that while 88.7% of the factories in Kırşehir do not use chemicals, 11.3% do.

Reason for Using Chemical Substance

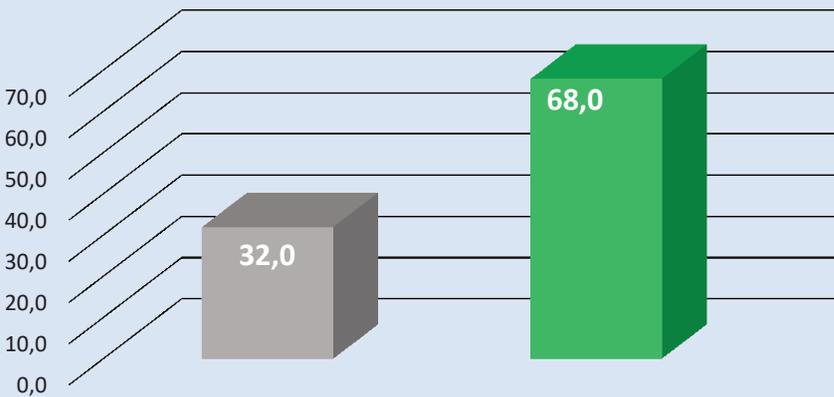


Figure 9: Reason for using chemicals

Table 10: Information on the reason for using chemicals

	Frequency	Percent(%)	Valid Percent(%)	Cumulative Percent(%)
In order not to go stale	8	12,9	32,0	32,0
In order not to decrease the values	17	27,4	68,0	100,0
Total	62	100,0	100,0	

In Figure 9 and Table 10, when the reasons for using chemical substances in the storage conditions of the wheat purchased in the factories are examined, 11,3% of them are examined, 68% of them use chemicals to prevent the value of wheat from falling, while 32% of them use chemical substances to prevent the wheat from getting stale. has been reached.

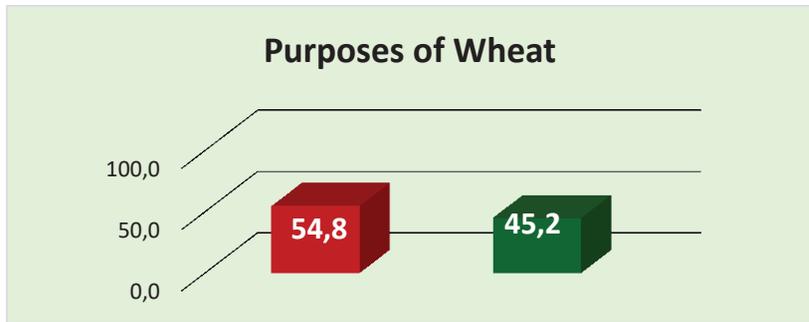


Figure 10: Purchasing purposes of wheat

Table 11: Information for what purpose the wheat was selected

	Frequency	Percent(%)	Valid Percent(%)	Cumulative Percent(%)
According to Use in Production	34	54,8	54,8	54,8
According to Consumer Requests	28	45,2	45,2	100,0
Total	62	100,0	100,0	

In Figure 10 and Table 11, it has been examined for what purposes the wheat purchased in the factories are preferred and 54.8% of them purchase according to the wheat types they prefer in production, and 45.2% of them direct their wheat purchases in line with the demands of the consumers. has been reached.

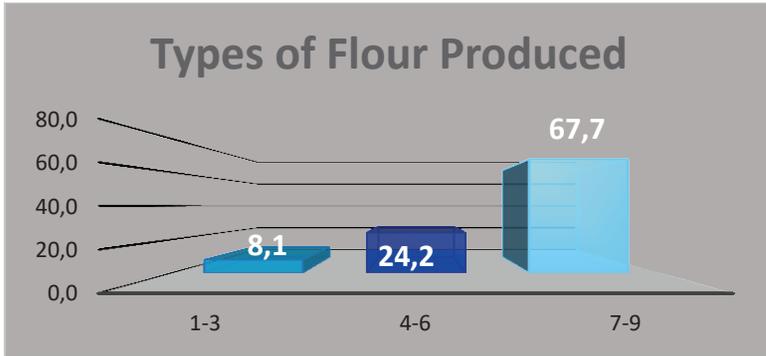


Figure 11: Types of flour produced

Table 12: Information on types of flour produced

	Frequency	Percent(%)	Valid Percent(%)	Cumulative Percent(%)
1-3	5	8,1	8,1	8,1
4-6	15	24,2	24,2	32,3
7-9	42	67,7	67,7	100,0
Total	62	100,0	100,0	

In Figure 11 and table 12, it has been investigated whether there are any problems while keeping the information about how many types of flour the factories participating in the survey in Kırşehir produce from the purchased wheat. According to the results of the survey, 67.7% of the factories produce 7-9 types of flour, 24.2% of them produce 4-6 types of flour and 8.1% of them produce 1-3 types of flour.



Figure 12: Training and seminar attendance status of factory employees

Table 13: Information, training and seminar status information of the factory

	Frequency	Percent(%)	Valid Percent(%)	Cumulative Percent(%)
Yes	5	8,1	8,1	8,1
No	23	37,1	37,1	45,2
Not Enough	34	54,8	54,8	100,0
Total	62	100,0	100,0	

In Figure 12 and table 13, the information, training and seminar participation status of the employees in the factories participating in the survey in Kırşehir province were investigated. According to the results of the survey, it was found that 8.1% of the factories did the training and seminars, 54.8% did not do enough and 37.1% did not organize any information, training and seminars.

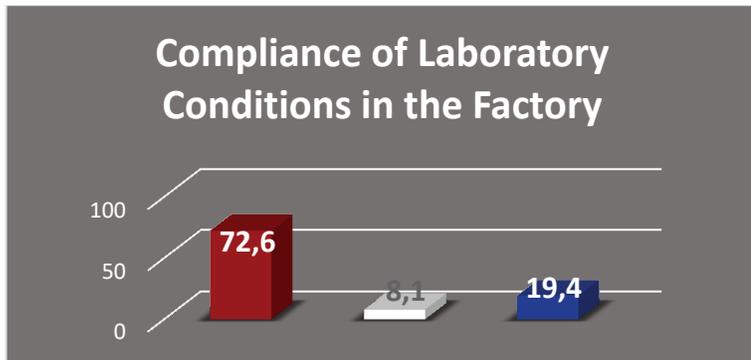


Figure 13: Suitability of laboratory conditions in the factory

Table 14: State of the factory's compliance with analysis

	Frequency	Percent(%)	Valid Percent(%)	Cumulative Percent(%)
Yes	45	72,6	72,6	72,6
No	5	8,1	8,1	80,6
Not Enough	12	19,4	19,4	100,0
Total	62	100,0	100,0	

In Figure 13 and Table 14, it has been investigated whether the factories participating in the survey in Kırşehir have the appropriate equipment for the analysis. According to the results of the survey, it was found that 72.6% of the factories had the appropriate equipment, while 19.4% did not have enough equipment and 8.1% did not have enough equipment.

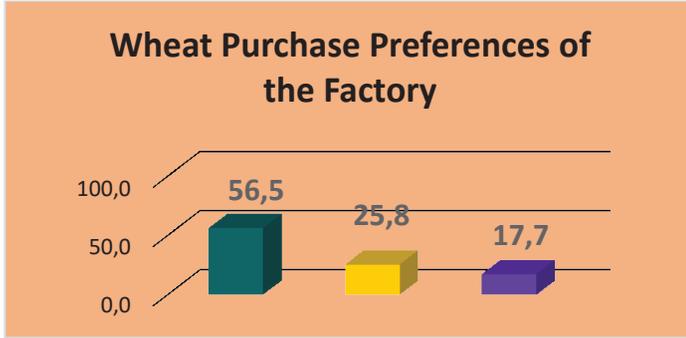


Figure 14: Considerations when purchasing wheat

Table 15: Considerations when purchasing wheat

	Frequency	Percent(%)	Valid Percent(%)	Cumulative Percent(%)
Wheat Quality Values	35	56,5	56,5	56,5
To the Price of Wheat	16	25,8	25,8	82,3
Making the Manufacturer Familiar	11	17,7	17,7	100,0
Total	62	100,0	100,0	

When the priority information in the selection of wheat purchased in the factories is examined in Figure 14 and Table 15, 56.5% of them pay attention to the high quality values of wheat, 25.8% of them pay attention to the low price of the wheat and 17.7% of them are familiar with the producer. It was concluded that they bought wheat.



Figure 15: Wheat suppliers

Table 16: Wheat suppliers information

	Frequency	Percent(%)	Valid Percent(%)	Cumulative Percent(%)
From the wholesaler	11	17,7	17,7	17,7
from the intermediary	7	11,3	11,3	29,0
From the	43	69,4	69,4	98,4

manufacturer				
Other	1	1,6	1,6	100,0
Total	62	100,0	100,0	

In Figure 15 and Table 16, when the places of procurement of the wheat purchased from the factories are examined, it is concluded that 69.4% of them purchase from the producer, 17.7% from the wholesaler, 11.3% from the intermediary and 1.6% from other sources. has been reached.

Considering all these features examined about the factories, as can be seen in Table 17, a total of 14 factories operating in Kırşehir in terms of 9 features are quite similar to each other.

Table 19: Comparison of factories

	F ₁	F ₂	F ₃	F ₄	F ₅	F ₆	F ₇	F ₈	F ₉	F ₁₀	F ₁₁	F ₁₂	F ₁₃	F ₁₄
S ₁	16+	16+	11-15	11-15	11 - 15	16+	11- 15	11-15	16+	16+	1 6 +	16+	16+	1 1 - 1 5
S ₂	4-6	10+	10+	7-9	7- 9	4-6	10+	4-6	10+	10+	7 - 9	10+	10+	7 - 9
S ₃	E	E	E	H	E	H	H	H	E	E	E	E	E	E
S ₄	1-4	8- 10	8-10	5-7	5- 7	8-10	8-10	8-10	5-7	1-4	8 - 1 0	5-7	8-10	8 - 1 0
S ₅	E	H	E	E	H	E	E	E	E	E	E	E	E	H
S ₆	B	D	D	D	B	D	B	D	D	D	D	B	B	D
S ₇	H	E	H	E	E	E	Y	Y	E	E	E	E	Y	E
S ₈	BKD	BF	ÜTO	BKD	B K D	BKD	BF	ÜTO	BF	BKD	B K D	BF	ÜTO	B K D
S ₉	T	A	Ü	D	T	T	A	Ü	Ü	Ü	Ü	Ü	T	A

S1: How many years have you been operating as a factory?

S2: How many tons of wheat do you purchase per month?

S3: Does your factory have a quality control unit?

S4: How old are your wheat stocks?

S5: Do you use chemicals?

S6: The reason for using chemicals?

S7: Do the factories have the appropriate equipment for analysis?

S8: Which one is given priority in wheat selection?

S9 : Wheat supply place?

Y Not enough

U:From the manufacturer

T: From wholesaler

B: In order not to go stale

D: In order not to decrease in value

BKD: The quality value of wheat

ÜTO: The familiarity of the manufacturer

BF: Wheat price

Y: Yes

N: No

O:Other

A:From the agent

3.3. Selection of the Expert Group

In this part of the research, it is aimed to form an expert group whose opinion will be sought to compare the criteria taken into account in wheat purchase. In general, the descriptive information of the persons obtained through the survey in the province-based examination;

1. Gender distribution
2. Age distribution
3. Graduated school status
4. Working time in the factory
5. Number of experts employed in wheat purchase

It is covered in the framework.

Table 20: Gender

	Frequency	Percent(%)	Valid Percent(%)	Cumulative Percent(%)
Woman	27	43,5	43,5	43,5
Male	35	56,5	56,5	100,0
Total	62	100,0	100,0	

Table 20 shows the gender distribution of the 62 experts who participated in the survey. According to this distribution, 43.5% of the participants are women, while 56.5% are men.

Table 21: Age distribution information

	Frequency	Percent(%)	Valid Percent(%)	Cumulative Percent(%)
18-24	3	4,8	4,8	4,8
25-30	30	48,4	48,4	53,2
31-36	22	35,5	35,5	88,7
37 and Over	7	11,3	11,3	100,0
Total	62	100,0	100,0	

When the gender groups of the 62 experts who participated in the survey are examined in Table 21, 48.4% of the participants are in the 25-30 age group, 35.5% are in the 31-36 age group, 11.3% are in the 37 and over age group, and 4% are in the age group of 37 and over. It was determined that 0.8 of them were distributed between the age group of 18-24.

Table 22: Graduated school information

	Frequency	Percent(%)	Valid Percent(%)	Cumulative Percent(%)
Middle School	8	12,9	12,9	12,9

High school	38	61,3	61,3	74,2
University	16	25,8	25,8	100,0
Total	62	100,0	100,0	

When the graduation status of the experts in Table 22 is examined, it has been determined that 61.3% of the individuals are high school graduates, 25.8% are university graduates and 12.9% are secondary school graduates.

Table 23: Factory working time information

	Frequency	Percent(%)	Valid Percent(%)	Cumulative Percent(%)
1-3	15	24,2	24,2	24,2
4-6	30	48,4	48,4	72,6
7-9	7	11,3	11,3	83,9
10 and Over	10	16,1	16,1	100,0
Total	62	100,0	100,0	

48.4% of the experts continue to work in the same factory for 10 or more years, 24.2% within the range of 4-6 years, 11.3% within the range of 1-3 years, and 16.1% within the range of 7-9 years. It was determined that (Table 23).

Table 24: Number of experts employed in wheat purchase

	Frequency	Percent(%)	Valid Percent(%)	Cumulative Percent(%)
1-3	38	61,3	61,3	61,3
4-6	24	38,7	38,7	100,0
Total	62	100,0	100,0	

In Table 24, the number of experts working in the wheat purchasing of the factories participating in the survey in Kırşehir was investigated. According to the results of the survey, 61.3% of the factories employ 1-3 people, while 25.8% employ 10 tons and above, 38.7% employ 4-6 experts and according to the research result, the number of experts working is 6 people. It was found that he did not exceed it. It has been understood that the number of experts in the factories subject to the research is concentrated between 1-3.

