Academic Research & Reviews in Social, Human and Administrative Sciences

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Edited by

Shajara Ul DURAR

Mohammed El Amine ABDELLI

GLOBAL ACADEMY

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Perface

This book provides insight into the Examination of institutions in terms of working hours, fragile currency, fragile economies and nominal triple deficits index (r-tdi), digitization of human resource management, regional convergence, and innovation policies in the countries under study, development of skills and processes related to primary school education, private sector activities within the framework of climate policies in relevant areas, the impact of disruptive and turbulent environments on multinational companies in terms of international relations, efficiency analysis of wind power plants in Turkey using enhanced OCRA context and social transformation in mass communication. It also addresses modern issues related to digitalization, innovation, the development of reading skills, and climate policies. Decision-makers and international institutions are interested in it.

The book dealt with a set of recent studies related to that time and meanings are created at the intersection of each other based on the worker's life, relationships and employment history, that the issue of good governance is much more important than the issue of additional public investment, that institutions and mechanisms are essential for the diversification of production, that scientific studies in the light of the data obtained from two large databases such as Web of Science and Scopus after theoretical information on the digitalization of HRM are very few studies in this field, One of the skills measured in the internationally recognized PISA exam, which is attended by students from 79 countries, is the ability to read, recent economic disruptions are a close link between political processes and the strategies of multinational corporations (MNCsr) and their affiliates, Turkey continues to view the problem of the climate crisis as a foreign policy issue, and in order to measure the representation of the r-TDI index, other indicators of fragility for a decade or more With the help of tables and graphs, the conclusions of the assessments made on eleven fragile economies and in this context the fragility of the TDI values are primarily the ability to represent and the extent of its effects on institutions and organizations as well.

This book is intended for management scholars, researchers, doctoral students, and entrepreneurs and policymakers.

Foreword

Academic research and reviews in Social, Human and Administrative Sciences is a thought-provoking book that provides valuable insights into the contemporary issues facing management scholars, researchers, doctoral students, and entrepreneurs and policymakers. This book is the result of recent research on a variety of Topics related to the challenges and opportunities that institutions and organisations face in the modern world.

The book addresses some of the critical issues affecting the global economy and society, such as fragile economies, human resource management digitization, regional convergence, and innovation policies. It also investigates the development of primary school education skills and processes, private sector activities in the context of climate policies, and the impact of disruptive and turbulent environments on multinational corporations.

The authors of this book provide a wealth of knowledge, expertise, and research that can help decision-makers and international organisations understand the dynamics of the global economy as well as the role of institutions and mechanisms in promoting economic growth and development. The book is an excellent resource for anyone interested in learning about the most recent trends and emerging issues in the social, human, and administrative sciences.

This book is a must-have for anyone interested in the most recent research and insights in the social, human, and administrative sciences.

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CONTENTS

CHAPTER 1

WORKING TIME, CREATING MEANING AND SENSE ACCORDING TO FIXED OR FLEXIBLE WORKING HOURS: A Psycho-Social Study from Labours' Perspective

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Introduction

Working hours play a significant role in the organization of one's life This study aimed to provide a framework of meanings and senses according to the organization of workers' schedules. To do this, a longitudinal research was conducted at a medium-size pasta factory which had four hundred workers. The workers' schedules were divided in fixed or flexible working schedules. Workers who were allocated in the production activities had specific and rigid working shifts, whereas the ones allocated in the administrative activities had relatively fixed working hours from 8-5, and the ones working on sales had flexible working hours. Working time is defined as a psychosocial construction throughout multiple interactions, capable of setting one's life around it. This guides subjectivity, interactions, mental health, and defines one's everyday practices. Grounded Theory was used as the basis of this longitudinal work, which lasted 12 months. Qualitative and quantitative methods were used to collect data, and were divided in 3 phases. Phase 1 established once a week visits to the company for a period of three months with observations written in the Field Diary. Phase 2 consisted of developing and applying a Survey about working time with the sales team of the company. Phase 3 had 8 interviews with workers who have fixed working schedules, and 8 interviews with workers who had flexible working hours. The Field Diary showed the contexts that time questions and issues emerged in the company, and the meanings that workers created for them. The Time Survey applied to the sales team demonstrated specific meanings attributed to time according to workers who had flexible working hours. The interviews showed how time and daily living are connected and the impact of working hours onto one's life. Now after COVID, when most workers are working remotely and with flexible working hours, it is possible to establish some relations between lack of personal time, time pressures, and its impact on health.

“Who does not have free hours in a day, is a slave,” Nietzsche.

