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Tax Benefits for Technoparks: The Perception of Selected Companies in Zafer Technopark Joint Stock Company

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Teknoparklara Sağlanan Vergisel Avantajlar: Zafer Teknopark Anonim Şirketindeki Seçilmiş Firmaların Algısı

Abstract

The tax benefits provided to technoparks and the fieldwork conducted by Zafer Technopark Joint Stock Company were investigated in this study. The field study interviewed academicians, businesses, and management companies operating in Zafer Technopark Joint Stock Company to determine their perceptions of tax benefits. The company owners were asked 20 questions in the study, including demographic questions. Among the interviewed participants, three company owners were interviewed in depth. According to the research's findings, it has been found that half of them have tax benefits for starting a business in a technopark, and they are aware of the majority of the tax benefits offered to technoparks. It has been determined that more than knowing about tax benefits is needed for them to receive enough incentives.

Keywords : Tax Benefits, Technoparks, Incentives, Afyonkarahisar.

JEL Classification Codes : H20, K34, O32.

Öz

Bu çalışmada teknoparklara sağlanan vergisel avantajlara ve Zafer Teknopark A.Ş.'de yapılan alan çalışmasına yer verilmiştir. Alan çalışmasında Zafer Teknopark A.Ş.'de faaliyet gösteren akademisyenler, işletmeler ve yönetici şirket ile mülakat yapılmış ve vergisel avantajlar hakkındaki algıları ölçülmesi amaçlanmıştır. Araştırmada firma sahiplerine demografik sorular dahil olmak üzere toplam 20 soru sorulmuştur. Mülakat yapılan katılımcılardan 3 firma sahibi ile derinlemesine bir şekilde mülakat yapılabilmiştir. Araştırmadan elde edilen sonuçlara göre; yarısının teknoparkta firma açmasında vergisel avantajların etkili olduğu ve teknoparklara sağlanan vergisel avantajların çoğu hakkında bilgi sahibi oldukları saptanmıştır. Vergisel avantajlar hakkında bilgi sahibi olmalarının yeterli düzeyde teşviklerden faydalanmaları için yeterli olmadığı sonucuna ulaşılmıştır.

Anahtar Sözcükler : Vergi Avantajları, Teknopark, Vergi, Afyonkarahisar.

1. Introduction

Human beings are born, live, and die. They have many needs in this process known as life to survive. Need denotes necessity and everything that must be accomplished. The idea of need is defined in economics as "everything that offers joy and pleasure to people when they are satisfied, and everything that causes pain and suffering if they are not pleased" (Sarı, 2019). In some ways, human needs are limitless. Since the beginning of time, humanity has been engaged in research and development efforts to suit its demands. These research and development activities are now recognised as an established concept known as R&D studies. Technology and technological breakthroughs are at the forefront of R&D investigations. The most basic definition of technology is the knowledge and experience required to produce a good or service. The broad definition of technology is techniques that encompass solutions to challenges encountered in all business functions. When these ideas are combined, the definition of technology becomes: "all of the technical and managerial processes and information from the planning of the production of goods or services through the reality of their distribution". This definition demonstrates that technology encompasses both production and post-production information.

Technology encompasses all tools, equipment, methods, techniques, and applications relevant to diverse industries. Furthermore, technology is a design and implementation process that begins with human requirements. According to the dictionary, technology is the methodical application of knowledge to industrial operations. In addition to its dictionary definition, technology broadly defines all of the information and abilities that can be employed to generate an effective and efficient result of the industrial process, which includes research, development, production, marketing, sales, and after-sales support.

Economists define technology as a tool that improves national welfare and a measurement technique that bridges the gap between resource inputs and production outputs. As a notion, technology is the creation of functional structures required to rule nature by applying acquired abilities to work. Furthermore, technology is the transfer of science into an area of applied art, such as manufacturing, service, and transportation. In other terms, technology is described as a rational discipline devised by man to rule nature through the application of knowledge (Ekodialog).

Today, as in every other field, the transition from the industrial to the information societies, as well as the rapid development in globalisation, has resulted in international competition in the creation of industry, technology, and technology-based information. This competition, on the other hand, has necessitated the establishment of new formations in terms of knowledge production as well as the development of creative initiatives and models to adapt to the latest production structure by transforming knowledge into technology (Çiçek, 2021: 188). To compete in the global market by utilising cutting-edge technologies fit for the countries' industrial structures, they have started generating new technologies and tactics that may answer contemporary necessities. Science and money came together to produce cutting-edge innovations, speed up research and development efforts, and

contribute to economic growth through the ecosystem-wide generation of knowledge (Avcı, 2021: 219). Most countries with limited resources have tried to increase additional value while using fewer of their limited resources (Koç, 2018: 478). These led to the creation of technology development zones and technoparks. Technoparks were crucial in the innovation process and contributed significantly to knowledge creation and transfer (Avcı et al., 2019: 517).

The first technopark was founded in 1950 at Stanford University in the United States, today known as "Silicon Valley", according to an analysis of the growth of technoparks worldwide (Civan & Büyükkonuklu, 2009: 323). Today, Silicon Valley is home to numerous multinational corporations, including Intel, Microsoft, Yahoo, Apple, and Google (Demirli, 2014: 98). From the East to the West of the world; several nations have developed technoparks through their resources and ability to aid in national development.

Technoparks have grown in significance as research and development activities have increased. As we move into the information age, technology-based entrepreneurial activities have an increasing impact on society as innovation and technology advance at an ever-increasing rate (Cansz, 2017: 12). In this environment, these global changes impacted Turkey, and in 1991, Middle East Technical University hosted the first technopark events.