3.4. Determination of the Criteria Considered in Wheat Selection

The findings of the questionnaire applied to the expert group in order to determine the factors affecting the wheat to be put into production by the factories are examined in this section.

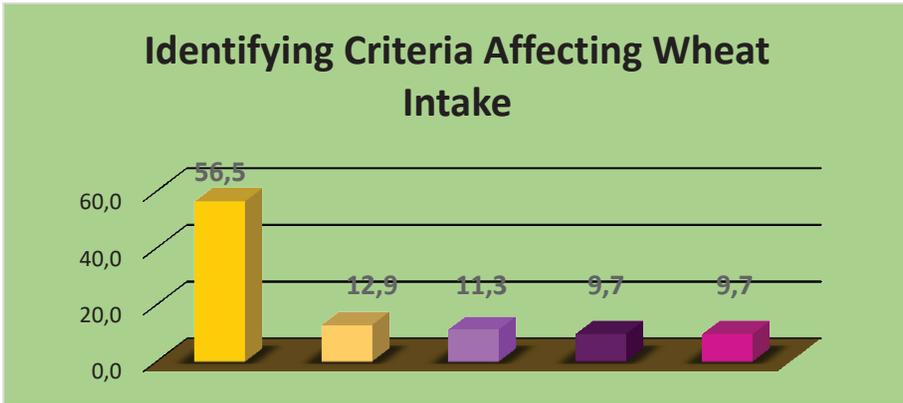


Figure 16: Identifying criteria affecting wheat intake

Table 25: Information on determining the criteria affecting wheat intake

	Frequency	Percent(%)	Valid Percent(%)	Cumulative Percent(%)
P-C-T	35	56,5	56,5	56,5
P-B-A	8	12,9	12,9	69,4
T-B-P	7	11,3	11,3	80,6
C-B-A	6	9,7	9,7	90,3
A-C-T	6	9,7	9,7	100,0
Total	62	100,0	100,0	

***P B:Botanic A:Agricultural C:Chemical T:Technological
:Physical

The purchases of the factories are 56.5% physical-chemical-technological analysis, 12.9% physical-botanical-agricultural analysis, 11.3% technological-botanical-physical and 9.7% chemical-botanical-agricultural and It was revealed that they took into account the technological-chemical-agricultural analyzes (Figure 16 and Table 25). When Table 36 is examined, it has been determined that the most physical-chemical-technological analyzes are among the criteria that people who work as experts in the factories operating in the province of Kırşehir pay attention to when purchasing wheat.

Table 26: Physical analysis criteria information

	Frequency	Percent(%)	Valid Percent(%)	Cumulative Percent(%)
HLA-TA-TS-TSB-YM-R	49	79,0	94,2	94,2
TA-OY-	3	4,8	5,8	100,0

**Y-C-TSB-
HLA**

Total	52	83,8	100,0
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When the processes they apply most in physical analysis are examined, 94.2% of them have hectoliter weight-1000 grain weight-grain hardness-grain shape and size-density amount-color criteria and 5.8% of them have 1000 grain weight-milling ability-density-color criteria. It was concluded that they considered the criteria of grain shape and size-hectoliter weight (Table 26).

Table 27: Chemical analysis criteria information

	Frequency	Percent(%)	Valid Percent(%)	Cumulative Percent(%)
KM-PM- NM	39	62,9	78,0	78,0
PM-SA- HE	5	8,1	10,0	88,0
NM-SA- HE	6	19,4	12,0	100,0
Total	50	80,6	100,0	

In chemical analysis, when the processes they apply most are examined, 78% of them consider the ash content-protein content-moisture content criteria, 12% the moisture content-free acid-raw fiber and 10% the protein content-free acid and crude fiber criteria. conclusion was reached (Table 27).

Table 28: Technological analysis criteria information

	Frequency	Percent(%)	Valid Percent(%)	Cumulative Percent(%)
YG-GID- NS-GS-A- DS	16	25,8	32,0	32,0
KG-A- ETS-FTS- GID	7	11,3	14,0	46,0
GID-GM- NS-GS- ZNM-DS	27	43,5	54,0	100,0
Total	50	80,6	100,0	

When the processes they apply most in the technological analysis are examined, 54% of them have gluten index value-gluten amount-normal sedimentation-delayed sedimentation-damaged starch amount-falling number criteria, 14% of them have dry gluten-alveograph-exentograph test results-farinograph test results-gluten index. and 32% of them considered wet gluten-gluten index

value-normal sedimentation-delayed sedimentation-alveograph and falling number criteria (Table 28).

Table 29: Botanical analysis criteria information

	Frequency	Percent(%)	Valid Percent(%)	Cumulative Percent(%)
A-C-D	9	14,5	64,3	64,3
C-D	4	6,5	28,6	92,9
D-A	1	1,6	7,1	100,0
Total	14	22,6	100,0	

When the procedures they used most in botanical analyzes were examined, 64.3% of them had tr.aestivum-tr.compactum-tr.condition criteria, 28.6% of them were tr.compactum-tr.durum and 7.1% of them were tr.aestivum- tr. It was concluded that they considered the criteria (Table 29).

Table 30: Agricultural analysis criteria information

	Frequency	Percent(%)	Valid Percent(%)	Cumulative Percent(%)
S-PH-R	7	11,3	43,8	43,8
PH-R	6	9,7	37,5	81,3
R	3	4,8	18,8	100,0
Total	16	25,8	100,0	

When the most frequently applied processes in agricultural analyzes were examined, it was concluded that 43.8% of them took into account the criteria of rust diseases-rash, 37.5% of them took into account the criteria of rust diseases-rash and 18.8% of them took into account the criteria of smut (Table 30).

Based on the expert opinions as a result of the survey study, physical-chemical-technological analyzes with 56.5% were the most used analyzes, so it was a factor in limiting the research with the mentioned criteria. Among these analyzes, when examined within the physical analysis, it was seen that there were 94.2% hectoliter weight, 1000 grain weight, grain hardness, grain shape and size, foreign matter, color criteria. It has been determined that within the chemical analysis, maximum 78% should include ash content, protein content, and moisture content criteria. Technological analyzes determined that maximum 54% should be gluten index value, gluten amount, normal sedimentation, delayed sedimentation, damaged starch amount, falling number. In the light of this information, a total of 3 main criteria and a total of 15 sub-criteria related to this were examined in the study (Table 31).

Table 31: Wheat quality criteria

FLOUR QUALITY CRITERIA	
MAIN CRITERIA	SUB-CRITERIA
Physical Analysis	Hectoliter Weight
	1000 Grain Weight
	Grain Shape and Size
	Grain Hardness
	Colour
	Absence of Foreign Matter
Chemical Analysis	Ash Amount
	Moisture Amount
	Protein Amount
	Gluten Amount
Technological Analysis	Gluten Index Value
	Normal Sedimentation Test
	Delayed Sedimentation Test
	Damaged Starch Test
	Drop Count Test

3.5. Factors Affecting Quality in Wheat

The grain with the largest production and consumption area in the world is wheat. Although wheat is an agricultural product that can adapt to all climates in general, many factors affect its quality. Quality can be defined as conformance to requirements rather than best/most expensive. Wheat quality, on the other hand, can have different meanings for each segment. For example, efficient and disease resistant for the farmer; clean for the trader, high hectoliter; white, high flour yield, low energy consumption for the miller; According to the bakery products sector, it is accepted as a quality wheat that yields flour suitable for the product characteristics they use.

Many analyzes are made while the wheat is purchased for production. Because not all wheat grown in the field can have the same characteristics. Physical, chemical, technological, botanical and agricultural analyzes are carried out to determine the quality of wheat. Among these, only physical, chemical and technological analyzes will be included in the study. In this part of the study, the analyzes made in wheat purchase and the sub-analysis types made under these analysis headings will be explained.

3.5.1. Physical Analysis

Color, absence of foreign matter, hectoliter weight, 1000 grain weight, grain hardness, grain shape and size are physical analyzes used to evaluate wheat yield. As the name suggests, physical analyzes provide information about the physical properties of wheat (MEB, 2013).

Color: Flour should have a unique color and appearance, and the color in flours varies according to the type of wheat. Flours have a color transition from yellow to white (MEB, 2013). Color of wheat varies according to hardness and planting period. In general, the color of hard wheat flour is yellowish, while soft wheat flour is white (MEB, 2013).

Hectoliter Weight: Hectoliter (HLA) weight is an important quality characteristic, wheat with high hectoliter weight yields more flour and starch content is high in this type of wheat and it is the simplest and most widely used unit of measurement. It allows us to obtain the weight of 100 liters of wheat in kg (Taş, 2001). HI weight is determined by the fullness, density, shape, size, surface roughness, humidity, etc. of the grain. The presence of such inputs affects the hectoliter.

Thousand-Grain Weight: It is the weight of one thousand grains of wheat in grams and is stated as dry matter. Density and size affect this weight. The ratio of endosperm to non-endosperm parts of large and dense grains is higher than for small grains. The thousand grain weight varies according to the variety, climate and soil conditions. Since the air flow during grain ripening will prevent starch accumulation in the grain, the weight of the undersized grains decreases. It is considered a healthier measure in estimating the flour yield of the wheat grain (URL-5, 2016).

Grain Shape and Size: Wheat grain is elongated or spherical, round in shape and in different sizes depending on the variety. The grain is 3-5 millimeters or 5-8 millimeters long and 1.5-2.5 or 2.5-4 millimeters wide. It is as if the grain was divided into two by the slit called the abdominal line extending from the front of the grain, and the back part is a little hunched. There is a Germ-Embryo at the lower end of the grain, and beards on the upper side. The shape of the grain varies according to the variety, and durum wheats are large and long, bread rolls are smaller and rounder (MEB, 2012). The flour yields of large grain wheats are higher. The concept of grain size differs according to the time of wheat growing, the climate where it is grown and the type of wheat planted.

Grain Hardness: The hardness or softness of the grain is a characteristic of the variety, but it shows great changes with the effect of climatic conditions. Generally, the gluten amount of hard grains is high and the

quality is evaluated as good. Hardness and softness are also important in terms of grinding technique. While milling requires more energy for hard wheat, this is not the case for soft wheat (MEB, 2012).

Foreign Matter: Another factor affecting the quality of wheat is foreign matter. Foreign matter is important for the milling value of wheat and includes all organic and inorganic substances found in wheat. If the rate of foreign matter in wheat increases, the quality decreases (MEB, 2012). A decrease in the quality of wheat can be observed with an increase in the amount of foreign matter. For this reason, foreign matter in wheat, weed seeds, stone, soil, straw, straw, etc. can be counted among the factors that decrease the quality of wheat.

3.5.2. Chemical Analysis

Moisture content, protein content and ash content are chemical analyzes used to evaluate wheat quality. The use of wheat and flour for a specific purpose is closely related to its chemical composition. It is used to determine the properties that must be known in terms of providing the legally required qualifications in flour and that must be taken into account when analyzing wheat or flour (MEB, 2013).

Amount of Ash: The high amount of ash in the flour is an indicator of the efficiency of the flour, and as the yield of flour increases, the bakery value of the flour decreases. For this reason, it is not desirable for flour to have high ash content (MEB, 2013). The amount of ash varies according to the variety, growing conditions, climate and soil characteristics. The arid climate also reduces the amount of ash. Ash; It is a residue formed by inorganic material oxides as a result of burning a plant material (Ünal, 2003).

Amount of Moisture: When the amount of moisture in the flour is high, it causes problems in storage, but undesirable situations such as mold, fungus and infestation occur. For this reason, the amount of moisture in the flour should be low. As the moisture content increases, the dry matter content decreases. Excessive moisture reduces the quality of the flour and it is recommended to reduce the amount of moisture in the flour in order to produce better quality.

Protein Amount: Protein ratio is one of the criteria used to determine wheat quality (Karaman et al., 2012) and is very important in terms of quality control. Because the physical properties of the dough, the water removal of the flour and the development time of the dough improve with the amount of protein (Ertuğay, 1980). In general, the amount of protein is high in hard wheats in arid areas, those grown in nitrogen-rich soils, and those planted in summer, and the amount of protein in wheat increases in periods when the development period is short and there is no precipitation (Güler and Akbay, 2000).

3.5.3. Technological Analysis

Many technological analysis features are used in the quality evaluation of wheat and flour obtained from wheat. Thus, much healthier and more important values can be obtained. Among them, the amount of wet core (gluten), gluten index value, normal sedimentation value, delayed sedimentation value, falling number value and damaged starch amount are among the technological analyzes frequently used to evaluate wheat yield.

Amount of Gluten: Gluten is an elastic protein, which is one of the important indicators of the bread quality of wheat and shows the suitability of the dough for bread making (Bulut, 2012: 443). It is a protein found in wheat and gives strength to gluten dough with its elastic structure. Gluten; climate, type of wheat, ripening time etc. may vary according to factors. The fact that the wet essence is high is an indication that the quality of the flour for bread making is good. This amount decreases as in the protein ratio in the rainy crop years of the grain filling period, and increases as in the protein ratio in the dry years in the grain filling period of the wheat (Bulut, 2012: 443).

Gluten Index Value: It is a parameter that gives information about the gluten quality of the flour, and it is based on the determination of the amount of wet gluten that passes through a special sieve and does not pass during centrifugation at a constant speed for 1 minute. As the gluten index value increases, the gluten quality of the flour increases (Menderis et al., 2008), and the gluten index value is calculated with the equation 3 below.

$$\text{Gluten Index} = \frac{\text{The amount of gluten that does not pass the sieve}}{\text{Total amount of gluten}}$$

(3)

Normal Sedimentation Test (Zeleny Sedimentation Test): The normal sedimentation test is a method that can be used for estimating the protein amount of wheat with the same gluten quality as it indicates gluten amount and quality. The fact that this value is high indicates that the essence (gluten) retains water well and the volume of the breads made from them is high (Elgün et al. 2001). Zeleny sedimentation value expresses the volume of flour particles that settle after a certain time in the suspension prepared with flour and lactic acid solution (Bulut, 2012: 444).