Time is a complex concept imbricated in a variety of cultural and interpersonal artifacts. From 1) a succession of years, days, hours; to 2) a concept of present, past, and future; 3) relating to a time or occasion and its occurance; 4) period when one lives, for example, in a century; 5) the weather conditions; 6) spatial coordination allocating a physical event; 7) indicative of the moment when something is referred to; 8) part of some music, such as sonata, suite, quartet; 9) progress, movement; 10) duration of something, plus other meanings (Fraser, 1990).

In ancient Greek, time means division. There were two words to designate it: *Aion*, the present time from which other times are born, and *Kairós*: which means the right time to do something (Spantidou, 1987).

Time in Humanities is divided in psychological x organizational, social time. Psychological time is subjective, relative, demarcated by the subjective experience of events that occur within the same time interval. It is the time of experience, whilst dependent on internal events, guided by the feeling of duration and independent of external markers. On the other hand, social time is marked by social scales that vary from one organization to another, from one culture to another, says Hayman (2009).

These interactions are also imbricated on how humans speak about time, their work within periods, and how they create meanings to these interactions though language use. For instance, “I'm out of time, I wish each day had thirty hours, I still have to find time to do this, Do you have time now?, I've got plenty of time, I’ve got plenty of time, Sorry, your time is over.”

Time was helpful in creating a universal measure, see the work of Norbert Elias in the civilization process (1993, 1994); - it became a common ground to intersubjectivity, working rights, and quality of living. For the anthropologist Edward Hall, “Time speaks. It speaks more precisely than words. The message it conveys comes loud and clear. Time is manipulated less consciously; it is subject to less distortion than written language. You can shout the truth, but time will reveal it” (Hall, 1983:57).

Hall (1983) called this process as the dynamic of multiple temporalities, in other words, the dance of life. Ferrarotti (1990) said it

was the music of life. For Levine (1997), time composed the steps of life. Therefore, time not only speaks, but it shows and gives voices, promoting reflections, and establishing comparisons of the complex relationships among time, work, and living.

Time is the unit chosen, since the Industrial Revolution, to measure work and to organize jobs. Since then, it was time that measured work, creating boundaries and standards to being paid, extracted, manipulated, and separated from personal life. Capitalist time became the frame to productive time, whereas vacant time was seen as 'evil,' or else as called – the spirit of capitalism. (Weber, 2001). Lauer (1981) named the "the temporal man," calling the attention to the multiple uses of time, including to control humanity.

With the emergence of factories, the time dedicated to work constituted a period withdrawn from personal, social, and family life. With the intensification of globalization, competitive and productivity pressures emerged and led to the expansion of production, aiming to increase production and profits (Mumford, 1934).

Then, after the Treaty of Versailles, which established ILO - The International Labour Organization, there was a period of gradual reduction in working hours together with all the Labour movements in order to maintain dignity at work in first place (Whitrow, 1972). However, the recent years have shown exactly the opposite to that. Increasingly enough, companies and individuals announce themselves as 24/7. The 24/7 society model shows that professionalism and dedication are measured by availability at any time and any place. This new paradigm allowed the liberation of the submission to the clock, and keeps individuals working 24 hours a day.

As Whitrow (1993) says, humanity is governed by working time. It is constantly concerned about its demarcations. With little time left to live, some people call themselves 'modern-slaves.' Inside factory relations, the worker is not only alienated from one's activity, but becomes also separated from one's time. This expropriation is called by Kurz (1999) as meaningless dead time. This dead time is sold to the factory, together with daily activities, certain paces, rhythms, and the speed required for production.

Although the objective of modern society was to offer more free time to society, when time is money, it compromises the healthy living (DeVoe & Pfeffer, 2007). With the increasing demands imposed on the

human being in the same interval of time, the sensation of time scarcity is constantly produced and reproduced. This directly affects health in many ways (Ya-Yuan Hsu, Chyi-Huey Bai, Chien-Ming Yang, Ya-Chuan Huang, Tzu-Ting Lin, Chih-Hung Lin, 2019). Free time is imperative for mental health and well-being, but there seem never to be enough hours in a day (Roxburgh, 2004).

The concerns regarding working time, with their individual and social effects, are at the heart of the International Labour Organization and Movements. Since 1919, albeit with different intensities, and importance, it still remains a crucial factor impacting the quality of life and one's life dignity. As time became a most precious commodity, time efficiency became the concept that managers and leaders had to use to motivate workers to do their bests and achieve their goals and tasks, the fastest!