There have been 92 technoparks constructed since 1991 (December - 2021). Zafer Technopark Joint Stock Company is one of these technoparks and the focus of the investigation. The Afyon Uşak Zafer Technopark, Turkey's first technopark created in collaboration with two distinct universities, Afyon Kocatepe University and Uşak University, located for the first time in two different regions, went into operation in 2016. The Zafer Technopark region is an ecosystem that spans the two provinces of Afyonkarahisar and Uşak. Two technopark centres are currently operational in Afyonkarahisar and Uşak. There are 44 firms across the two centres, including 29 businesses run by entrepreneurs, 14 by academics, and one by students.

The tax benefits given to technoparks stimulate and support the activities conducted there, such as the discovery of new knowledge, the creation of inventions, the design of high-added value to the nation's economy, and the incorporation of technology-based knowledge into the industry (Dursun & Akan 2018: 43). In Turkey, the government supports technoparks and offers tax benefits to foster economic and technological advancements as well as external benefits. To assess their perceptions of tax benefits, interviews were conducted with academics, businesses, and the Zafer Teknopark Joint Stock Company's managing company. In this context, a face-to-face interviewing technique was used with firms in the Zafer Technopark ecosystem to gauge how they felt about the tax benefits offered to technoparks for the study. A semi-structured interview form with 20 questions, one of the tools used in this method of data collecting, was preferred in the study when using the qualitative research approach.

2. Conceptual Background

2.1. Technopark Concept and Definition

The words "technology park" and "park" were combined to create the notion of technopark (Bayzin & Şengür, 2019: 300). Technoparks founded in many nations throughout the world express themselves using various concepts. They are the notions of "Research Park", "Science Park", "Technopol", "Technology Center", "Technopolis", "Technological Innovation Center", "Advanced Technology Center", and "Business Incubation Center" (Bilgili, 2009: 357). When we consider the broad definition of "technology park", "technopoly", "research park", and "science park", we can conclude that specialists lead organisations that support an innovation culture and support the competitiveness of businesses (Link, 2019: 26).

Technoparks, on the other hand, are established near developed universities with the resources of the industries and with the participation of various individuals, institutions, and organisations for their economic and social goals, thanks to the technology and synergy created by universities and industries jointly, with the education, knowledge, experience, experiences, and research of universities. It can be defined as a structure that promotes regional development by enabling the commercialisation of developed inventions (Kandemir & İlter, 2019: 1219).

Technoparks, universities/research institutions, and industrial organisations conduct research, development, and innovation studies in the same environment; they share information and technology; and are organised research and development, innovation, and technology ecosystems that integrate academic, economic, and social structures.

The term "technopark" is an acronym for "science park" or "technology park". It refers to a structure with research facilities that serve as a planned workplace for the growth of the government, academic institutions, businesses, and the financial sector. R&D studies are directed by utilising technological resources commonly used by large universities, and technology transfer between universities, research labs, and industry is accomplished.

The International Association of Science Parks (IASP) defines a technopark as a location intended to promote the establishment and growth of industrial businesses based on the information and cutting-edge technologies that are officially or actively linked to one or more universities or other higher education institutions and research centres. It is an incentive- and ownership-based venture with a management function to support tenant enterprises with business management and technology transfer.

Instead of traditional industry, nations seeking a sizable piece of the fast-globalizing global economy invest in research and technology. Science parks, technoparks, and innovation hubs-locations for R&D-gain significant significance in this setting. Technoparks manage and foster the flow of knowledge and technology between universities, R&D institutions, businesses, and the market to boost societal wealth through support for the

innovation and competitiveness culture of knowledge-based organisations. Technoparks offer high-quality locations and value-added services to creative businesses, helping to foster their development and expansion through the use of their incubation centres.

Technoparks are structures that aim to develop industrial areas that use technology intensively in their production and increase industrial activities in the regions where technoparks are located, as well as those that seek to increase competition in the global market by establishing education and productivity increases in newly created regions (Yülek, 2020: 130).

In general, technoparks are an ecosystem in which various organisations continue their innovative studies within the same institution with the assistance of universities, research institutions, industrial organisations, and state and local governments, conduct research and development on innovative and technological issues, and interact with one another. In other words, Technoparks are Technology Development Zones where companies using high/advanced technology or aiming to produce new technologies produce/develop technology or software using the facilities of a particular university, high technology institute, R&D centre, or institute.

The following list of common attributes of technoparks can be made in terms of implementation (Pamukkale Technopolis):

- Technoparks are typically found inside or close to a university that has finished developing its infrastructure and has a reliable computer network.
- Technoparks shouldn't be viewed as staffing firms. It encourages the creation of more jobs, but care is taken to ensure that company owners have the necessary technical and managerial skills.
- There are specific sorts and levels of risk in each park.
- There should be a constant, forward-looking interaction between the university and the industry's scientific and technological capabilities.
- Technoparks should have good access to transportation and communication systems and be adjacent to industrial areas.
- Management should treat entrepreneurs with impartiality and independence.
- In the development and operation of technoparks, there are two forms of capital. The first is venture capital, and the second is start-up capital. The park's income comprises the rents paid by the entrepreneurs, the sale of patent rights, and this partnership portion if the firm of the entrepreneur who departed the park is partnered.

2.2. Development of Technoparks in Turkey

The first technoparks, seen during WWII, were formed in 1952 in Northern California, USA, under Stanford Research Park (Silicon Valley). Heriot-Watt University, founded in 1972 in England, is the world's second-largest technopark. With the change in

global economic balances during the 1970s and the decline in industrial-based production, industrialised countries have boosted R&D resources and devised procedures for transferring research discoveries to industry to enhance production and revitalise the industrial sector. Technoparks are the most effective method that has been created in this area. To overcome the economic crisis of the 1970s, developed countries put R&D results from universities and research institutes into reality. They prioritised the technopark program with regional development goals, unemployment elimination, land evaluation, and science-based production. Considerable progress was made during the 1980s, and significant results were gained in the intended subjects. Technoparks were famous worldwide by the end of the 1980s, and there are examples in many countries today (Association of Technology Development Zones).