Delayed Sedimentation Test: It is a method applied to determine the wheat damaged by sunn pest or the flour obtained from them

(Gündoğdu, 2006: 26). Sunn pest is an insect with a flat body, about 1 cm in length, and prevents the formation of spikes in the grain by sucking the sap inside the grains by inserting the stem in the early period (Sertakan, 2006).

Damaged Starch Test: This test is a feature that occurs in roller mills during grinding. While the amount of damaged starch increases in hard wheat, less damage occurs in soft wheats (Karaduman: 3). While the amount of damaged starch in flour to a certain extent is desired in terms of enzyme activity and product properties; Excessive damage leads to the emergence of undesirable situations.

Falling Number Test: This test, which is used to determine the activity of the amylase enzyme present in flour (Bulut, 2012: 443), is a method used to determine the diastatic activity in wheat flour or flour. It is especially important in terms of the amount of gas that will occur in bread making and the growth of bread volume (Sertakan, 2006).

4. Conclusion

Although there are many fields in the sector, the most common one is the product sector obtained from cereals. The fact that the agricultural sector has an important share in meeting the basic needs of people has been a factor in this sector's coming to the fore. Wheat is produced in very different qualities in our country, and not every wheat has the same structure. Thanks to the analyzes used in production, wheat with different characteristics allows the gathering of those with similar characteristics and the establishment of certain quality standards. These factors are also widely used to determine the quality group of the flour and are of great importance for the dough of the flour. The importance of flour production has led to the emergence of many competitive companies on the basis of the sector. In this competitive environment, it is considered as one of the most important factors that affect the companies' ability to meet consumer demands and to take them one step ahead in the production of high quality flour. In this context, if the quality of the product produced meets the demands of consumers, this situation can be a guide for companies to differentiate from each other in a competitive environment.

Decision making is a very difficult action. Especially nowadays, this action has become more difficult. Using the necessary information among the increasing piles of information is a difficult action to decide on this information (Aytekin and Pekkaya, 2021). The study was conducted to guide the decision maker and to facilitate the decision-making action. In the study, factor analysis was performed on the results of the questionnaire prepared by expert opinions and important criteria were determined. Within the scope of the study, 15 criteria were determined and these criteria were grouped under three headings. Three of the five titles determined in the study were significant, and the other two were excluded from the study. In short, it has been determined as technological, physical and chemical analyzes that have critical value for experts.

It is expected that the study will guide the decision makers. It is possible to save both time and cost with the work done. It is thought that this study can be taken one step further and a decision support system can be created to guide the user.

5. Bibliography

- Arisoy, H. and Oguz, C. (2005). Usage Level of Newly Developed Wheat Varieties by Agricultural Research Institutes and Comparative Economic Analysis with Traditional Varieties: The Case of Konya Province, YNo: 130, Ankara, 5-24.
- Aydogan, S., Göçmen Akçacık, A., Şahin, M., Kaya, Y. (2007). Relationships Between Yield and Some Quality Traits in Bread Wheat (*T. Aestivum L.*) Genotypes. Bahri Dağdaş International Agricultural Research Institute, Vol.16(1-2), Konya, 21-30.
- Aytekin, A. and Pekkaya, M. (2021). Determining the Competencies Necessary for Exporting in Furniture with Decision Tree Models, *Drvna Industrija*, 72(1), 13-30.
- Aytekin, A., Ayaz, A. and Tüminçin F. (2019). Intelligent and Natural Agriculture with Industry 4.0, *Journal of Bartın Forestry Faculty*, 32(3), 938-944.
- Bulut, S. (2012). Quality in Bread Wheat. *Journal of Erciyes University Institute of Science and Technology*, Vol 28(5), 441-446.
- Demir, M. and Mazman İtik, Ü. (2005). Analysis of the Relationship Between Quality and Cost Categories in a Production Enterprise, *Bartın University, Journal of Economics and Administrative Sciences*.
- Doğan, Y. and Kendal, E. (2012). Determination of Grain Yield and Some Quality Traits of Bread Wheat (*Triticum aestivum L.*) Genotypes, *Journal of GOU Faculty of Agriculture*, 29(1), 113-121.
- Elgun, A., Turker S., Bilgicli, N. (2001). Analytical Quality Control in Cereals and Products. Selcuk University, Faculty of Agriculture, Department of Food Engineering Publication No:2.
- Ertugay, Z. (1980). A. Studies on Bread Quality of Cracked Wheat (Tr. L. Var. Delfii') Cultivated in the Eastern Anatolia Region. Doctoral Thesis. Erzurum: Atatürk University. Faculty of Agriculture.
- Ertugay, Z., Quality Relationships Between Wheat, Flour and Bread, Atatürk University Faculty of Agriculture, Department of Dairy and Food Technology, 166.
- Güler, M. and Akbay, G. (2000). The Effects of Irrigation and Nitrogen Fertilization on Protein Yield in Bread Wheat (*Triticum aestivum L.*), *Turk J Agric For* 24 (2000) 317– 325, TÜBİTAK.
- Gundogdu Sertatan, S. (2006). Usage Possibilities of Triticale Flour in Biscuit and Cracker Production. Unpublished Doctoral Thesis. Edirne: Trakya University. Graduate School of Natural and Applied Sciences.

Karaman, M., Kendal, E., Aktaş, H., Tekdal, S., Altıkat, A. (2012). Evaluation of Some Domestic and Foreign Bread Wheat Varieties in Terms of Quality Parameters. *Journal of Agricultural Sciences Research*, 5 (2): 29-32.

Karaduman, Y. Quality Evaluation of Wheat. Eskişehir: Anadolu Agricultural Research Institute, Quality and Technology Department.

Kobu, B. (2008). *Production Management*, Istanbul: Beta Publishing House.

Kumkale, I. (2010). *General business*. Trabzon: Murathan Publishing House.

Menderis, M., Atlı, A., Köten, M. and Kılıç, H. (2008). Bread Wheat Quality Evaluation by Gluten Index Value and Wet Gluten/Protein Ratio. *Journal of Harran University Faculty of Agriculture*, 12(3):57-64

Ministry of National Education, Food Technology, Analysis in Flour and Bakery Products 1, Ankara, 2012.

Ministry of National Education, Food Technology, Analysis of Flour and Bakery Products 2, Ankara, 2013.

Mucuk, I. (2003). *Modern Business*. Istanbul: Turkmen Bookstore.

Şahin, M., Göçmen Akçacık, A., Aydoğan, S., Taner, S., Ayrancı, R. (2011). Investigation of the Relationships Between Some Quality Traits and Mixograph Parameters in Bread Wheat. *Journal of Field Crops Central Research Institute*, Vol 20 (1), 6-11.

Simsek, S. (2009). *Introduction to Business Science*. (15th Edition). Konya: Adim Printing House.

URL-2 (2016). <http://kirsehir.tarim.gov.tr/Belgeler/web%202014%20briefing.pdf> (05.01.2016).

URL-5 (2016). <https://uzerm.files.wordpress.com/2011/02/bin-taneac49fc4b1rlc4b1c49fc4b1.pdf> (13.02.2016).

Ünal S. (2003), "Methods Used in Determining Wheat and Flour Quality", Nevşehir Economy Problems and Solution Suggestions: Example of Flour Industry, Nevşehir Economy Symposium I, 15-29.

Stone, B. (2001). Investigation of Some Quality Characteristics of Some Bread Wheat Varieties in Bursa Ecological Conditions. *Uludag University Journal of the Faculty of Agriculture*, 15: 43-54.

Turkish Statistical Institute (2015). <https://biruni.tuik.gov.tr/> , 03.01.2015.

Chapter 5

REAL-CONJECTURE DOMESTIC PUBLIC DEBT POLICY: IS IT AN ALTERNATIVE FOR FLEXIBLE PUBLIC DOMESTIC DEBT?¹

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Introduction

There are two criteria for distinguishing between domestic and external debt:

-Nationality of the creditor,

-Nationality of the market where borrowing takes place (Erdem, 2006: 41). However, globalization in financial markets has invalidated one of these criteria. Today, foreign individuals and institutions can also bid for the domestic borrowing tender in Turkey. It is necessary to examine borrowing with objective criteria and in terms of schools of economic thought.

In neoclassical theory, public debt acts as a buffer in case economic activity falls into a bottleneck (for example, due to war). Managing public debt is attractive to the government to avoid large accidental fluctuations in tax rates from period to period. This motivation explains the tendency of governments to return large real deficits during wars and recessions while returning real surpluses on good days. In other words, the task of the public debt is to ensure the proper functioning of the economy and tax system and to act as a buffer in emergencies. After all, politics (or political motivations) does not aspire to any task in the debt accumulation process in neoclassical economics. Yet, Alesina and Tabellini showed that debt accumulation can also result from strategic behavior, that is, debt itself may be a strategic choice made in turn by ruling policymakers (or parties). Thus, the strategic use of debt may result in a higher level of public debt than the socially optimal equilibrium level (Takacs and Benczes, 2014: 61-62). Particularly, floating debts have strategic importance in terms of short-term budget balance.

The usability of public debt for strategic purposes has directed us to formulate a domestic borrowing policy based on strategic, that is, real cyclical interest-free formation. Here, our thesis is that the current high-interest and inefficient borrowing process can be replaced with efficient borrowing models. Our goal is to “establish domestic debt income mechanisms” that are compatible with current economic conditions. In the current situation, the domestic borrowing interest rates are too high considering the economic conditions of the country. The influence of the international usury system on the country's domestic borrowing process is a big concern. The problem is that the domestic borrowing process has stuck in a vicious circle.

1- Literature

Kathryn (2017) discusses conjuncture cycles in relation to internal-external causes, economic expectations, and consumer

misunderstandings. The book examines expectation, subjective time preference, and the formation of conjuncture cycles. One of the rising periods of the conjuncture is inflation.

The work edited by Schwartz (2009) examines the causes and effects of inflation. The book covers price behavior in hyperinflation, macroeconomic policy in an inflationary environment, monetary policy in an inflationary environment, wage inflation and labor market pressure, etc. The composition or elements of inflation types (CPI and PPI, etc.) to be used in the economic analysis should be well defined.

Özpolat (2020) discussed the causal link between CPI and PPI and performed panel data analysis in selected Central and Eastern European countries. The pass-through between the CPI and PPI indices is important for the accurate formation of monetary policy.

Koçak (2021) examined the alternative measurement of the pass-through from producer to consumer indices for Turkey with sub-indices and determined that the pass-through from PPI to CPI sub-index is high. In Turkey, which is a candidate country for the EU (European Union), it is clear that the central government budget and other budgets should be formed in a way that predicts CPI or PPI fluctuations.

Goetz (2016) and Patz(2016) questioned whether the EU is moving towards a more centralized EU Budget management, based on the assumption that budgets are suppressed in the European Commission. They examined whether the revenues obtained from the expenditure savings and the activities of the spending institutions evolve towards profitability at the end of the year. Above all, saving in public expenditures is among the priorities in EU candidate countries.

Alkin (2016) discussed the case of the Turkish economy as a growing market economy in the context of the savings problem and concluded that the Turkish Public Economy has evolved towards saving in public expenditures. The public sector savings will help overcome the negative phases of the conjuncture with the least damage.

Wesselbaum (2018), in his article on fiscal policy in a business cycle model with endogenous productivity, revealed that demand-side fiscal policies have long-term effects on the business cycle. The author noted that productivity in the public economy has positive effects on economic business cycle fluctuations. Within the scope of demand-side fiscal policies, there is also a need to use domestic borrowing to combat the negative conjuncture.

In retrospect, the model we propose is not an "interest-free (coupon-free) government domestic debt securities" model, as there is no

debt security with a certain nominal value. These bills are discounted bills issued by way of tender (Sugözü, 2010: 121). At first glance, these model(s) can be considered as a kind of "revenue partnership model" (Public Partnership, 1984). However, there is no income from public infrastructure facilities. Therefore, the model(s) we recommend are not present in the literature. Most importantly, the domestic borrowing models we propose are of the "fluctuating debt or borrowing" type.

2- Economic Conjuncture

Conjuncture cycles, also known as business cycles, are successive expansion and contraction phases in the total volume of economic activity. These movements in the direction of fluctuation in the volume of economic activity affect variables such as gross national product, manufacturing industry production, unemployment rate, and foreign trade balance. A business cycle consists of four phases: expansion, recession, contraction, and recovery. The expansion phase is a phase in which economic activities develop gradually. During a recession, the volume of economic activity reaches its highest point and stays there for a short time before starting to contract. In the contraction phase of the conjuncture, the total activity volume starts to decline after the peak and descends to the lowest point. In the recovery phase, the activity volume, which fell to the lowest point, recovers and begins to expand again. Cyclical fluctuations are of different types in terms of duration, frequency, and intensity. According to Joseph A. Schumpeter, economic conjuncture fluctuations are divided into three in terms of duration. The first cyclical fluctuations to be examined in terms of duration are the Kondratieff waves, which are long-term economic cycles that last between 54-60 years. The second type is Juglar cycles that last 9-10 years. The third type is the Kitchin cycle, a short business cycle repeated at intervals of 40 months (Seyidoğlu, 1992: 490-491).

Macroeconomic variables exhibiting cyclical movements are divided into three parts according to the conjuncture type:

- Procyclical Macroeconomic Variable: These types of variables tend to increase in the recovery period and decrease in the economic contraction period.

- Countercyclical Macroeconomic Variable: These types of macroeconomic variables tend to decrease in the recovery period and increase in the contraction period of the economy.

- Acyclical Macroeconomic Variable: These types of macroeconomic variables are those that are not related to the conjuncture movement, that is, to the recovery and contraction periods in the economy (Şimşek, 2015: 11).

Economic conjuncture fluctuations were briefly mentioned to clarify the subject discussed in our study.