For the perspective of the employee, a large amount of time is spent in work just for the monetary gain of the company. In these cases, there is little space for self-development while executing the given tasks by the company. For a more personal analysis of time, which means the time spent on personal development, family, friends, and healthy activities, it is precisely this that makes one's life more meaningful. This leisure and playful time may even include eventual company festive events that bring significance to one's daily living. It is precisely the combination of work and personal life that marks human activity, more specifically - the balance between them. Hours in a day should conciliate both work and personal demands; for example, health and well-being, parenting, caregiving, etc. However, there are changes in these standards when industrial age emerged, but also post-Covid remote working schemes (Kaufman & Taniguchi, 2021) that disrupted this balance and put humans in a position of working remotely all of their time.

Thus, how do workers react to their division of work and personal life, how do they create meaning upon the different working time schemes, how do they resist the different working hours that companies impose, do they accept that, do they simply adapt, what do they view as best working hour schemes, how do they relate to fixed or flexible working hours, who is freer, who is happier, who can they manage and balance their life in a healthier way?

These are some of the questions that directed this work at the pasta factory within the Social Psychology field. Incompatibility between

individualist values and collective work issues can increase psychological health problems at work, put at risk the work-family balance, disrupt personal life schemes. Social Psychology addresses the interaction between the individual and the social, taking into accountability both objective and subjective dimensions. Social Psychology can provide the resources towards how individuals create meaning and sense according to their fixed or flexible working hours (Martins, 1999; Vicente, 2018).

These complex relations are in the intersection of the personal, organizational, and social life, and called time paradox by Zimbardo & Boyd (2008). This research had to overcome some methodological barriers to capture these complexities in the way they happen during working time. To understand the network of relations at the intersection of work and personal time (Nippert-Eng, 1996); precisely, how workers valued fixed or flexible working shifts, there was a need to use multiple methods, and comprehensioon. These methods should capture the sayings, the essence, the co-creation of these negotiations in their real-life interactions.

There was also an ethical need to cover this data anonymously, not only to better understand how workers were impacted by organizational labour time, but also to comprehend how they reacted to that, how they managed their working hours, what their thoughts and reflections were developed upon the relation between productive time and their personal lives without putting their job at risk.

The chosen place to conduct the research was a pasta factory. This pasta factory is one of the leading pasta factories in South America. It uses six hundred tons of flour per day. It also employs over four hundred workers in its premises, but it has over 3.000 indirect collaborators. The factory workers were divided in 3 time and working schemes: 1) administrative workers (working from 8 to 5 or 6, had flexible lunch hours); 2) production workers (morning shift from 6am to 2pm, afternoon shift from 2pm to 10pm, evening shift from 10pm to 6 am, had a 30 minute meal break, and 2 breaks of 15-minutes); sales team (flexible working hours based on target sales, flexible meal breaks).

The company plays a significant role in the international scene as it received the XXII International Food and Beverage Award, in Dusseldorf, Germany, in recognition of the excellence of its products (http://en.selmi.com.br/our-history). To address the complexity of the

real-working time scheme within this factory, the Grounded Theory was the methodology adopted to achieve this research goal.

Grounded Theory and Method

"Of all that exists, nothing is more uncapturable than time," Laymert Garcia dos Santos.

According to Norbert Elias (1989:16), "we lack conceptual models and a general vision." Each group will create meaning and sense for the reality they are immersed in. Banister et al (1994:3) affirm that qualitative research should focus on the context and integrity of the collected material, thus leading to a more contextualized interpretation of the relationships investigated.

The Grounded Theory (GT) originated in empiricism and pragmatism, favouring field research and experience in the place of theory. This inductive method is related to the observation of the empirical. It aims to establish compilations, reflections, theories from the ground. GT privileges the gradual production of knowledge, basing it on collected data and established relationships (Chenitz; Swanson, 1986; Glaser, Strauss, 1967; Pidgeon, 1996).

As a method, Grounded Theory consists of flexible methodological strategies, plus (b) products of this type of inquiry. The methodological strategies of Grounded Theory provided the construction of middle-level theories directly from data analysis. Its analysis are, therefore, built upon strong empirical foundations, which support conceptual theories. These theories explain the studied empirical phenomena.