DPT brought the subject of technoparks to the Turkish government's attention for the first time in 1989. Rustam Lalkaka and Norman Schiff, who was invited by the SPO and commissioned by the United Nations Science and Technology Fund for Development (UNFSTD), visited universities and research institutes in Istanbul, Ankara, Izmir, Gebze, and Eskişehir between March 1 and 15, 1990. They investigated the options and held lectures in the relevant industry chambers (Coplugil, 2018). The Middle East Technical University, the State Planning Organization, and the Undersecretariat of Defense Industry began researching the construction of technoparks in the 1980s (Tunçay & Mastar-Özcan, 2015: 45). Technology Centers (TEKMER), the precursor of technology development zones, were founded in the 1990s, and the legislative foundation for technology development zones was established in 2001 with the Technology Development Zones Law No. 4691. (Technology Development Zones Association).

The UNFSTD and the Turkish Government then started working on a project called Program for the Establishment of Technoparks in Turkey. It was decided to build 5 technoparks for this study at ITU, METU, Ege University, Anadolu University, and TUBITAK MAM Research Center. Four universities collaborated with KOSGEB and TUBITAK MAM to develop first-stage centres.

Table: 1
Statistical Data on Technology Development Zones in Turkey as of January 20, 2022

Number of Active Regions	76
Number of Regions Undergoing Infrastructure Works	16
Total Number of Regions	92
Number of Firms	7.419
Number of Firms with Foreign/Foreign Partners	287
Number of Incubation Firms	1.815
Number of Firms with Academician Partnership	1.561
Total Number of Personnel	76.584
Number of Projects (Ongoing)	12.231
Number of Projects (Completed)	44.087
Patent Registration Number (National/International)	1.410
Number of Utility Model Registrations	428
Industrial Design Registration Number	252
Software Copyright (Taken)	655

Source: T.C. It was created by us using the Ministry of Industry and Technology data, January 2022.

2.3. Objective of Law No. 4691 Relating to Technology Development Zones

Law No. 4691 on Technology Development Zones defines the purpose in terms of universities, businesses, and the nation. Benefits for universities include the chance to conduct new research as a result of working with companies, the creation of resources through the transfer of funds from technoparks to R&D, more effective industry collaboration, the provision of employment for university students and graduates, and the development of a practical training environment through partnerships with businesses.

Companies can gain from a suitable environment for R&D studies, collaboration with the university, more accessible access to university consulting services, and the university's research infrastructure. This synergy comes from being around other R&D companies, more straightforward technology transfer, and services the technopark management company offers to companies.

In terms of the nation: The growth of businesses producing cutting-edge technology; the development of the nation's technological infrastructure and, consequently, its economic structure; the improvement of the nation's competitiveness on the global stage; the rise in the level of welfare; and the development of the technological infrastructure that will hasten the inflow of foreign capital.

It is possible to list the current legal regulations regarding Technology Development Zones as follows:

- Technology Development Zones Law No. 4691, published in the Official Gazette dated 26.06.2001 and numbered 24454 (Law No. 4691).
- Law No. 5035 Amending Certain Laws published in the Official Gazette dated 02.01.2004 and numbered 25334 (Repeated) (Law No. 5035).
- Corporate Tax Law No. 5520 published in the Official Gazette dated 21.06.2006 and numbered 26205 (Corporate Tax Law).
- Corporate Tax General Communiqué Serial No. 1, published in the Official Gazette dated 03.04.2007 and numbered 26482, and Corporate Tax General Communiqué (Communiqué, Serial No. 6, published in the Official Gazette dated 05.05.2012 and numbered 28283).
- Law No. 5746 on Supporting Research, Development and Design Activities published in the Official Gazette dated 12.03.2008 and numbered 26814 (R&D and Design Support Law).
- Circular of Social Security Institution Presidency dated 25.09.2008 and numbered 2008-85 on Supporting Research and Development Activities (2008-85 Circular).
- Circular of Social Security Institution Presidency dated 06.02.2009 and numbered 2009-21 on Supporting Research and Development Activities (2009-21 Circular).
- Law No. 6170 Amending the Law on Technology Development Zones published in the Official Gazette dated 12.03.2011 and numbered 27872 (Law No. 6170).

- Law No. 6676 on Supporting Research and Development Activities, published in the Official Gazette dated 26.02.2016, numbered 29636 and Amending Some Laws and Decrees (Law No. 6676).
- Technology Development Zones Implementation Regulation (Regulation) published in the Official Gazette dated 10.08.2016 and numbered 29797.
- Implementation and Audit Regulation on Supporting Research, Development, and Design Activities published in the Official Gazette dated 10.08.2016 and numbered 29797 (R&D and Design Support Regulation).

3. Tax Advantages of Technoparks in Turkey

Technoparks are growing in number every day in Turkey. As mentioned, there are currently 92 technoparks in Turkey, of which 76 are operational, and 16 are still being built. To boost R&D studies in Turkey and throughout the world, adapt to the new global order, and assure economic growth and development by utilising technological advancements, emphasis is placed on technology development zones. Technological and economic progress is furthered by the state's various forms of support for the activities conducted in technoparks. In this regard, tax benefits from tax expenditures are the primary support for technoparks in technology development zones.

Technoparks in Turkey are granted several benefits under Law No. 4691. Tax advantages rank as the most significant of these benefits. The "Technology Development Zones Law", also known as Public Law 4691, is the foundation for the tax benefits offered to technoparks. This law was implemented in 2001. Tax benefits include income tax benefits, salary benefits, employer support for social security premiums, corporation tax benefits, stamp tax benefits, value-added tax benefits, and customs tax benefits. Tax benefits fall under the purview of Law No. 4691; Kayalıdere (2014) states, "the benefits applied to the management firms comprise the benefits applied to the companies operating in the region and the benefits applied to the personnel working in the region". The law grants benefits by applying tax expenditures (exemption, exemption, and discount) to executive corporations, firms, and personnel operating in the region.