3- Inflation and Inflation Measurement

Inflation is the process of continuous price increase or the continuous depreciation of money. This definition also describes what inflation is not. Inflation is not a one-time or short-term price increase in the general level of prices. Likewise, inflation is not the price increases seen during the expansion periods of the economic fluctuation and decreases during the contraction period. However, when price increases cannot be reversed, then the situation is considered inflation. Inflation is not a situation that expresses price increases in a single good or in many goods. A general price increase below 1% annually cannot be regarded as inflation (Frisch, 1989: 1).

Inflation is a serious economic problem for developing countries.

3.1- Consumer price index

The index showing the increase in the prices of goods and commodities consumed by consumers in a year (in a month) compared to a base year is called the consumer price index (CPI). During CPI calculation by the relevant institutions, a basket consisting of n consumption goods is defined and the market price values of this basket in a base year and in the current year are calculated. These calculated values represent the prices of the defined basket in the current year and in the base year (how much the consumer needs to spend in the current and base year to purchase the defined basket, E). Therefore, the CPI is equal to the ratio between the current year and the base year values of the defined basket. CPI can be formulated as follows (Ünsal, 2007: 222-223):

$$CPI = \frac{E_1(m_1)}{E_0(m_0)} \quad (1)$$

The CPI being high or low is an important indicator of the level of economic development. In government domestic debt securities, a borrowing income return should be provided to real persons at the rate of the CPI index as a single real return.

3.2- Producer price index

The basket on which the price index calculation is based can be formed as a basket consisting of intermediate goods and investment goods such as machinery and equipment. The price index calculated over such a basket of production goods is called the producer price index (PPI). Since the PPI is an index calculated by the prices paid by the producer, the inflation rate calculated over the producer price index is

called the producer price inflation rate (Ünsal, 2007: 99). PPI can be formulated as:

$$PPI = \frac{PE_1(pm_1)}{PE_0(pm_0)} \quad (2)$$

In essence, the PPI is a striking indicator of the "theory of comparative advantage" in the industry. In government domestic debt securities, only a single real return should be provided to legal entities at the rate of the PPI index.

4- Central Government Budget Surplus and Budget Surplus Share Ratio

Although the budget balance in the classical fiscal approach emphasizes complete equality between income and expenditure, in reality, this understanding is based on the principle that the income estimates are slightly higher than expenditure estimates. While this equivalence is between income and expense estimates, it also predicts equivalence between final accounts. Equivalence to be provided in final accounts also indicates adherence to the principles of honesty, sincerity, and openness. Therefore, the main purpose is to establish financial balance; other principles gain value only to the extent they serve to realize this purpose (Edizdoğan, 2007: 179-180). Both the income and expenditure estimates of the central government budget and the final accounts include the effects of automatic stabilizers.

Automatic stabilizers weaken the impact of voluntary fiscal policies, but this effect is valid for stable economies without inflation. If there is an increase in the full employment income level as a result of the increase in the labor force or the increase in productivity, the course of the budget surplus at full employment will be progressive, as taxes are more sensitive to income changes than expenditures. This trend will increase even more in a progressive tax structure with the increase in inflation while the expenditures are expressed in nominal terms. Without any improvement in the tax structure, this automatic feature of the fiscal policy will have a contractionary effect on the economy (Pinar, 2006: 62). The domestic borrowing models that we will introduce below are a type of automatic stabilizer based domestic borrowing models. These proposed domestic borrowing models constitute domestic floating debts with maturities not exceeding one year.

In a healthy economic structure, budget deficits should be accidental, and the budget surpluses should be permanent. Assuming a healthy economic structure, that is, based on the assumption that budget surpluses are permanent and budget deficits are accidental, a specific domestic borrowing model will be introduced gradually for these

economies. The motivation for putting forward this model and the other models below is to contribute to the stability and balance of the domestic borrowing policy of the economy. The first step is to act on the assumption that the budget has a surplus in the final calculation of the two periods before the budget deficit. The second step is the estimation of the tender amount and the number of tenders for the total domestic borrowing requirement in a budget year. In this case, the formula of the Budget Surplus Share Ratio (BSSR) can be put forward for borrowing relative to the surplus of the central government budget 2 years ago:

$$BSSR = \frac{\sum_{n=-2} DBS}{\sum_{n=2} DBA} + \frac{\sum_{n=-2} DBS}{\sum_{n=2+1} DTA} \frac{\sum_{n=2+1} DTA}{\sum_{n=2} DBA} \frac{\sum_{n=-2} DBS}{\sum_{n=2} DBA} \frac{\sum_{n=2+1} DTA}{\sum_{n=2+1} DTA} \quad (3)$$

Here,

DBS= Periodic budget surplus,

DBA= Periodic borrowing amount,

DTA= Periodical tender amount.

This element, which is one of the elements of cyclical borrowing models, is based on the budget surplus of the final accounting period.

5- Central Government Budget Expenditure Savings and their Share Ratio

With the policies implemented to realize the orthodox stabilization programs, it is aimed to use the local currency as an "anchor" in forward-looking decisions, mainly by using monetary instruments to stabilize prices. This practice requires a tight monetary policy and a serious discipline in public finances. The Economic Stability Decisions and Inflation Reduction Program of 09 December 1999 implemented in Turkey also recommends implementing a strict fiscal policy and with this policy, it is aimed to increase the primary surplus to be formed in the budget by increasing tax revenues and tax revenues and reducing public expenditures (Karluk, 2006: 57 and 69). As a result of the fiscal policies implemented for stability, the volume of the public sector is growing gradually.

The issue of Central Government Budget Expenditure Savings is included in the context of the "volume of the state", and in this context, it is necessary to mention the size of the state from a historical perspective. The reported weighted average size of government in 2007 (general public spending 40 percent of GDP (Gross Domestic Product)) was four times the average size of government in 1928 (9 percent of GDP). This is a well-established phenomenon explained by the so-called Wagner's Law:

As an economy experiences economic growth; a relative state size increases. A key extension of this phenomenon is that during the Great Depression (small) states could not repeat very large deficits as a share of GDP - either through self-stabilizers or reversible fiscal expansion (weighted average of 30 percent over periods) despite proportionally large fluctuations in nominal incomes and expenditures. At present, expenditures have again fallen by as much as 30 percent (weighted average over periods), while nominal revenues have fallen by a smaller proportion (weighted average of 7.5 percent over periods), but given the significantly larger government size on the economy, these changes, which are larger as a share of the total deficit (hence the debt), will have an effect (Abbas et al., 2014: 169-170). It will be appropriate for the public sector to grow with minimum domestic debt fluctuation.

In a healthy economic structure, the expenditures made above the expenditure item projection of the budget should show an accidental character, and savings in expenditures should be permanent. Given that the economy is in a healthy structure, that is, with the assumption that the savings made from the expenditure item of the budget are permanent, and the expenditures above the budget's expenditure item estimate are accidental, a special domestic borrowing model will be introduced gradually for these economies. The first step is to act on the assumption that in the final calculation of the two periods before the budget deficit and the period in which the budget is spent above the expenditure item forecast, the budget is saved from the expenditure item forecast. The second step is the estimation of the tender amount and the number of tenders for the total domestic borrowing requirement in a budget year. In this case, the following (EISSR) Expenditure Item Savings Share Ratio formula can be put forward for borrowing based on the savings obtained by the central government budget from the expenditure item 2 years ago:

$$EISSR = \frac{\sum_{n=-2} PEIS}{\sum_{n=2} DBA} - \frac{\sum_{n=-2} PEIS}{\sum_{n=2+1} DTA} \frac{\sum_{n=2+1} DTA}{\sum_{n=2} DBA} \frac{\sum_{n=-2} PEIS}{\sum_{n=2} DBA} \frac{\sum_{n=-2} PEIS}{\sum_{n=2+1} DTA} \quad (4)$$

PEIS= Periodic expenditures item savings.

This element, which is one of the elements of cyclical borrowing models, is based on saving from the expenditures item of the final accounting period.

6- Conjuncture and Productivity

Productivity is predicted to follow a course in the same direction or parallel to the cyclical fluctuation. It is estimated that both labor productivity and total factor productivity increase during economic recovery periods and decrease during economic contraction periods.

Increases in productivity show continuous fluctuations, and these fluctuations are procyclical. Labor productivity also moves in the same direction as the conjuncture (Erdogan, 2002: 55-56). The growth of the public sector should also be supported by monetary expansion during periods of weak conjuncture and recession.

In theory, attention should be paid to the presentation of uncertainty arising from probabilistic productivity and money growth rate shocks, as it means that the expected value of the value function emerges in the value function. Since the rate of money growth determines the present value of the money transfer, the operation of a state variable assumes that it is known in time in household decisions. The assumptions are based on the fact that productivity complexity was known at the beginning of the period (Walsh, 2017: 71).

Considering that productivity is parallel to the conjuncture, the increase in productivity in the private sector also causes an increase in productivity in the public sector.

7- Real-Conjecture Domestic Debt Models

This section will discuss CPI and PPI linked domestic borrowing models, as well as the model linked to central government budget surpluses and the central government budget expenditures savings.

In Turkey, inflation-indexed Government Domestic Debt Securities began to be issued in 1997 by the tender method, with two-year maturity or quarterly interest payments (Erdem, 2013: 112).

7.1- CPI linked domestic borrowing model

Our theory is about establishing a domestic debt model that efficiently evaluates household savings. In this model, domestic borrowing gives creditors a return only at the weighted average rate of fluctuations in consumer price movements in a certain period and does not offer any other return. However, in CPI linked borrowing model, the security of the creditor's receivables, that is, the high creditworthiness of the debtor, can be considered an additional return today, and this alternative cannot be ignored. In this borrowing model, the return on the domestic borrowing amount can be formulated as follows:

$$\sum CMDBY_{n+1} = CPI_{n+1} \times \sum DTA_n \quad (5)$$

Here;

CMDBY: CPI Linked Domestic Borrowing Model Yield

This domestic borrowing model is for households. This model is actually the recommended model for the financial markets of developed countries.

7.2- PPI linked domestic borrowing model

Our theory is about establishing a domestic debt model that efficiently evaluates the savings of institutions or legal entities. In this model, domestic borrowing gives a return to the creditors only at the weighted average rate of the fluctuations in producer price movements in a certain period, and it does not offer any other return to the creditor. However, securing the creditor's receivables in PPI linked borrowing model, that is, the high creditworthiness of the debtor, can also be considered a significant return, which is not an option to disregard. In the PPI borrowing model, the return on the domestic borrowing amount can be formulated as follows:

$$\sum PMDBY_{n+1} = PPI_{n+1} \chi \sum DTA_n \quad (6)$$

Here;

PMDBY: CPI Linked Domestic Borrowing Model Yield

This domestic borrowing model is for finance, commercial and industrial sectors, that is, those operating in these sectors can benefit from this loan opportunity. This borrowing model is thought to bring dynamism to the financial and money markets of developed countries. However, it is technically not possible to use both CPI and PPI Linked Domestic Borrowing Models together with the third borrowing model, which we will suggest below.

7.3- Budget surplus share ratio and the expenditures savings share ratio linked domestic borrowing model

Our theory is about establishing a domestic borrowing model based on the efficiency of the central government budget and budget expenditures for investors. In this model, domestic borrowing returns to creditors only at the weighted average rate of fluctuations in public sector productivity movements in a certain period, and it does not offer any other return to creditors. This domestic borrowing model proposes an inflation model at low CPI and PPI rates. However, also in this model, the security of the creditor's receivables, the high return on the creditor's receivables, and the high efficiency of the public economy are the main and important factors that increase the creditworthiness of the debtor, making it an attractive model. With the central government budget surpluses and central government budget expenditure savings, the return on domestic borrowing can be modeled as follows:

$$\sum BSSREISSRDBMY_{2+1} = (BSSR_{2+1} \chi EISSR_{2+1}) \sum DTA_{2+1} \quad (7)$$

Here;

BSSREISSRDBMY: Budget Surplus Share Ratio and the Expenditure Item Savings Share Ratio Domestic Borrowing Model Yield

This borrowing model provides a debt amount that can be productive for economies with a low informal economy. This model is a borrowing and resource valuation model that brings efficiency to the financial markets and money markets of both developed and developing countries, and borrowing in this model may attract the attention of the public, since the basis of this borrowing model is the habit and practice of "saving". After the implementation of this model, the CPI and PPI domestic borrowing models will also become widespread.

Conclusion

In conclusion, the domestic borrowing models introduced by this study give Pareto Optimal results. In other words, these domestic debt models do not distort the current income distribution data and do not worsen the income distribution. They also yield results that do not contradict the concept of "socioeconomic justice" proposed in the Rawlsian Social Welfare Theory. When the size of the country's informal economy is minimized, these borrowing models yield positive results in terms of Social Welfare. These debt models can be integrated into the existing macroeconomic structure and operate smoothly.

In fact, the primary purpose of this study is to emphasize the importance of establishing efficiency in all public service production units in the public economy. Then, the methods proposed based on efficiency in the domestic borrowing of the public sector can be applied as a policy tool by itself. If public domestic borrowing can be used in efficient service production areas, there will be no problem in paying these domestic debts with the proposed methods. The important thing here is to avoid a "vicious circle" in public domestic borrowing, and instead to create a "productivity cycle". Only in this way can the fate of underdevelopment be changed for the public economy.

With the CPI and PPI models in public domestic borrowing, creditors are paid a wear share in the CPI and PPI rates for the maturity of their receivables, that is, debts in inflation rates. These models are real-cyclical borrowing models. The tax exemption of the income that these borrowing models will provide to the creditors will also increase the attractiveness of these borrowing models. When a realistic evaluation is made, the return provided by financial institutions to their depositors is equal to the income provided in the CPI and PPI models when taxes are

deducted, and there is also a government guarantee for these debt instruments.

The Central Government Budget Surpluses and Central Government Budget Expenditures Savings linked public domestic borrowing model is a debt model based on efficiency in the public sector. With this model, it is desired to prevent inflationary pressure on the economy in borrowing. In fact, this model itself is a borrowing model against demand inflation. When this model is applied, the crowding-out effect will be minimal. In addition, this borrowing model can be shown as an exemplary proposal for the implementation of "neutral fiscal policy".