Grounded theory provides sequences and guidelines to conduct qualitative research, whereas integrating data collection and analysis, whilst advancing upon qualitative data analysis. The application of GT0 in the organizational setting was particularly interesting to address the complexities and imbrications of research within the intersection between the working time and the individual time in the factory premises. (Charmaz, 2009)

As for Grounded Theory, the theory will be constructed upon empirical data, and not a priori towards it. Strauss & Corbin (1990: 23) say that Grounded Theory is an inductive discovery (Strauss, 1995). It may start with an area of study that is relevant, and then, it allows that area of knowledge to emerge. Another key factor that needs to be

mentioned was the support of the whole factory to the conduct of the present research in its premises.

There was a pact agreement with the directors and human resource team that helped the whole process to be held smoothly and without any conflict of interest. The first agreement was upon all data collected being anonymously conducted in order to gather true and faithful data. Another agreement set previously to the beginning of the research was the access to data. It was agreed that all data would be Open Access to both employees and company in the format of printed master thesis and journal articles. This copy and all feedback from the research would made be available through newsletters and shared with all workers.

Research Phases

"Tempus Fugit. Time flies," Ovid.

Three research phases were developed and established together with the factory team, through multiple interactions, and not a priori to this study. During the initial weeks, the researcher was introduced to the whole factory schemes and time schedules. The researcher was able to conduct free conversations around and to know more about the field, the company, their working hours, what a pasta factory is like, potential conflicts, and had access to data.

Phase 1 – Research diary and observations.

Research Phase 1 as described below was decided in conjunction with the Human Resource Department that allowed the researcher to be part of the factory daily life, plus keeping a journal diary of every observation held at its premises. The diary was written after each visit and had personal names on it. The researcher was relatively free at the premises after having received safety instructions and received a safety training course. Therefore, the researcher had to wear all the protective clothes and appeals, besides following the factory rules just like any of them. The workers themselves took the researcher all around the company and were proud to show how each thing worked there. They did not feel intimidated, much to the opposite, they felt confident and supportive to the researcher. They were also eager to make the researcher experience what working there was like. They made the

researcher experience the different working shifts, places, machines, responsibilities, and all different sets of works that they had to conduct.

The aim of this research phase was to comprehend how time and work related to each within the company's daily life. Forty visits were made to the factory during a period of three months. The researcher would arrive there, put on the necessary garments, observe, and talk to them spontaneously. The topic of the research was often talked about as there was a mutual interest in the field. The average duration of each visit was around four hours, plus one or two of writing the research diary. After each visit, the researcher had a desk and a table to write down the notes The researcher sometimes had lunch with them at the industry refectory. During the visits, the researcher participated in various activities and accompanied the practices of the workers. At the same time, the field diary made it possible to observe these workers, to listen to them, and sometimes, even to question them while they were performing their working tasks.

This research phase provided real-time insights in the processes, feelings and relations between time and work. It was also crucial to develop and trustworthy relationship all throughout the three research phases. Thus, the workers could trust the researcher to open up and speak up their truths. Consequently, the Field Diary worked out the possibility of bringing the contexts and situations in which these topics arise in the routine of the company.

Two important aspects were particularly notable topics were very frequent during this phase: a) time management, and b) time conflicts that were present within their working schemes.

A) Time management is "a form of decision making used by individuals to structure, protect, adapt their time to changing conditions" (Zucas & David 2012). Time management has three components: structuring, protecting, adapting. Well-established time management measures reflect these concepts. Structuring time means how daily routines are organized according to working time conditions, how each individual would have their life organization structured by working time. The protective factor is related to how their personal life would be impacted by work, and whether their personal life could be protected from too much work, work stress, and other job related issues. Adapting means how each person adapts oneself to these schemes and uses time in a timely way to coping and managing multiple activities.

It also relates in using time wisely, and making the best out of working schemes. The Field diary reports a variety of situations towards time management, 1) employees using their bathroom time to take some rest and pause, 2) employees using smoking time as a break from productive time, 3) employees who reported a conditionality to productive time that when out of the industry, there is anxiety for not having anything to do, 4) difficult in work and personal life agenda if partners had different working shifts, they would rarely see each other, 5) desire to have more time to develop themselves through courses, 6) the production as the leading factor to everything that happened in the factory, 7) the pursue of meaningful activities apart from work. Their incredible time management skills consisted of imperative ways of trying to balance work and life, which they accomplished in a variety of ways to both adapt, avoid suffering, and create meaningful experiences. A key factor in their wellness and motivation was reported when the company provided some leisure time for them, either as company's lunch get-together with the whole factory, barbecue time at a restaurant including invitation to family, or soccer competitions. These were reverenced as imperative for their self-growth, feeling of importance, and belonging at the factory and also as qualitative time which had the participation and integration of the whole factory.