The managing company is defined in Article 5 of Law No. 4691 as "planning and designing the region, carrying out the necessary infrastructure and superstructure services and all kinds of services required for the Region, establishing incubation centres and technology transfer offices, evaluating R&D or design projects, and considering the procedures and principles to be determined by the regulation for entrepreneurs whose projects are deemed appropriate. It is responsible for allocating a location inside the Zone, managing the Zone in line with the purpose stated in this Law and related laws, prohibiting activities by entrepreneurs and third parties against it, and implementing the required measures".

3.1. Income Tax and Corporate Tax Advantages

One of the most significant benefits granted in the technological development zone is the application of exemptions and exceptions to income and corporate taxes. In this context, the relevant laws' exemptions and exceptions can be articulated as follows:

Earnings from software, design, and R&D activities in these regions are exempt from income tax and corporate tax until December 31, 2028 (Law No. 4691, provisional article 2). If the profit was made as a result of the work completed on order, the entire gain is exempt; however, if the payoff was created as a result of the sale, transfer, or rental of intangible rights covered by a patent or a patent equivalent document, instead of the entire profit, it is subject to the conditions outlined in the Council of Ministers Decision dated 11.9.2017 and numbered 2017/10821. The Council of Ministers' Decision states that the qualified expenditure amount is divided by the total expenditure amount to determine the portion of earnings that will be exempt. If the total expenditure does not exceed the amount of qualified spending, the eligible cost may be increased by 30% in this calculation. The Council of Ministers Decision governing the exemption income application is valid for incomes from projects beginning in the region after 19.10.2017, the date the decision was published in the Official Gazette, and for payments from projects starting before this date, after 30.6.2021 (Açar, 2021: 234).

All taxpayer groups operating in the technological development zone are exempt from personal and corporate income tax. In this respect, management firms engaged in software development, research and development, and design activities in technology development zones are exempt from income tax until December 31, 2028. (Technology Development Zones Law). For taxpayers to make use of the exception's scope; being in the region; carrying out the activities specified in the law; obtaining a document proving that it is located in the region defined by the managing company and that it carries out the actions specified in the law; submitting the documents received to the tax office to which they are affiliated and filing an application.

Companies working in technoparks must be based in the region to qualify for the exemption. If the enterprises in the technopark carry out the activities outlined in the Law outside of the region, all of their earnings are taxed (Demirli, 2014: 101). In the case of sales made as a result of mass production and marketing of these products and intangible rights, a transfer price exception will be used; the remaining portions will fall outside the scope of the exception (Dilsiz & Fırat, 2018: 11).

The most significant benefit to enterprises in the technopark is the exemption from corporate tax. Because of this exemption, business taxpayers will not be subject to a 25% corporate tax on earnings from R&D, software, and design operations in the region beginning in 2022. On the other hand, taxpayers earning the same income outside the zone will face a 25% corporate tax in 2022.

The benefits granted in corporate tax, as in other taxes, exclude the earnings of taxpayers who own businesses in the region from taxation, and taxpayers are supported and encouraged to venture. As a result, it enables competition in the international market by contributing to advancing economic and technological breakthroughs.

3.2. Fee Advantages

The wages of support staff, design staff, and R&D staff engaged in the area are exempt from income tax, stamp duty, and other taxes under Law No. 4691 until December 31, 2023. By Law No. 7263, this date was moved up five years to December 31, 2028. Article 7 of Law No. 7263 states that the income tax calculated from the pay of the personnel employed in the region after applying the minimum living allowance would be subtracted from the tax accrued in the withholding tax return. When the Law is examined, it becomes clear that not all employees fall under the exception's purview.

The "Law No. 4691 and Implementation Regulation" specifies the following requirements for obtaining the technopark fee exemption:

- The percentage of support staff who will receive the benefits of income tax withholding and social security premiums is limited to 10% of the total number of R&D and design staff.
- In businesses with fifteen employees in the region, it cannot be higher than 20%.
- The exemption from paying wages covers forty-five hours per week. Additional working hours are not included.
- The whole number of employees or up to 20% of the total working time is eligible for the income tax withholding incentive if the employees work outside the region.
- Additionally, R&D and design employees who work for one-year, postgraduate employees who work for one and a half years, and doctoral employees who work for two years or less in these companies within the Region, provided that they do not exceed the entire period, are all eligible for the incentive. The amount is to be determined separately or jointly by the President.
- The Ministry must be informed to take advantage of the benefits covered by this scope by getting the management firm in the Region's consent.

Another significant tax benefit of technoparks is that the Treasury pays 50% of the insurance cost computed over the wages of the taxpayers whose fees are free from income tax.

3.3. Stamp Duty Advantages

The tax exemption from stamp duty is another benefit offered to management businesses operating in technoparks regarding taxes. "The management company is exempt from stamp tax in terms of papers produced regarding the execution of this Law, from fees in terms of transactions, and real estate tax due to movables it owns inside the Zone area",

states Article 8 of Law No. 4691. Municipalities do not charge regions running wastewater treatment facilities for their services.

The papers created for the staff members in charge of R&D, innovation, and design activities, as well as those necessary to be issued in these activities, are exempt from stamp tax (Kutbay & Öz, 2017: 797). However, due to the documents, papers, and transactions conducted due to the execution of Law No. 4691, the management firms in the technoparks are covered by the stamp duty and fee exemption (Koç, 2018: 491). The managing firms are also excluded from paying property taxes on any movables they own in the area.

No stamp duty or fees would be levied owing to documents, papers, and transactions done within the framework of software projects, R&D projects, design projects, innovation projects, and products imported for research, according to Article 2 introduced to Law No. 4691 in 2016. The products imported for these projects, as defined by the appropriate legislation, are free from stamp duty and fees.

According to the most recent change issued with Law No. 7263, papers generated for R&D personnel, design personnel, and support personnel working in technoparks would be exempt from stamp tax until December 31, 2028.