References

ABBAS, S.A., BELHOCINE, N., EL-GANAINY, A., WEBER, A. (2014), Current Debt Crisis in Historical Perspective, Eds.: C. COTTARELLI, P. GERSON and A. SENHADJI within, *Post-Crisis Fiscal Policy* (pp. 161-191), London: The MIT Press.

ALKIN, E. (2016), The Problematic of Savings: The Case of Turkey as an Emerging Market Economy. *Istanbul Kemerburgaz University Journal of Social Sciences*, 1(1), 55-71.

EDİZDOĞAN, N. (2007), *Kamu Bütçesi*, Bursa: Ekin Publications.

ERDEM, M. (2006), *Devlet Borçları*, Bursa: Ekin Publications.

ERDEM, M. (2013), *Devlet Borçları*, Bursa: Ekin Publications.

ERDOĞAN, L. (2002). *Verimliliğin Konjonktürel Dalgalanmalar Üzerine Etkisinin Analizi*. (Unpublished doctoral dissertation). Anadolu University/Institute of Social Sciences, Eskisehir.

FRISCH. H. (1989). *Enflasyon Teorileri*. (Trans. E. OKTAY, A. YİĞİDİM). Ankara: Elif Printing, Publication Co. Ltd. (Master edition date, 1984)

GENERAL MANAGEMENT OF LAW AND LEGISLATION, Public Partnership Fund Regulation No. 84/8495. (August 27, 1984). *The Official Gazette* (No.: 18502): Access address: <http://www.mevzuat.gov.tr>

GOETZ, K.H. and PATZ, R. (2016). “Pressured Budgets and the European Commission: Towards a More Centralized EU Budget Administration?”, *Journal of European Public Policy*, 23(7), 1-19.

KARLUK, S.R. (2006). Türkiye Ekonomisinde 1980 Öncesi ve Sonrası Yaşanan Krizlere Yönelik İstikrar Politikaları. H. SEYİDOĞLU, R. YILDIZ(Ed.) *Ekonomik Kriz Öncesi Erken Uyarı Sistemleri* includes (pp. 55-88). İstanbul: Arıkan Publications.

KATHYRN, M. (2017), *Business Cycles*, New York: Nova Science Publishers, Inc.

KOÇAK, N.A. (2021), Tüketici ve Üretici Fiyatları Arasında Geçişkenliğin Alternatif Ölçümü: Alt Endeksler Ayrımında Türkiye Örneği. *Dumlupınar University Journal of Social Sciences*, 23(67), 12-27.

ÖZPOLAT, A. (2020), Causal Link Between Consumer Prices Index and Producers Prices Index: An Evidence from Central and Eastern European Countries. *ADAM Academy Journal of Social Sciences*, 10(2), 319-332.

PINAR, A. (2006), *Maliye Politikası-Teori ve Uygulama*, Ankara: Naturel Publications.

SCHWARTZ, L.V. (2009), *Inflation-Causes and Effects*, New York: Nova Science Publishers, Inc.

SEYİDOĞLU, H. (1992), *Ekonomik Terimler-Ansiklopedik Sözlük*, Ankara: Güzem Publications.

SUGÖZÜ, İ.H. (2010), *Devlet Borçları IMF-Dünya Bankası ve Türkiye*, Ankara: Nobel Publications.

ŞİMŞEK, T. (2015). *Modern Konjktür Teorileri Çerçevesinde Ekonomik Dalgalanmalar: Politik İstikrarın Etkileri Üzerine Panel Veri Analizi*. (Unpublished doctoral dissertation). Hacettepe University/Institute of Social Sciences, Ankara.

TAKACS, V. and BENCZES, I. (2014), *Deficit and Debt in Transition*. Budapest: CEU Press.

ÜNSAL, E.M. (2007), *Makro İktisat*, Ankara: İmaj Publications.

ÜNSAL, E.M.. (2007), *Mikro İktisat*, Ankara: İmaj Publications.

WALSH, C.E. (2017), *Monetary Theory and Policy*, London: The MIT Press.

WESSELBAUM, D. (2018), Fiscal Policy in a Business Cycle Model with Endogenous Productivity. *Annals of Economics and Finance*, 19(1), 103-135.

Chapter 6

THE EVALUATION OF OCCUPATIONAL ACCIDENTS AND DISEASES IN THE WORLD AND TURKEY

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1. Introduction

The goal of this report is to assess occupational accidents and diseases around the world, as well as in Turkey. The information was gathered by researching various articles and books available online. An occupational injury is distinguished from an occupational disease, which is a disease that develops over time as a result of exposure to risk connected with work activities. An occupational accident is defined as an unanticipated and unplanned occurrence, including acts of violence that occurs during or in connection with work and results in personal injury, disease, or death for one or more workers.

When one worker sustains an occupational injury as a result of a single occupational accident, this is referred to as a case of occupational injury. An occupational injury could be fatal if the accident and death occurred within a year of the day of the accident, or it could be non-lethal with lost work time. Ineffectiveness for work is defined as the victim's inability to perform the normal duties of work in the job or post held at the time of the occupational calamity due to an occupational injury.

Incapacity can be either permanent or temporary. Cases of permanent incapability for work are occupational injury situations in which the injured person was never able to perform the normal duties of work in the job or position held at the time of the occupational accident that caused the injury. Cases of temporary incapability are occupational injuries in which the workers injured were unable to work on the day of the accident but were later able to perform the normal duties of work in the job at the time of the occupational accident causing injury within a year of the accident (1).

2. A historical examination of the list of Occupational Illness

The list of occupational illness established in the international and national legal systems has played critical roles in both worker disease prevention and compensation. The list of occupational illness is a collection of diseases caused by occupational exposure. The list includes the definition of each occupational illness and is based on fundamental occupational safety and health legislation (2).

Since its inception in 1925, the ILO list of occupational illness has played a critical role in synchronizing the development of occupational disease policies at the international level (3). The three occupational illness (anthrax, lead poisoning, and mercury poisoning) on the first ILO list of occupational illness, established in 1925 as a workmen's compensation agreement, represented an increase in occupational diseases as a result of the Industrial Revolution (4).

Until the 1960s, ten occupational diseases were listed in Convention

No. 121 as descriptive compensable occupational diseases, implying that occupational illness in this era were associated with industrial poisoning (5). Noise-induced hearing loss and several Bronchopulmonary illness have been added to the ILO occupational list since 1980, thanks to advancements in diagnostic techniques and medical science (6).

Changes in industry construction, emerging new chemicals, and advanced national worker's compensation schemes have prompted the ILO to revise the occupational disease list since 2002. A new ILO list format attached to Recommendation 194 (R194) consisted of two dimensions (causes and illness) and subcategories (7). Among the 50 member states that provided their national lists of occupational diseases, thirty countries were found to have a list of occupational diseases with a structure similar to the ILO list in R194 until 2012 (8).

2. Global Evaluation of Occupational Accidents and Diseases

The International Labor Organization (ILO) and the World Health Organization (WHO) have estimated occupational injuries and illnesses based on various starting points. The ILO has made universal estimates from the perspective of occupational burden, while the WHO has done so from the perspective of health. Both have concluded that work-related illnesses and occupational accidents account for 5-7% of all fatalities in industrialized countries (1, 2). This percentage is slightly lower in developing countries, where non-occupational health problems account for a larger proportion of the total (9).

As new evidence becomes available as work activities, work environments, and working populations change quantitatively and qualitatively, updates to evaluations become important. Better data is needed for policy and practice in countries, businesses, and organizations. Several methods have been used to conduct economic cost studies on accidents and diseases. The incidence approach, which counts new injuries, diseases, and disorders that occur in a given year, has proven to be the most appropriate method (10).

ILO and WHO member states regularly report their own statistics, which are collected, recorded, and reported by these United Nations (UN) bodies. Although reports from developed countries are generally more thorough, a large number of countries do not accurately report their data on work-related injuries and illnesses. Such omitted data for occupational injuries could be replaced by a proxy, a country, or a mean of several countries with meticulously similar economic structures, production methods, and work cultures, and that have stated such facts well. Many countries monitor and record occupational accidents, and the ILO, European Union (EU), and, to a lesser extent, other regional organizations collect

and record such national data. Nonetheless, national systems are frequently inadequately standardized, making international comparisons difficult. The best recorded data includes fatal injuries, which is also the starting point for estimating the number of less serious accidents. Many papers have explained the methodology for creating more similar approximations for occupational deaths and injuries, and the methodology has been gradually improved (11, 12).

At the global level, reliable and comparable occupational disease statistics based on compensated cases are not available. This shortage has been offset by population attributable fractions (AF) for work-related illnesses a broader concept than the typically legally defined term “occupational diseases.” The AFs are generally used to quantify the element or fraction of such work-related illnesses and deaths. These fractions have been extensively studied in developed countries, but there is very little data from developing countries. WHO death tables by region provide background information, and by using the AF constituent as a percentage, an approximate estimate of fatalities for each disease or group of diseases can be prepared. ILO and WHO data, as well as data from individual member states and the EU, were used (13).

The following were the most important AF values used in the ILO study (14):

I. Work-related cancer: AF accounts for 8.4 percent of all cancer deaths (13.8 percent male, 2.2 percent female).

II. Lung cancer and mesothelioma caused by asbestos 12.2 percentage points (14.0 percent male, 0.6 percent female)

III. External (passive) tobacco smoke, lung cancer, and circulatory diseases: AF lung cancer = 3.0 – 2.0 percent m/f

IV. Circulatory System Disorders: AF=12.4% (14.4 percent male, 6.7 percent female)

V. Respiratory system diseases: AF accounts for 4.1 percent of all cases (6.8 percent male, 1.1 percent female)

VI. Communicable diseases: AF=8.8% (4.8 percent male, 32.5 percent female, the last being high because of occupational infections in the health sector). This high AF value was regulated for developing countries where health district exposure is low in comparison to other agricultural and other exposures, such as tropical diseases, bacteria, viruses, and vector-borne diseases.

According to ILO-modified research for use as global evaluations, the total AF for work-related causes was 6.7 percent (2005). The AF

method is widely used to evaluate the work-relatedness of a wide variety of diseases and disorders. These AF values have been adapted from those originally used in Finland. These have been used in other parts of the world, most notably by the International Labor Organization (ILO) and in Australia, New Zealand, and Alberta, Canada. Estimates based on these AF values have been determined to be the most expressive globally to date (15,16,17,18,19,20). While slightly different AF values, such as those used by Steenland (2003), have been used, new data has come much closer to the AF values used by the ILO. For example, Rushton et al. have stated that occupational cancer kills 8010 people in the United Kingdom each year. Following this study, a group led by Mac Gormack from the International Agency for Research on Cancer discovered that the number of mesothelioma cases can be used as a sign and proxy for asbestos exposures that cause both mesothelioma and lung cancer (21,22,23). Lung cancer may cause 2-10 times the number of deaths as mesothelioma. Previous findings have used much lower lung cancer estimates. According to WHO and Nishikawa et al., asbestos alone causes 112,000 fatalities and 90,000 deaths each year. According to the ILO, the direct and indirect costs of occupational accidents and diseases, such as lost working time, workers' compensation, interruption of production, and medical expenses, account for 4% of annual global GDP, or US\$2.8 trillion (24,25,26 27).

Numerous studies have been conducted on the economic cost of workplace injuries and diseases. According to Leigh, the national cost of occupational injuries and diseases in the United States is \$250 billion (1.8 percent of GDP). According to Safe Work Australia, the costs of work-related accidents and diseases in Australia in 2005–2006 were AU\$57.5 billion (5.9 percent of GDP) and AU\$60.6 billion (4.8 percent of GDP) in 2008–2009. The European Agency for Safety and Health at Work conducted a Member State Survey on the estimated economic costs, and the following are some of the results (28, 29, 30, and 31).

- Norway accounts for 6.0 percent of GDP (not in the EU report)

- Sweden accounts for 4.0 percent of GDP;

Finland accounts for 3.8 percent of GDP;

Italy accounts for 3.2 percent;

Denmark accounts for 2.7 percent;

New Zealand accounts for 3.4 percent of GDP (financial cost, not in the EU report) (32, 33, and 34)

According to the New Zealand report, only 10% of the financial cost is compensated, and the cost of suffering and premature death was 77% of

total costs, while financial costs were 21% of total costs and compensated costs were 2% of total costs.

Finally, work accidents and fatalities are felt immediately, necessitating good risk management practices to prevent them. However, as the estimates show, the extent of the impact of work-related ill health on the workforce should not be underestimated. To eliminate all negative effects of work on health and support a sustainable working life, a new zero harm threshold must be advocated for and practiced at all levels and throughout the entire working life (35).

3. Evaluation of Occupational Accidents and Diseases in Turkey

Occupational accidents are a major source of concern in Turkey and many other countries. The most serious consequences of occupational accidents are death, injury, or disability. In addition, several other significant work-related accidents result in significant financial losses. There are certain parts of the world where occupational accidents are more common than others. These industries can be classified as Mining, Metal, and Construction based on the number of accidents, permanent injuries, and deaths. In terms of the fight against occupational accidents, the Republic of Turkey Ministry of Labour and Social Security has designated these three sectors as the primary sectors. When data on workplace accidents is analyzed, it is discovered that 46.4% of accidents and 41.1% of deaths in Turkey occurred only in these three parts (36).

The International Labour Organization (ILO) claims that, Turkey has a relatively young population. “The total population in 2014 was 77,695,904, with one in every four people being under the age of 15, and people over 65 accounting for only 7.9 percent.” Overall, 12 percent of people aged 15 and up did not complete primary school, while 10.8 percent graduated from university. Life expectancy at birth is 76.9 years, with cardiovascular diseases (39.78 percent), malignant neoplasms (21.32 percent), and chronic respiratory diseases as the leading causes of death (9.83 percent). The GDP per capita is \$20,188 (PPP) and \$9,680 (PPP) (nominal, end of 2014). The total labor force is nearly 29 million, with a 9.9 percent unemployment rate. One in every four workers is employed in the industrial sector, while around 60% work in the service sector.”