3.4. Value-Added Tax Advantages

According to temporary article 20 of the Value Added Tax Law, "according to the Technology Development Zones Law No. 4691, the income of entrepreneurs operating in the technology development zone is exempt from income or corporate tax, and the products they produce exclusively in these zones, such as system management, data management, business applications, sectoral, internet, deliveries, and services in the form of mobile and military command software, are exempt". In this respect, enterprises operating in technoparks can take advantage of the VAT exemption as long as they also take advantage of the income and corporation tax exemptions. This exception in technoparks is just a partial exception because it is based on deliveries made by enterprises in the region (Demirli, 2014: 101). The duration for which the exemption will be applied is a key consideration in the value-added tax exemption. In terms of duration, it has been observed that the income tax and corporation tax exemptions are regulated in the same manner as the application period, which has been extended to 31 December 2028 in Law No. 7263.

When technoparks are assessed in terms of value-added tax, it is a significant indicator of the benefits offered to technoparks that the local businesses produce the goods and services listed in the law within the exemption period and that the firms outside the region do not pay value added tax, even though they produce the same goods and services and pay 18% value added tax.

3.5. Customs Tax Advantages

The provision introduced to Law No. 4691 states that imported commodities used in research connected to activities carried out within the scope of the law are exempt from customs duty. If they carry out the activities indicated below, all companies dealing with the actions specified in the law are eligible for customs tax exemption. These activities include software activities; research and development activities; innovation activities; and design initiatives.

Companies who want to profit from the customs tax exemption must apply to the regional management firm for the exemption of imported goods. The regional management firm evaluates the application for eligibility within the project's scope. The regional manager firm then submits an application containing the items judged eligible for import and information about the commodities. This application is routed to the General Directorate via the "Ministry of Customs and Trade Single Window System" and, if necessary, to the Ministry of Customs and Trade via the "Ministry of Customs and Trade Single Window System". Furthermore, documents and paperwork prepared for transactions resulting from these activities are exempt from stamp duty and taxes.

3.6. Other Advantages

Taxes on income and corporation taxes are not applied to grants, support, contributions, or other financial assistance provided to taxpayers working in technoparks for R&D projects. Grants, support, donations, and other forms of assistance must be provided by TUBITAK and other institutions of the exact nature to qualify for this exception. As a result of receiving this exemption, taxpayers will not pay taxes (Öz & Gülten).

4. Tax Advantages for Technoparks and Studies in The Literature on Zafer Technopark

A small number of research employing qualitative and quantitative analytical techniques have been found, although theoretical studies on the tax benefits offered to technoparks exist in the literature. The following are the qualitative and quantitative research about the tax benefits given to technoparks and Zafer Teknopark Joint Stock Company that can be found in the literature:

A questionnaire from quantitative analytic methods was used in the study by Delichasanoglou in 2007 titled "Technology Development Zones, Its Development in Turkey, Tax Advantages, and A Questionnaire Application". The survey included 325 businesses from the GOSB, ITU ARI, CYBERPARK Ankara, METU, Hacettepe, and Izmir Institute of Technology Development Zones. According to the findings of this study, the primary incentive for companies locating in these areas is to take advantage of tax breaks.

The study, completed in 2019 and using Zafer Technopark as an example, was developed by Kandemir and İlter and discussed the significance of technoparks in

entrepreneurship activities. The study aims to highlight the value and importance of technoparks, particularly in entrepreneurial activities intended to put novel concepts and discoveries into practice. In the study, a qualitative research methodology was employed. The study aims to highlight the value and significance of technoparks, particularly in entrepreneurial activities intended to put novel concepts and discoveries into practice. The degree to which the entrepreneurs in Zafer Technopark are using the opportunities offered by Technopark has been attempted to quantify in this context.

4.1. Perception of the Tax Benefits of Zafer Technopark Companies

4.1.1. Research Method

This qualitative study on the tax benefits given to technoparks uses a phenomenological design. Companies owned by Zafer Teknopark Joint Stock Company are included in this context. The main reason scientists favour qualitative research is to explore a specific topic, phenomenon, text, discourse, person, group, and society to ascertain their thoughts and experiences about the researched issue (Encan, 2005: 505). Phenomenology aims to explore people's experiences and learn their opinions and perceptions of the topic or subject being studied (Tekindal & Uğuz-Arsu, 2020: 156). Open and closed-ended questions were posed to the interviewees in this study, which employed the formal interview method. The questions were created According to the subject's literature review findings. The Afyon Kocatepe University Social and Human Sciences Scientific Research and Publication Ethics Committee were consulted to do fieldwork for the study. After receiving the committee's report in response to the application, fieldwork was conducted in May and June 2022. The research participants were informed that the information they supplied about the research would only be used for this research and that their personal information, such as name, surname, and surname, would not be used. The owners of the businesses that took part in the research were also informed about it and how it was conducted.

The research's data is comprised of 20 open-ended questions. Using a "semi-structured interview form", the questions were gathered, and the answers provided by the research participants were examined. Separate codes were supplied to each person in the study who took part in it. Owners of businesses were designated as Company Owner 1, Company Owner 2, and Company Owner 3 in this context.

The information in the research's findings was examined using descriptive analysis. The phrase "descriptive analysis approach" refers to summarising and interpreting the gathered data within the context of the initial themes chosen (Özdemir, 2010: 336). The study's conclusion, discussion, and recommendations section explain the data discovered due to the investigation.

4.1.2. Research Objectives and Aims

This study aims to understand how businesses operating in technoparks view the tax benefits provided by the "Technology Development Zones Law", also known as Public Law

No. 4691. Afyon-Uşak Zafer Teknopark Joint Stock Company in this approach. This study aimed to ascertain how companies within the company perceived tax benefits.

Since the tax results from a relationship with money, taxpayers must know the tax benefits. Since they reduce taxpayers' revenues, taxes are significant in this context for taxpayers. Institutions, corporations, and firms must pay the government a portion of their annual income as tax yearly. The taxes that the businesses may result in a reduction in their income. As a result, the state provides businesses with some benefits to promote sustainable growth and development. These benefits are especially true for goods and services with a high added value level. As a result, businesses developed within the technopark ecosystem are given tax benefits. Technoparks are areas where companies that use advanced technology or aim to develop new technologies produce/develop technology or software by utilising the facilities of a specific university or high technology institute or R&D centre or institute, transforming a technological invention into a commercial product, method, or service. Within or near the same university, high technology institute, R&D centre, or institute operating to alter and contribute to the region's growth, where the academic, economic, and social structures are interwoven or areas with these features. The tax benefits offered to technoparks in this context are significant. By performing a qualitative study on the tax benefits provided to technoparks, this research could gauge how well-versed company owners are on their tax advantages and what those perceptions are. Zafer Teknopark Joint Stock Company in particular. By evaluating how well-informed company owners are about their tax benefits and how they see them, this study is intended to further the literature in this area.

The research's ability to inform entrepreneurs about the tax benefits of technoparks has also been deemed necessary. This will help entrepreneurs who already operate in technopark regions and those who will move there in the future.

4.1.3. Research Design, Population, and Sample Size

The companies included in the study's scope were found in the Aegean Region's technopark and still operate actively today. The companies in the area that are part of Afyon-Uşak Zafer Teknopark Joint Stock Company are the study's sample. The study's technique of choice was purposeful sampling in this approach. Zafer Teknopark Joint Stock Company considered accessibility when conducting the investigation. There are a total of 44 companies allowed. However, a total of 6 company owners were surveyed during the research period because the owners of the companies were overseas, outside the city, in the technopark area due to a different activity, due to the academic activities of the academic company owners, and due to other activities of the entrepreneurial companies.

5. Research Findings

The research's demographic data, information about the firm owners who participated in the study's work, and their opinions on tax benefits are all included in this section. The

research findings listed the owners of the companies that took part in the study as "FS 1, FS 2,..". from 1 to 6.

5.1. Demographic Findings

Table: 2
Demographic Structure of Firms in Zafer Technopark

Participants	Marital Status	Gender	Age Range	Educational Status	Profession Outside the Technopark	Field of Activity
FS 1	Married	Man	39-48	Graduate	Academician	Software
FS 2	Single	Woman	18-28	Graduate	No	Software
FS 3	Single	Woman	18-28	Graduate	No	Software
FS 4	Single	Woman	29-38	Graduate	No	R&D (In Agricultural Field)
FS 5	Married	Man	39 -48	Undergraduate	Officer at the University	(Software) Health - Medical Devices)
FS 6	Married	Man	39-48	Undergraduate	No	Software development

When Table 2 is examined, it shows that of the six individuals, half were married, and half were single. Participants are split equally between males and women. According to the participants' age ranges, half were between the ages of 39 and 48, two were between the ages of 18 and 28, and one was between the ages of 29 and 38. More than half of the participants who were questioned about their educational background gave this response, and the remaining company owners also had a degree. More than half of the participants did not have a profession other than the technopark, and the remaining participants had a job outside of the technopark; it was discovered when the participants were asked if they had a separate profession besides the technopark. After asking the participants about their area of expertise, it was found that more than half worked in the software industry, one in software development and the other in research and development.

5.2. Findings Regarding Firm Owners' Views on Tax Benefits

The proprietors of the businesses in the Afyonkarahisar Zafer Technopark Joint Stock Company Region participated in the research. The Zafer Technopark Joint Stock Company Region is home to 44 firms. The perspectives of six company owners were included since the responses provided by the research participants to the questions were comparable.

The study posed 20 questions, including demographic inquiries, to the company owners. Three company owners who were among the participants that were interviewed provided in-depth responses to the questions.

The FS 3, FS 4, and FS 5 participants each provided a standard and broad response to the questions. The three company owners were subjected to a thorough interview. The participants were just asked a few questions, and as a result, a broad response was provided because the owners of the enterprises do not already enjoy a tax advantage. These three participant company owners responded as follows:

> *"We receive funding from KOSGEB. We can only make use of the fundamental science exemption for two years. The law numbered 5746 on promoting research, development, and*

design activities is advantageous to us. We are not eligible for the VAT or other exemptions. There are no tax benefits for us".

There are no tax benefits; it has been found after evaluating the viewpoints of the company owners. The following are the responses provided by the other company owners who took part in the research to the questions posed as part of the study:

"How did you decide to open a company in the technopark?"

FS 1: "To use my knowledge here".

FS 2: "We decided to do our work".

FS 6: "I was one of those who gathered signatures for its founding. I would have applied my proposal to a different technopark region if this one hadn't just come up.

When the perspectives of the company owners are compared, it can be said that the owner of company number 1 opened a firm in the technopark to put his knowledge to use, while the owner of company number 2 decided to open a business there to carry out his work. To actualise his vision, the proprietor of company number 6 has chosen to establish a business in the technopark. When the responses of the owners of businesses 1, 2, and 6 are considered, it can be concluded that they opened their businesses in the technopark to actualise the projects they had created using their knowledge and experience.

"Do you know about the tax advantages applied to technoparks? If so, what are they?"

FS 1: "Yes, there is. We are here on a project basis. After completing the project, we are exempt from VAT and corporate tax. We'll generally have to pay for them if we're outside the zone. Additionally, we are exempt from income tax, customs duties, and insurance premiums.

FS 2: "There is. VAT exemption".

FS 6: "Yes, there is. The first is VAT exemption (in my purchases and sales). Additionally, the tax exemption granted to personnel means my project income is tax-free.

When the views of company owners are assessed, it is found that they are knowledgeable about the tax benefits associated with technoparks. Tax advantages are known to the participants; The employees are reportedly given exemptions from the VAT, customs duty, income tax, insurance premiums, and income tax.