The Ministry of Labour and Social Security is the primary responsible organization in this field, working with other ministries and stakeholders to develop, implement, and enforce legislation. The Directorate General of Occupational Safety and Health and the Labour Inspection Board are the Ministry’s two most important units. In collaboration with other stakeholders, the Directorate General improves occupational safety and health legislation, while Board inspectors conduct inspections for

compliance with occupational safety and health legislation, as well as labor relations and management issues.

“Three-way collaboration is essential in occupational safety and health practice.” There are numerous ways to collaborate with related organizations, the most important of which is the Occupational Safety and Health Council. The Council is made up of 26 members, half of whom are from government and half from non-governmental organizations, and is chaired by the Ministry’s Undersecretary (37).

Occupational accident rates have steadily declined over the last two decades, but the rate for 2013 is nearly three times that of the previous year. The notice system was changed in 2013, and the surge could be the result of that change. Occupational diseases, on the other hand, are extremely rare in Turkey. The rate of occupational diseases decreased from 22.1 to 3.1 per 100,000 workers, which is more than 100 times lower than the global average.

In working life, there are three employee and three civil servant organizations. The first employee organization was established in 1952, with the other two following in 1967 and 1976. These organizations have approximately 1.5 million registered employees. All three civil servants’ organizations were founded in the 1990s, and their membership totals more than 1.5 million people. The most well-known employer organization was founded in 1962. Some employers’ and workers’ organizations have occupational safety and health units that carry out activities with a small number of employees. Every year, the Ministry of Labour and Social Security organizes occupational safety and health week activities, which take the form of national and international conferences.

The Ministry also carried out numerous projects on occupational safety and health in order to raise awareness among a variety of target groups, including professionals and the general public. These projects also helped to improve working conditions. Several projects and scientific meetings in the field of occupational safety and health are also run by employers’ and workers’ organizations, as well as professional organizations. The majority of these projects and scientific meetings were organized in collaboration with international partners such as the ILO, EU, WHO, UNDP, UNICEF, and others.

The vast majority of workplaces are micro enterprises, accounting for 62.7 percent of the total of over 1.6 million workplaces employing 1-3 workers. Only 290 workplaces have 1000 or more employees, while 98 percent have fewer than 50 employees. Almost half of the working group (48.0 percent) is employed under Article 4/1.a of Law No. 5510. Workers’ wages are low in comparison to most European countries; in July 2015, the

monthly minimum wage was 1000.54 TRY. (38).

Turkey continues to face a significant problem, with an annual average of 73937 occupational accidents and 1152 deaths. The country has one of the lowest levels of job safety among European Union countries. Work-related accidents in Turkey have been concentrated in specific areas, as they have been all over the world. Mining, metal, and construction are the industries with the highest number of accidents, permanent incapacities, and fatalities (39).

Considering the fact that the number of insured workers has increased, in recent years, there has been a dramatic decline in the number of accidents. This increase can be attributed to both economic growth and the insurance of previously uninsured employers. Unfortunately, the number of deaths and permanent injuries caused by occupational accidents has recently surpassed the previous seven-year averages. This fact compels us to be more vigilant, particularly in mining and construction areas where such incidents occur more frequently. Increased periodic inspection appears to be a practical and expedient solution (40).

The construction industry is regarded as one of the most dangerous in Turkey, owing to the high number of fatal occupational accidents. With 14 percent of the Turkish workforce engaged in construction, the problem has grown in importance. While the construction sector accounts for 9% of all accidents in Turkey, it also accounts for 28% of all deaths and 18% of all permanent disabilities. This demonstrates that the construction industry has serious issues with job safety.

Another industry with high employment is the metal sector, which employs 9% of the Turkish workforce. In Turkey, the metal sector accounts for up to 27% of all accidents. This industry accounts for 14% of all permanent disability cases and 6% of all fatalities.

While the mining industry employs only 1.3 percent of all workers, it has high rates of general frequency, permanent incapacity, and fatality. The calculated frequency values for this sector are significantly higher than the Turkish average. In this regard, the mining industry appears to be woefully inadequate in terms of job safety (40).

Underreporting leads to a lack of data about current safety issues, which delays preventive actions. Unfortunately, the vast majority of accidents that occur in Turkey are not recorded. Underreporting of accidents appears to be a major issue in Turkey, as it is in the rest of the world. While about 800,000 accidents are recorded per year in Germany, which has a population of 82 million, only 70000 accidents are recorded in Turkey, which has a population of 74 million. As a result, it is undeniable that the real situation in Turkey in terms of occupational accidents, both for Turkey in general and for the Mining, Metal, and Construction sectors, is far worse (36).

3.1. Work Accidents and Occupational Diseases Statistics

Since work accidents and occupational diseases experienced in Turkey are reported to the Social Security Institution (SSI), statistical data are announced annually by this institution. According to the data of SSI for 2020, it has been determined that the total number of work accidents in Turkey is 314,897 and occupational diseases are 908. 1231 of the accidents experienced resulted in death. It has been determined that the number of deaths due to occupational diseases is 5. It has been observed that occupational accidents occur mostly in the age range of 21-25, and death occurs in the age range of 45-51. When the time of occupational accidents is examined, it has been determined that the most frequent occurrences are between 11 and 12 hours (41). According to the 2020 data of the Social Security Institution, statistical data on work accidents and occupational diseases in Turkey are given in the tables below.

Table 1. *Distribution of the Number of Insured Having Work Accident or Exposure to Occupational Illness, 2020*

Number of insured having work accident			Number of insured having occupational illness		
Male	Female	Total	Male	Female	Total
314.897	69.365	384.262	724	184	908

Table 2. *Distribution of Deceased People As a Result of a Workplace Accident or Work - related Illness Within a Year, 2020*

Number of fatal accident at work			Number of fatal occupational illness		
Male	Female	Total	Male	Female	Total
1.197	34	1231	0	0	0

Table 3. *Distribution of Insureds Involved in Workplace Accidents or Exposed to Work - related Illnesses by city and Gender, 2020*

City	Accident at work			Occupational illness		
	Male	Female	Total	Male	Female	Total
Ankara	21.175	4.446	25.621	29	2	31
Bursa	15.757	4.612	20.369	41	26	67
İstanbul	74.457	19.008	93.465	173	83	256
İzmir	25.014	5.932	30.946	34	9	43
Kocaeli	21.587	4.341	25.928	73	19	92
Other city						
total	314.897	69.365	384.262	724	184	908

Table 4. *Persons Who Died as a Result of a Workplace Accident or Occupational Illnesses Within A Year, 2020*

City	Number of fatal accident at work			Number of fatal occupational illness		
	Male	Female	Total	Male	Female	Total
Ankara	101	2	103			
İstanbul	185	3	188	1	0	1
İzmir	91	4	95			
Kocaeli	44	0	44			
Total	1.197	34	1.231	5	0	5

Table 5. *Age Distribution of Insureds Involved in Workplace Accidents or Exposure to Occupational Illness, 2020*

Number of insured having work accident				Number of insured having occupational illness			
Age	Male	Female	Total	Age	Male	Female	Total
21	11.093	21	14.253	38	25	2	27
22	12.295	22	15.714	39	24	5	29
23	12.030	23	15.665	40	27	10	37
24	11.799	24	15.073	41	39	10	49
25	11.937	25	14.806	42	26	5	31

Table 6. *Distribution of the Deceased Persons Due To Work Accident or Occupational Disease Within Year by Age and Gender, 2020*

Age	Number of fatal work accidents			Number of fatal occupational illness		
	Male	Female	Total	Male	Female	Total
45	46	1	47	0	0	0
46	29	3	32	0	0	0
47	39	2	41	0	0	0
48	46	0	46	0	0	0
49	39	0	39	0	0	0
50	43	0	43	0	0	0
51	42	2	44	0	0	0

Table 7. *Distribution of Insured Exposure to Occupational Disease by Diagnostic and Gender, 2020*

Occupational disease	Number of occupational illness		
	Male	Female	Total
Respiratory System Diseases	165	2	167
Musculoskeletal and Connective Tissue Diseases	36	18	54
Ear and Mastoid Protrusion Diseases	33	1	34
Nervous System Diseases	17	9	26
Other	473	154	627
Total	724	184	908

Table 8. *Distribution of the Number of Insured Having Work Accident or Exposure to Occupational Disease by Months and Gender, 2020*

Months	Number of insured having work accident			Number of insured having occupational illness		
	Male	Female	Total	Male	Female	Total
January	26.020	6.924	32.944	34	5	39
February	26.524	7.181	33.705	46	5	51
March	25.251	5.884	31.135	34	8	42
April	14.376	3.434	17.810	36	32	68
May	15.406	2.847	18.253	48	12	60
June	27.737	5.363	33.100	54	15	69

July	30.588	6.334	36.922	57	14	71
August	28.821	6.444	35.265	35	4	39
September	32.295	6.767	39.062	66	9	75
October	31.841	6.877	38.718	43	15	58
November	27.319	5.734	33.053	71	20	91
December	28.719	5.576	34.295	64	30	94
Other						151
Total	314.897	69.365	384.262	724	184	908

Table 9. *Distribution of the Deceased Persons Due to Work Accident or Occupational Disease by Months and Gender, 2020*

Months	Number of fatal accident at work			Number of fatal occupational illness		
	Male	Female	Total	Male	Female	Total
January	72	5	77	0	0	0
February	88	3	91	0	0	0
March	83	5	88	0	0	0
April	77	4	81	1	0	1
May	74	2	76	0	0	0
June	117	0	117	0	0	0
July	130	1	131	0	0	0
August	107	5	112	1	0	1
September	115	1	116	0	0	0
October	116	4	120	0	0	0
November	112	3	115	2	0	2
December	106	1	107	1	0	1
Total	1.197	34	1.231	5	0	5

Table 10. *Distribution of Work Accidents by the Hour-Time of the Accident and Gender, 2020*

Time of the accident	Male	Female	Total
09:00 -09:59	26.180	4.882	31.062
10:00-10:59	29.647	5.881	35.528
11:00-11:59	31.713	6.022	37.735
12:00-12:59	16.736	4.492	21.228

13:00-13:59	20.017	4.694	24.711
14:00-14:59	26.506	5.253	31.759
15:00-15:59	25.570	5.346	30.916
16:00-16:59	22.152	4.393	26.545

Table 11. *Incidence Rate and Weight Rate of Work Accidents, 2020*

Periods in 2020	Number of work accidents	Number of premium days	Incidence rate of occupational injuries		Total number of days lost due to work accident	Total of levels of permanent incapacity in 2020	Cases of fatal occupational injury in 2020	Weight rate of occupational injuries	
			Per 1.000.000 working hours	Per 100 person				Days	Hours
January-April	115.594	1.529.069.259	9,45	2,13					
May-August	123.540	1.351.992.976	11,42	2,57	3.492.824	98.620	1.231	568	0,455
September-December	145.128	1.544.945.706	11,74	2,64					
Total	384.262	4.426.007.941	10,85	2,44					

References

1. ILO (International Labor Organization). “Occupational Injuries Statisticians”, https://www.ilo.org/ilostat-files/Documents/description_INJ_EN.pdf
2. Kim, S.A., Kang, M.G., *Annals of Occupational and Environmental Medicine*, 25:14 2013.
3. ILO: C018 - Workmen’s Compensation (Occupational Diseases) Convention, 1925 (No. [Internet]. 1927. [cited 2013 Mar 24]; Available from: http://www.ilo.org/dyn/normlex/en/f?p=1000:12100:0::NO::P12100_ILO_CODE:C018
4. ILO: C042 - Workmen’s Compensation (Occupational Diseases) Convention (Revised), 1934 (No. 42) [Internet]. 1936. [cited 2013 Mar 22]; Available from: http://www.ilo.org/dyn/normlex/en/f?p=1000:12100:0::NO::P12100_ILO_CODE:C042.
5. ILO: C121 - Employment Injury Benefits Convention, 1964 [Schedule I amended in 1980] (No. 121) [Internet]. 1967. [cited 2013 Mar 22]; Available from: http://www.ilo.org/dyn/normlex/en/f?p=NORMLEX-PUB:12100::NO:12100:P12100_ILO_CODE:C121:NO
6. Gawkrödger D.J, *Occupational skin cancers*, *Occup. Med. Oxf. Engl* 2004, 54 (7):458–463.
7. ILO: International Labour Office Governing Body Committee on Sectoral and Technical Meetings and Related Issues, for decision: Second Item on the Agenda Effect to be given to the recommendations of sectoral and technical meetings Meeting of Experts on the Revision of the List of Occupational Diseases (Recommendation No. 194) (Geneva, 27–30 October 2009) [Internet]. 2010. [cited 2013 Mar 29]; Available from: <http://www.ilo.org/wcmsp5/groups/public/>.
8. Kim E-A: Type, Criteria, and Contents List of the Occupational Disease of some ILO member states. Incheon, Korea: Occupational Safety and Health Research Institute; 2012.
9. Elgstrand, K., and Petersson, N: “OSH for Development.” Stockholm, Sweden, Royal Institute of Technology, Available at [https://osha.europa.eu/en/press/articles/review Osh for Development 2010](https://osha.europa.eu/en/press/articles/review%20Osh%20for%20Development%202010).
10. Takala, J., Hämmäläinen, P., Saarela, K.L., Yun, L.Y., Manickam, K., Jin, T.W., Heng, P., Tjong, C., Kheng, L.G., Lim S., Lin, G.S., *Global Estimates of the Burden of Injury and Illness at Work in 2012*, *Journal of Occupational and Environmental Hygiene*, 11:5, 326-337, (2014) DOI: 10.1080/15459624.2013.863131
11. Hamalainen, P., Takala, J. Saarela, K.L.: *Global estimates of occupational accidents*. *Safety Sci.* 44:137–156 (2006).