"Did tax benefits play a role in your decision to launch a business in the technopark?"

FS 1: "Not for now. Because we can't use it right now. It will have an effect when the project is completed".

FS 2: "Yes, it did. VAT and other advantages had an impact".

FS 6: "Yes. The main factor is the tax benefits offered to businesses in the technopark.

When the views of the company owners are considered, the owners of companies 2 and 3 claimed that it had an impact. However, the owner of Company 1 stated that it has no effect at this time.

"If the tax advantages provided to the technopark are removed, would you continue to operate in the region?"

FS 1: "We continue even without tax benefits".

FS 2: "Not sure, but if I'm not going to use the perks, I can quit if there's no privilege".

FS 6: "I may not".

It has been established that the company owners provided responses corresponding to the prior query. In this regard, the owners of companies 2 and 3 said they could continue their operations even if the tax breaks given to technoparks were eliminated, while the owner of company 1 said they would carry on with their operations even if the tax breaks were eliminated.

"Are you satisfied with the tax benefits Turkey offers technoparks? What, in your opinion, should be added if your response is insufficient?"

FS 1:" No tax benefit exists before the project's completion. That is why it is insufficient. At the time of the project, there ought to be a benefit similar to KOSGEB".

FS 2: "I have no idea. Because we haven't taken advantage of it yet".

FS 6: "That's all I have for now".

The owner of company number 1 remarked that he did not think it was sufficient and that it was important to offer a benefit like KOSGEB during the project time when the opinions of the company owners were reviewed. The owner of company number 2 claimed to be unaware because he did not benefit, while the owner of company number 6 claimed to believe that the tax benefits already in place were adequate.

"Are you aware of the tax benefits now given to technoparks in other nations? What are they if so? When you compare it to Turkey, how would you rate it?"

FS 1: "No".

FS 2: "No, there isn't".

FS 6: "No, there isn't".

When the views of the company owners are assessed, it is found that they need to be made aware of the current tax benefits given to technoparks in other nations.

"What are the tax supports provided to managing companies and entrepreneurs?"

FS 1: "Income tax, wages, corporate tax, customs duty, the insurance premium".

FS 2: "There is no particular benefit for company owners. A young entrepreneur exception within the parameters of Technopark applies to both Technopark itself and other tax legislation.

FS 6: "Income tax exemption, VAT exemption, and personnel income tax exemption".

The owners of enterprises numbered 1 and 6 responded as follows when asked about the help they believe is given to management companies and entrepreneurs: "Income tax, wages, corporation tax, customs tax, insurance premium and income tax exemption, VAT exemption, and staff income tax exemption". According to the owner of business number 2, there is an exception for young entrepreneurs.

"Do you have any information on the tax benefits that management businesses receive if they engage in commercial operations other than those performed in the technopark?"

FS 1: "I don't know".

FS 2: "Not exactly. We only benefit from tax breaks for the project we're working on here, but I wish there were more".

FS 6: "No advantage as far as I know".

The company owners claimed they needed to be made aware of the tax benefits management companies receive if they engage in any commercial activity besides what they do in the technopark.

"What activities are tax breaks for entrepreneurs valid for?"

FS 1: "It exists for personnel insurance expenses".

FS 2: "I don't know about tax exemptions for entrepreneurs".

FS 6: "For R&D activities".

When the opinions of the company owners were assessed, they claimed that the owner of company number 2 was responsible for the staff costs of the owner of company number 1, while the owner of company number 6 received a tax exemption for the R&D activities of entrepreneurs.

"What resources are available to the staff in the area?"

FS 1: "There is insurance premium support".

FS 2: "There are SSI incentives, and there are incentives for doctoral students".

FS 6: "There is an exception to the income tax share paid to SSI".

When the perspectives of the business owners are compared, it is found that SSI premium support is the most frequently cited response.

"Are you aware of the exception that applies to R&D employees who travel within the region? What happens if an exception is used, and how is it used?"

FS 1: "Yes, there is. Previously, the regulation on outside time had been amended, and it was to be signed first. Now the stamp suffices".

FS 2: "Yes. We have to stay here for a specific time. The law accepts other than that, other deadlines. We fill out the appropriate paperwork if we intend to spend the day outside.

FS 6: "There is, indeed. The remaining income, after deducting the total number of work hours in the region, pays SSI and income tax".

When the company owners' views are considered, it has been found that the R&D staff is aware of the exemptions that apply depending on whether they work in the region or outside of it.

"Is the income from projects that were started before the operation in the area covered by the exception?"

FS 1: "It is not. Because the project must be done first".

FS 2: "I don't know".

FS 6: "No".

In response to the inquiry posed to the company owners, the owners of companies 1 and 6 claimed that earnings from projects launched before the operation in the region did not fall under the purview of the exemption, while the owner of company 2 was unable to provide any information.

"If your project is finished at the technopark, are there any tax benefits you might benefit from? If any, what are they? Or do you have any knowledge of tax benefits, and if so, what are they?"

FS 1: "Of course, there is. At the first stage, our project has VAT and corporate tax exemption".

FS 2: "When we move the project to the sales stage, there is a VAT exemption. But we need to start a new project if we want to stay in the area".

FS 6: "It is, indeed. Both income tax and VAT exemptions are available. I don't receive payment for my work".

When the business owners' views are analysed, it is found that there are tax benefits they may take advantage of if their projects are finished at the technopark. The advantage offered by VAT was found to be the participants' typical response in this situation, despite their responses being varied.

"Do you know about customs tax exemptions? Which companies benefit, and how is the customs tax exemption applied?"

FS 1: "There is, yes. We are not currently using it. Because we did not bring products from abroad".

FS 2: "No, I don't know about the technopark, but the Ministry of Commerce has it. There is support from the Ministry of Commerce for the products we will buy from abroad".

FS 6: "No, there isn't".