12. Lauterbach A: Occupational Diseases How are they covered under workers' compensation systems? [Internet], München: Münchener Rückversicherungs-Gesellschaft. 2002. [cited 2013 Apr 22]. Available from: <http://www.munichre.com>.
13. Hamalainen, P., Takala, J. Saarela, K.L.: Global estimates of fatal work-related diseases. *Am. J. Ind. Med.* 50(1):28–41(2007).
14. Takala, J., M. Urrutia, Hamalainen, P., and Saarela, K.L.: The global and European work environment-Numbers, trends, and strategies. *Scan. J. Work Environ. Health* (7):15-23 (2009).
15. Takala, J.: “ILO Introductory Report: Decent Work-Safework”. Available at <http://www.ilo.org/public/english/region/eurpro/moscow/areas/safety/docs/worldcongressreporteng.pdf> 2014.
16. Nurminen, M., and Karjalainen, A.: Epidemiologic estimate of the proportion of fatalities related to occupational factors in Finland. *Scan. J. Work Environ. Health* 27(3):161–213 (2001).
17. Fritschi, L., and Driscoll T.: Cancer due to occupation in Australia. *Aust. N. Z. J. Pub. Health* 30(3):213-219 (2006).
18. Mannetje, A., and Pearce N.: Quantitative estimates of work-related death, disease and injury in New Zealand. *Scand. J. Work Environ. Health* 31(4):266-276 (2005).
19. Orenstein, M.R., T. Dall, P. Curley, J. Chen, A. L. Tamburrini, and J. Petersen: The Economic Burden of Occupational Cancers in Alberta. Calgary: Alberta Health Services. Available at <http://www.albertahealthservices.ca/poph/hi-poph-surv-phidseconomic-burden-occup-cancer-2010.pdf>.
20. Driscoll, T., J. Takala, K. Steenland, Corvalan C., and Fingerhut M.: Review of estimates of the global burden of injury and illness due to occupational exposures. *Am. J. Ind. Med.* 48:491–502 (2005).
21. Steenland, K., Burnett, C., Lalich, N., Ward, E., Vard., and Hurrell J.: Dying for work: The magnitude of US mortality from selected causes of death associated with occupation. *Am. J. Ind. Med.* 43(5):461- 482 (2003).
22. Rushton, L., S.J. Hutchings, L. Fortunato, et al.: Occupational cancer burden in Great Britain. *Br. J. Can.* 107:S3–S7 (2012).
23. McCormack, V., Peto, J., Byrnes, G., Straif, K., and Boffetta, P.: Estimating the asbestos-related lung cancer burden from mesothelioma mortality. *Br. J. Can.* 106(3):575–584 (2012).
24. Takala, J.: Asbestos-Chrysotile, Trends and Numbers.” EFBWW Conference, European Parliament, Brussels, June 30, 2011.
25. World Health Organization (WHO): “WHO Mortality Database: World Health Organization Statistical Information System (WHOSIS).” Avail-

- able at <http://www.who.int/healthinfo/morttables/en/index.html> (accessed Dec. 10, 2006).
26. Nishikawa, K., Takahashi, K., Karjalainen, A., et. al: Recent mortality from pleural mesothelioma, historical patterns of asbestos use, and adoption of bans: A global assessment. *Environ. Health Perspect.* 116(12):1675-1680 (2008).
 27. Morrell, S., Kerr, C., Driscoll, T., Salkeld, G., and Corbett S.: Best estimate of the magnitude of mortality due to occupational exposure to hazardous substances. *Occupational and Environmental Medicine* 55:634-641 (1998).
 28. Leigh, J. P.: Economic burden of occupational injury and illness in the United States. *Milbank Quarterly* 89(4):728–772 (2011).
 29. Australian Safety and Compensation Council: “The Cost of Work-related Injury and Illness for Australian Employers, Workers and the Community.” Available at [http://www.safeworkaustralia.gov.au/sites/swa/about/publications/pages/sr200903injuryandillness2005 to2006](http://www.safeworkaustralia.gov.au/sites/swa/about/publications/pages/sr200903injuryandillness2005%20to2006).
 30. Australian Safety and Compensation Council: “The Costs of Work related Injury and Illness for Australian Employers, Workers and the Community.” Available at <http://www.safeworkaustralia.gov.au/sites/swa/statistics/cost-injury-illness/pages/cost-injury-illness>.
 31. European Agency for Safety and Health at Work: “Economic Impact of Occupational Safety and Health in the Member States of the European Union.” Available at <https://osha.europa.eu/en/publications/reports/302>.
 32. Rognstad, K.: Costs of occupational accidents and diseases in Norway. *Eur. J. Op. Res.* 75(3):553–566 (1994).
 33. Takala, J.: International agency efforts to protect workers and the environment. *Int. J. Occup. Environ. Health* 5(1):30–37 (1999).
 34. Pezzulo, L., and Crook A.: “The Economic and Social Costs of Occupational Disease and Injury in New Zealand.” NOHSAC Technical Report 4, 2006. Available at <http://www.dol.govt.nz/publications/nohsac/pdfs/technical-report-04.pdf>
 35. Jukka, T., Nenonen, N., Hämäläinen, P. Saarela, K.L.: Global Estimates of Occupational Accidents and Work-related Illnesses, A Poster and Infographics. Conference: XX ILO - ISSA World Congress on Safety and Health at Work, Vol.20, (2014). DOI:10.13140/2.1.1071.7443.
 36. Hüseyin Ceylan et al. “Analysis of Occupational Accidents According to The Sectors in Turkey” *Gazi University Journal of Science.GU J Sci* 25(4):909-918 (2012)
 37. Bilir, N., Occupational safety and health profile, International Labour Organization, ILO Office for Turkey.- Ankara: ILO, 2016 ISBN:

- 9789221310624; 9789221310631, International Labour Organization, ILO Office for Turkey, ILO (2016).
38. Demiral, Y., Ergor, A., Baydur H. “Country Report on Occupational Safety and Health, ILO (2015).
 39. Bilir, N. and Bilim, A., Occupational health and safety outlook in Turkey. (2015).
 40. Celik, K., et al. “Occupational injury patterns of Turkey.” World journal of emergency surgery : WJES, Vol. 8,1 57. 28 Dec. 2013, doi:10.1186/1749-7922-8-57
 41. <http://www.sgk.gov.tr/wps/portal/sgk/tr/kurumsal/istatistik>

Chapter 7

OCCUPATIONAL SAFETY CULTURE AND LEGISLATION COURSE IN TURKEY AND THE WORLD OF OSH STUDIES BEFORE AND AFTER THE INDUSTRIAL REVOLUTION

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1. Introduction

The goal of this research is to emphasize the significant changes in occupational health and safety prior to and during the Industrial Revolution. The information was acquired through reading various articles and books on the internet. “Occupational health is the promotion and maintenance of the highest level of physical, mental, and social well-being for workers in all occupations by preventing illness, managing risks, and adapting work to people and people to their employment.” (World Health Organization (WHO) and International Labor Organization (ILO)) (1). Throughout its history, this field has witnessed the rise and fall of numerous approaches that are worth noting. According to the most recent International Labor Organization (ILO) estimates, 2.78 million workers die each year as a result of occupational accidents and diseases, with an additional 374 million workers suffering from non-fatal occupational accidents. It is estimated that lost work days account for nearly 4% of the world’s Gross Domestic Product (GDP), with some countries accounting for 6% or more (2).

1.1. Definition of occupational health and safety

Occupational health and safety (OSH), according to Tetrick and Piero, demonstrates the impact of the work environment on employees and workers, groups and work units within organizations, and organizations as a whole (3). Occupational health is defined as evaluating and managing the effects of work on a person’s health, as well as the effects of health on a person’s ability to work. OSH is a critical component of employees’ social protection against negative aspects of their jobs, such as work accidents and occupational diseases. It improves job satisfaction and strengthens labor market functioning.

Poor occupational safety and health standards, industrial injuries, fatalities, and occupational diseases, on the other hand, place a significant burden on the national economy through the payment of social compensation, hospital costs for requalifying and substituting workers, and loss of productivity.

OSH is a broad field that focuses on the safety, health, and well-being of people who are involved in some aspect of work or employment. Simply put, as a regulation, it aims to avoid work accidents, occupational diseases, and other negative aspects of work by identifying the risks that cause them and implementing appropriate preventive and protective OSH control measures.

As a result, the new approach to OSH encompasses more than just the precise sense of safety and health, encompassing workers’ physical, mental, and social health, as well as working relations, work organization,

employment rules, and work culture (4). Furthermore, according to the information provided in Tetric and Piero's work, workplace issues are entirely related to employee health and safety. These factors may be physical characteristics of the work environment, such as working conditions and activities such as repetitive movements required by individuals to do their jobs; however, there are also several psychosocial features that can result in either a lack of safety and ill-health, or actual safety and good health. These psychosocial factors include issues such as safety climate, sexual harassment climate, interpersonal relationships, coworker support, and leadership (3).

2. Occupational Health and Safety History

2.1. The Forefathers of Medicine

The first data on industrial hygiene can be found in 1556, when Agricola described the toxicity of certain minerals in his *De Re Metallica* (5). The first comprehensive book on occupational health, "The diseases of workmen" (6), published in 1700, provided significant support for the study of the relationship between work and health-related problems. This book, written by the Italian physician Bernardino Ramazzini, explained the occupational diseases affecting the majority of workers at the time.

2.2. The Industrial Revolution

Prior to the start of the Industrial Revolution in 1760, it was very common to make a living through agriculture or by crafting and selling products from one's own home. With new advances in machinery and industrialized processes, Britain, as well as parts of Europe and the United States, began the transition to a society based on mass production and the factory system. As a result, many people moved to cities in search of work, where there were more job opportunities in the new factories. Because there were so many people looking for work, the demand for cheap labor increased, resulting in low pay, dangerous factory conditions, and an increase in child labor. The work was mostly dangerous for children, who worked from the age of four and sometimes for more than 12 hours a day. Because of a lack of health and safety, many children developed occupational diseases such as lung cancer and died before reaching the age of 25. (7).

When Ulrich Ellenborg published his work on the toxicity of carbon monoxide, mercury, lead, and nitric acid in 1743, and Percival Potts (1774) identified the first form of cancer (scrotal cancer) in chimney sweeps, industrial hygiene took another major step forward (8). Furthermore, at the beginning of the nineteenth century, the scientific characteristics of occupational medicine, as well as the use of practical measures to protect

workers' health, were observed.

2.3. Moral and Health Act

In 1802, the first labor supervisors were chosen in the United Kingdom, as provided for in the “Moral and Health Act,” also known as “The Factory Act,” which was applied to all textile mills and factories employing three or more apprentices or twenty employees and required factories to:

1. Have adequate windows and openings for ventilation
2. Be cleaned at least twice a year with quicklime and water.
3. Keep apprentices' working hours to no more than 12 hours per day (excluding time taken for breaks)
4. Ban apprentices from working night shifts between 9 p.m. and 6 a.m.
5. Provide each apprentice with appropriate clothing and sleeping quarters.
6. Teach apprentices reading, writing, arithmetic, and Christian principles.

Despite the fact that it was limited to a small number of workers and had limited implementation, the Factory Act is widely regarded as the beginning of health and safety regulations (9).

2.4. The establishment of factory inspectors

The “Althorp” Law of 1833 resulted in the establishment of an efficient labor inspection service. Inspectors were granted access to the mills and were granted permission to question workers. Their primary responsibility was to prevent child labor injury and overwork, but they were also able to create new regulations and laws to ensure the Factories Act was properly enforced. In 1824, the first workers' associations and organizations were formed with the goal of improving working conditions, particularly the reduction of working hours and the protection of female and child labor (10).

Furthermore, in 1832, Charles Turner Thackrah's book about industrial diseases, which was about occupational medicine as a discipline, was published, and as a result of this work, Thackrah became known as the “Father of Occupational Medicine” (11). In an attempt to improve working conditions, “The Factory Act” was validated in 1833, resulting in the hiring of the first factory inspectors, which served as the foundation for several subsequent revisions (12). Sir Thomas Marison Legge was appointed as the first factory inspector in England in 1898, and in 1912 he published a book on lead poisoning and lead absorption (13).

2.5. Major Disasters Prior to 1919

Even though the First World War hampered early attempts to achieve international occupational safety and health standards, it also drew attention to OSH issues. Industrial support for various countries' war efforts resulted in a common increase in the production of war-related materials and the risks associated with them. Increased exposure to toxic and explosive materials resulted in more accurate interpretations of the health effects and the need for more advanced safety measures. Finally, the Treaty of Versailles provided impetus to additional international efforts to secure long-term preparations for world peace, social justice, and prosperity through the establishment of the League of Nations and the International Labour Organization (14).

2.6. The twentieth century

In addition, the first international scientific and professional association, "Commission Internationale Permanente pour l'Étude des Maladies du Travail," was founded in 1906 in Milan, and it is still the largest non-governmental organization in the field on a global scale (International Commission on Occupational Health and Safety, ICOH). Furthermore, with the establishment of the first Occupational Health Clinic in Milan (Clinica del Lavoro) in 1908, Occupational Medicine advanced modernization, the model of which has been adopted by various countries when establishing their own institutions (15).

The next milestone in the field was the establishment of the International Labour Organization (ILO) in 1919, which was comprised of representatives from government, employers, and workers; the ILO implemented instruments setting OSH standards, such as the Anthrax Prevention Recommendation, 1919 (No. 3); Lead Poisoning (Women and Children) Recommendation, 1919 (No. 4); and White Phosphorus Recommendation, 1919. (No. 6). In fact, three of the Conference's six endorsements were on occupational safety and health. The Conference also adopted principles addressing industrial work hours, maternity protection, and night work for women, as well as minimum age and night work for young people. The ILO's tripartite structure, which includes representatives from the governing administrations of its member countries as well as equal representation from employers' and workers' organizations, was and continues to be an exclusive feature of the organization as an international organization.