When the views of the company owners are compared, it is found that only the owner of company number 1 is knowledgeable about exemptions from customs taxes.

"Which taxes are exempted from purchasing machinery and equipment for R&D activities?"

FS 1: "We use VAT, corporate tax, and income tax".

FS 2: "There are VAT exemptions. In the products we request when applying".

FS 6: "VAT exemption".

When the perspectives of the company owners are compared, it is revealed that they all agree that VAT exemption is used when purchasing machinery and equipment for use in R&D activities and that business owner No. 1 also uses and applies corporation tax and income tax exemption. The owner of business number 2 said that all of the products they wanted when applying for the exemption were granted to them.

"Which discounts, exemptions, and exemptions offered to technoparks, do you use?"

FS 1: "We are not taking advantage at the moment. We only take advantage of SSI".

FS 2: "We haven't yet used it to our advantage. When requesting machinery and equipment, we asked for it. When we buy, we will take advantage of them.

FS 6: "We benefit from income tax and VAT exemptions".

When the opinions of the company owners are weighed, it is found that they profit from the benefits and exclusions offered to technoparks with firms numbered 1 and 6. It has been concluded that the owner of company number 1 benefits from the SSI benefit, whereas the owner of company number 6 benefits from the income tax and VAT exemptions. It has been established that the owner of company number 2 currently does not profit from any advantages.

"Regarding businesses outside the technopark ecosystem, how would you rate the tax benefits offered to technoparks?"

FS 1: "We also have a rental advantage. Rent and common expenses are more affordable here".

FS 2: "Technopark companies are more advantageous. Because he will pay a huge amount of tax abroad, and most of my earnings will go to taxes".

FS 6: "These businesses do not pay VAT because they enjoy VAT exemption. Because of the income tax exemption, they can make more appropriate purchases from technopark enterprises".

When the opinions of the company owners are considered, the owner of firms 1 and 2 claimed that the companies in the technopark ecosystem are advantageous in terms of tax advantages when compared to outside companies.

"Do you have any suggestions about the advantages provided to technoparks?"

FS 1: It should have an edge regarding project time, like KOSGEB. The advantages are used when the product is generated in the project. The project phase also involves many costs. These ought to be encouraged. For newly founded enterprises to survive, advantages in pay and employment should be offered.

FS 2: "Not just in terms of project scope and software. It should also be encouraged in other projects inside the technopark.

FS 6: "None".

When considering the thoughts of the company owners, the owner of company number 6 remarked that he had yet to learn about the benefits offered to technoparks. While the owner of company number 2 said that all work done within the technopark should be supported, the owner of company number one said that it should be advantageous like Kosgeb at the time of the project and that newly established businesses should be kept in terms of salary and personnel employment.

6. Conclusion

Taxes, which are the state's primary revenue source, are a source that lowers both individual and corporate income. Spending, investing, etc., by both individuals and businesses have a detrimental impact on behaviour. To promote the expenditures and investments of taxpayers' individuals and companies through laws, the state offers a variety of incentives, subsidies, and tax advantages.

In this regard, the "Technology Development Zones Law" with the number 4691 has provided several tax advantages to businesses operating in technopark zones, whose development is rising quickly in Turkey. These benefits include income taxes, wage benefits, employer support for Social Security premiums, corporation tax benefits, stamp tax benefits, value-added tax benefits, and customs tax benefits. Additionally, the grants, subsidies, contributions, and aids given to R&D initiatives by TUBITAK and other institutions are exempt from personal and corporate taxes.

According to the evaluation of the company owners who participated in the research, half did not receive any tax benefits, and these participants only profited from the basic sciences exemption for two years. After their initiatives are finished, it has been determined that other participants will receive tax breaks. It has been determined that there are income tax and corporation tax benefits, value-added tax and customs tax advantages, insurance premiums exemption, and income tax exemption granted to workers, and there is a young entrepreneur exception on the side of a firm owner. When taken as a whole, it is clear that business owners are aware of most of the tax benefits provided by the rules. It may be

inferred that the participants are unaware of the stamp duty supplied to them, the grants made by TUBITAK and other institutions of the exact nature of R&D projects, the supports offered, contributions and aids, and the exemption from income tax and corporate tax.

Tax benefits help half of the participating company owners start a business in the technopark. It has been found that certain company owners who open firms in the technopark because of tax benefits may not continue their operations there once the tax benefits expire.

When the study's findings are analysed, it is found that both those who benefit from the tax advantages because of their operations in the technopark region and those who do not are satisfied because they own a business there, that not all company owners are impacted by the tax benefits offered to technoparks, and that in general, company owners are aware of the tax benefits provided by the law.

In accordance with the study's objectives, interview questions were divided into three categories: "Descriptive information", "Elements affecting the activity in Zafer Technopark Joint Stock Company", and "Opinions on incentives and supports provided to Zafer Technopark Joint Stock Company". Regarding perceptions of tax advantages, the following conclusions have been drawn from the opinions of participants:

- When the perspectives of the company owners are compared, it can be concluded that they opened their businesses in the technopark to actualise the projects they had created using their knowledge and experience.
- When the views of the company owners are assessed, it is found that they are unaware of the current tax benefits given to technoparks in other nations.
- The company owners claimed that they were unaware of the tax benefits that management companies receive despite engaging in any commercial activity aside from what they do in the technopark.
- R&D staff is aware of the exemptions that apply depending on whether they work in the region or outside of it.
- The advantage offered by VAT was found to be the participants' common response in this situation, even though their responses varied.
- When the perspectives of the company owners are compared, it is revealed that they all agree that VAT exemption is used when purchasing machinery and equipment for use in R&D activities.

The results demonstrate that the encouragement and support given encourage businesses to operate in the Zafer Technopark Joint Stock Company Region. By encouraging more businesses to use in Zafer Technopark Joint Stock Company, extending the duration and scope of these incentives and supports will significantly contribute to increasing technology-intensive production with high added value.

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