Since the organization's inception, international labor standards have emerged as a result of negotiations between these components and have been adopted by vote of the ILC. According to the logic that dominated regulatory policies from the Industrial Revolution to the second half of

the twentieth century, the ILO's early OSH instruments dealt with single issues, such as exposure to hazardous materials or the safeguarding of dangerous machinery, or sectors of industrial activity, such as mining, the maritime industry, construction, and manufacturing. They specified regulatory rules in each context and focused on the role of governments in protecting workers from hazards. They primarily aimed to address harsh occupational safety and health issues affecting a large number of workers, while also focusing on specific types of workers and women and children. (16).

The Association of Industrial Medical Officers, later known as the Society of Occupational Medicine, was founded in 1935. (17). Furthermore, in 1951, The Dale Report proposed the consolidation of industrial services into a national occupational health service (18). Later, in 1953, the British Occupational Hygiene Society was established (19). And Donald Hunter published 'The Diseases of Occupations' in 1955. (20).

The European Union has played a significant role in the development of occupational health and safety, and it has always established fundamental rules to protect workers' health and safety: in fact, since the Treaty of Rome, which established the European Economic Community (1957), occupational health and safety issues have been considered major areas of action for the European Community (21).

The publication of the Robens Committee on Health and Safety report in 1972 resulted in the passage of the Health and Safety at Work Act in 1974. (22). The UK's entry into the European Economic Community in 1973 was the next significant step, as it required the UK to apply European directives on health and safety, as well as discrimination (23). Following that, in 1975, the European Foundation for the Improvement of Living and Working Conditions (Eurofound) was established with the goal of providing information, guidance, and knowledge on living and working conditions to key actors in the arena of EU social policy (24). The formation of the Faculty of Occupational Medicine within the Royal College of Physicians in 1978 was regarded as a significant step (25), and the Control of Substances Hazardous to Health Regulations (COSHH) became operational in 1988. (26).

When the Framework Directive (89/391/EEC) was published, the first public and comprehensive legislative framework on OHS was formed in 1989(27), despite the fact that it is sometimes considered too challenging and over detailed, since then the EU Directives have strongly insisted on the continuation and development of the social aspects in the world of work, and a dynamic process of reconsidering and implementing OHS matters has begun, with a strong impact on Services or Following that, in

1995, the European Agency for Safety and Health at Work (EU-OSHA) was established with the goal of improving working conditions in the EU, with a focus on raising awareness, disseminating best practices, and evaluating scientific research and statistics to anticipate potential hazards (28).

2.7. The Twenty-First Century

In 2000, the Health and Safety Commission launched ‘Securing Health Together,’ a 10-year occupational health plan. The Health and Safety Commission is a UK government agency in charge of encouraging, regulating, and enforcing workplace health, safety, and welfare, as well as conducting research into occupational dangers in the United Kingdom. (29), in addition, the publication of Dame Carol Black’s report ‘Working for a Healthier Tomorrow’ in 2008 was another significant step toward achieving OHS. Dame Carol emphasized a Swiss study that discovered employees working under managers with no health problems were healthier than those working under managers with mental and physical health problems (30).

SEQOHS, which stands for ‘Safe, Effective, Quality Occupational Health Service,’ was introduced two years later in 2010, as a set of standards and a voluntary qualification scheme for occupational health services in the UK and beyond. It also aimed to facilitate raising the overall standard of care provided by occupational health services, thus helping to make a meaningful difference to the health of people of working age (31) Finally, in 2011.

3. Turkey’s Occupational Health and Safety

Until the Ottoman Empire’s Industrial Revolution, industries and trades concerned with fine arts and crafts had advanced significantly. Depending on the guild’s organization, craftsmen and artisans carried out the activity. The first approaches to occupational health and safety (OHS) in Turkey, as in the rest of the world, emerged at the start of industrialization. The Republican Era saw significant advancements in the recognition of worker protection and labor rights. A series of decisions were made at the first Economic Congress convened after the declaration of the Republic in 1923 to protect workers (32).

The Law of Obligations was enacted in 1926. This law is very important in terms of labor law, because it includes regulations between the worker and the employer in the debt the relationship established as a general law regulating the relations between debt service contracts. The Law on General Hygiene Protection was passed in 1930. (33). Because the purpose of this law was to bring a variety of preventive public health measures,

rather than to make arrangements for OHS, it had an indirect quality in terms of OHS. In 1936, the first labor law was enacted. OHS bylaws and regulations were developed in order to ensure the implementation of the 1936 Labour Law, which was then put into effect. In 1941, the first job security bylaws were enacted. Rules concerning occupational health and safety were developed and implemented in order to allow the application of the 1936-dated Occupation Law.

In 1941, the first Occupation Place Safety Rule was enacted. This was followed by laws governing Heavy and Dangerous Works (34).

Workers Insurance Foundation was established by law no. 4292 in 1945. Workers and employers were granted the right to form a syndicate in 1947. By 1967, the Labour Law, which went into effect in 1936, had proven ineffective in dealing with social and economic developments. As a result, Labour Law No. 1931 was adopted in its place. Following the 1982 Constitutional Process, remarkable developments in the field of OHS have been carried out in accordance with the EU accession process. Labour Law No. 4857, which replaced Labour Law No. 1475, which had been in effect since 1971, brought significant changes to business relationships when it went into effect on June 10, 2003. (36). The new law aimed to address the difficulties encountered in practice and was drafted in accordance with EU and ILO standards. In the area of occupational safety and health, it introduced more detailed provisions that are more protective than those in Labour Law No. 1475.

3.1. Turkey's General Occupational Health and Safety Laws

- The Occupational Health and Safety Regulation was the first to ensure EU *acquis* compliance. It was created by translating Council Directive 391/EEC one-by-one in order to improve safeguards for workers' health and safety at work (OG, 09.12.2003:25311).

- Working Hours Regulations Under Labour Law: It was set up with the intention of establishing working hours principles. It went into effect on April 6, 2004. (OG, 06.04.2004:25425).

- Regulation of Working Hours that cannot be Divided into Weekly Workdays: It is designed to regulate procedures and principles that will be applied to periods of study and work periods about some jobs that have no possibility in terms of qualifications of time of job by dividing working days of a week, such as transportation services on highways, railways, and moving vehicles in sea, lakes, and rivers, and transportation services that are not included in the Maritime Labo. (OG, 6 April 2004:25425)

- Regulation regarding jobs that require 7.5 hours or less than 7.5 hours of work per day in terms of health rules: It is set up to regulate

the maximum working time for workers performing specific tasks in accordance with health regulations. It went into effect on April 5, 2004. (OG,05.04.2004:25434).

- Annual Paid-Permits Regulations: Its purpose is to establish the procedures and principles for annual paid-permits to be issued to employees by employers. It went into effect on March 3, 2004. (OG,03.03.2004:25391).

- The Regulation of Staff Occupational Health and Safety Training Procedures and Principles: It is intended to determine the procedures and principles of OHS training provided by employers to employees in establishments. (OG,01.09.1971:13943.).

- Regulation on the Certificate of Management: Its purpose is to establish the procedures and principles governing the issuance of the certificate of management. (OG:27422, 04.12.2009.)

- Regulations on Stopping Action in Workplaces and Closing of Workplaces: It governs decisions on issues such as whether or not to prohibit the use of machines and engines that are hazardous to workers in the workplaces, and whether or not to allow the running of workplaces to resume; the reopening of businesses after they have been closed; and the precautions that should be taken in emergency situations until the workplace is closed (OG, 05.03.2004:25393.)

- It is adopted in order to specify the provisions such as which tasks are accepted as heavy and dangerous jobs and at what kind of heavy and dangerous works for women and young workers between the ages of 16 and 18. (OG, 16.06.2004:25494.)

References

1. ILO. 1950: Report of the Technical Assistance Committee, Governing Body, Minutes of the Governing Body, 110th Session, Mysore, (Geneva), pp. 284-290
2. Takala, J.; Hämäläinen, P.; Nenonen, N.; Takahashi, K.; Odgerel, C.; Rantanen, J. 2017. "Comparative Analysis of the Burden of Injury and Illness at Work in Selected Countries and Regions" in *Central European Journal of Occupational and Environmental Medicine*, 23(1-2):6-31.
3. "Occupational Safety and Health", Lois E. Tetrick and José María Peiró, *The Oxford Handbook of Organizational Psychology*, Volume 2.
4. ILO. 2001: Guidelines on occupational safety and health management systems, ILO-OSH. Second Edition.
5. Agricola G (1556) *De re metallica*, Book 12. English translation 1912, *Mining Magazine*, London.
6. Ramazzini B (1700) *De Morbis Artificum Diatriba*. In: *Patavino Archi-Lyceo Practicae Medicinae Ordinariae Publici Professoris*. Mutinae, Typis Antonii Capponi (in Latin).
7. Feinstein, Charles (September 1998). "Pessimism Perpetuated: Real Wages and the Standard of Living in Britain during and after the Industrial Revolution". *Journal of Economic History*. 58 (3): 625–58. Doi:10.1017/s0022050700021100.
8. Herbert K, Abrams G (2001) A short history of occupational health. *J Public Health Pol* 22, 34-80
9. adad Baldasseroni A, Carnevale F, Iavicoli S, Tomassini L (2009) Alle origini della tutela della salute dei lavoratori in Italia. *Nascita e primi sviluppi dell'Ispettorato del Lavoro (1904–1939)*, ISPESL, 11-326, Rome.
10. Charles Turner Thackrah, 1795–1833, 'The Father of Occupational Medicine', *Occupational Medicine*, Volume 67, Issue 4, June 2017, Pages 251–253.
11. *The Journal of Economic History*, Volume 40, Issue 4, Child Labor and the Factory Acts, December 1980, pp. 739 – 755
12. International Labour Office. 2019. Safety and health of the future of work; Building on 100 years of experience. Information on ILO publications and digital products can be found at: www.ilo.org/publns.
13. N., A. Sir Thomas Legge, C.B.E. *Nature* 129, 821–822 (1932), Issue Date 04 June 1932.
14. Hämäläinen R.M (2008) The Europeanisation of occupational health services: a study of the impact of EU policies. *People and Work Research Reports* 82. Finnish Institute of Occupational Health, Helsinki.

15. ILO. 2019: History of the ILO. Retrieved at <https://www.ilo.org/global/about-the-ilo/history/lang--en/index.htm>
16. Fifty Years of Medicine in the Workplace: The Contribution of the Society of Occupational Medicine to Occupational Health Practice 1935–1985, J. T. Carter, *Occupational Medicine*, Volume 35, Issue Jubilee_Issue, June 1985, Pages 4–22.
17. A.L. Leigh Silver, The Role of the Industrial Medical Officer in the Research and Development Sections of Industry, *Occupational Medicine*, Volume 2, Issue 3, October 1952, Pages 115–118, <https://doi.org/10.1093/occmmed/2.3.115>
18. The Dale Report, *Occupational Medicine*, Volume 1, Issue 1, April 1951, Pages 6–7.
19. British Occupational Hygiene Society. *Nature* 172, 568 (1953).
20. Donald Hunter(2018) The Diseases of Occupations: Occupational Medicine, Volume 68, Issue 3, April 2018, Pages 218–219
21. Hämäläinen RM (2008) The Europeanisation of occupational health services: a study of the impact of EU policies. People and Work Research Reports 82. Finnish Institute of Occupational Health, Helsinki.
22. Dave Bennett (2015) Health and Safety After the Robens Report of 1972; First Published March 16, 2015
23. Schmidt, S. (1972). United Kingdom Entry into the European Economic Community: Issues and Implications. *Illinois Agricultural Economics*, 12(2), 1-11. doi:10.2307/1349052
24. EUROSTAT (2010) Health and safety at work in Europe (1999–2007): a statistical portrait. EUROSTAT Statistical books. Publications Office of the European Union, Luxembourg.
25. Faculty of Occupational Medicine, *The Lancet*, Volume 311, Issue 8073, 1978, Pages 1081-1082, ISSN 0140-6736, [https://doi.org/10.1016/S0140-6736\(78\)90923](https://doi.org/10.1016/S0140-6736(78)90923)
(<http://www.sciencedirect.com/science/article/pii/S0140673678909236>)
26. Garrod, A., Evans, P. & Davy, C. Risk management measures for chemicals: the “COSHH essentials” approach. *J Expo Sci Environ Epidemiol* 17, S48–S54 (2007). <https://doi.org/10.1038/sj.jes.7500585>
27. Benjamin O. ALLI. (2008) Fundamental Principles of Occupational Health and Safety. ILO Cataloguing in Publication Data: ISBN 978-92-2-120454-1
28. EUROSTAT (2010) Health and safety at work in Europe(1999–2007): a statistical portrait. EUROSTAT Statistical books. Publications Office of the European Union, Luxembourg.

29. Gibby, Elizabeth. (2001). Occupational health in Great Britain: Securing Health Together. *British Journal of Therapy and Rehabilitation*. 8. 52-55. 10.12968/bjtr.2001.8.2.13728.
30. Hulshof, Carel. (2009). Working for a Healthier Tomorrow. *Occupational and environmental medicine*. 66. 1-2. 10.1136/oem.2008.040899.
31. “Occupational Health Service Standards for Accreditation”. London. Faculty of Occupational Medicine. 2015 <http://www.fom.ac.uk/wp-content/uploads/SEQOHS-standards-Apr-15.pdf>
32. Talas, C., (1992). Turkey’s Expositonal Social Polictics History, Bilgi Publication İstanbul.
33. Makal, A., (1999). Labour Relations in Turkey During Single-Party Period, Imge bookshop, İstanbul.
34. Arıcı, K., (1999). “Health of Worker and Workplace Safety Lectures”, Ankara.
35. Çilengiroğlu, O., (2002). “Occupational Health and Safety in Turkey during Negotiation Period with EU ”, Unpublished Post Graduate Thesis, İzmir, Dokuz Eylül University, Institue of Social Sciences

Official Gazette (OG) (<http://www.resmi-gazete.org/04.4.2011>)

(OG, 09.12.2003:25311)

(OG, 05.04.2004:25434)

(OG, 03.03.2004:25391)

(OG, 01.09.1971:13943)

(OG, 04.12.2009:27422)

(OG, 05.03.2004:25393)

(OG, 16.06.2004:25494)