B) Time conflicts at work. One of the main reasons for time conflicts occur when an organization administrates its resources like time, money, materials, in an inadequate way, and impose them to employees. Sometimes, members of organizations compete with one another for these resources, this may lead to conflict among them. The conflicts observed at the pasta factory were not only among individuals, but also among teams. One of the reasons for conflicts was the working shifts and working hour schemes. What happened there was that employees always found that their counterparts were privileged in some way according to their working hours, and felt victims of the working schemes. The morning shift complained about the night shift workers who had no supervisors and seemed to have to work less than themselves, but earned more as there was an additional payment for the evening shifts. The evening shifts complained that the afternoon workers always left over work targets for them to

> complete as claiming that they did not have enough time to manage that. The administrative employees complained that they worked all day long, whereas the productive sector, working in the three shift division would have a period of day time free, in which they could do lots of personal things during this free time, including courses, gym, and so on. All of them envied the sales team, which had flexible working hours, and could drive by the factory with the company's car, besides having more time management and flexibility at their outreach. Meanwhile, the other workers felt they were stuck at the factory. The sales team complained that they did not receive enough recognition as everything else in the production and administrative area depended on them. Besides that, they complained a lot about not having any fixed routine, being called out any time by clients, and on top of all that, having to achieve the sales goal, which made them stressed the majority of the time, and having to work extra hours without any additional.

Therefore, it was precisely the Field Diary in Phase 1 that showed a path of conversations, disputes, conflicts, procedures, feelings, regrets much deeper that the external working time shifts that are attached to any working contract. The multiple relations within each individual, their team, the company and their social life provided a network of meanings, artifacts and schemes that aimed not only being productive at work, but not succumbing to it. The company leisure time sponsored by the company offered a possibility of uniting this diversity in one ground, they were people before being employees.

Phase 2 – Survey about Work and Time with the Sales Team

Phase 2 of the research came as the company demanded the researcher to analyse deeper the time and working scheme of the sales team. It was a challenging demand quite aligned with the vision that the majority of the employees developed upon the sales team. As they had flexible working hours, therefore, they were thought to enjoy doing nothing more frequently, they were thought to have more autonomy, and being relieved from working time stress.

The researcher agreed to the challenge as part of the research also involved getting to know more about flexible working hours schemes, and whereas that would provide a better and healthier scheme for

workers. The overall assumption was that the sellers, because they did not have any working time control card, they could possibly rely on more flexible time schemes, they could be freer and enjoy a better life. The company also wanted to know if they could provide a better working scheme for the sales team. This was, a Time Survey Questionnaire was elaborated with 30 questions containing both multiple-choice and open questions. The questions were elaborated based on what the researcher had previously known about the context of their work. This survey was applied to thirty salespeople of the company in a presential format during one of the sales team reunion.

The survey objective was to know how they organized their working time both at work and outside work. The first part of the Time Survey addressed personal data i.e. gender, age, marital status, period in the company, function, school background. The second part dealt with the average daily time occupied to perform their tasks at work. Factors that influenced the organization of their work, such as the working hours, shift allocation, free time in the organization, schedule preferences, autonomy, responsibility, leisure time were also considered. Finally, there were open sentences to be completed. For example, The phrase I hear and talk about the time the most is...; Time for me is...; If I could have more time, I would like to...; For me, personal time is for..., among others. The researcher tabulated all the answers both qualitative and quantitative. The results were organized and presented to them in their next meeting reunion.

The results showed that sales group did not even have enough time to accomplish their target sales goals. They had to take all the orders for their region, they had to work extra hours as clients were always demanding attention, complaining about delayed deliveries or taking from their time to bargain for prices or product placements that were much related to the market team, but as they were the ones that the buyers had direct access to, they were used as the main communication drives towards the company. Besides that, they had to visit clients on regular basis, at least once a month. If they did not visit they clients, they would usually complain to the company. Visiting clients took a lot from their time, but they did not know how to handle that as the small business owners wanted to engage with them in daily conversations and they believed that was part of the sale process.

They also explained that selling is all about keeping up with this relationship so they would have the trust of the buyer that would keep

buying their products. They needed to trust the whole fabrication process and delivery schemes of the company because if anything wrong happened, the business owner would simply call them and ask them to solve the situation. Apart from that, their sales goals were regarded as 'astronomical' and almost inhumane. Even so, they worked at their best to reach that. They believed that the flexible hours were due to their inherent activity as they had to be out visiting clients. They also said that outside workers deal with a variety of phenomena that is not always under their control, for instance, from roads strikes to problems in a delivery batch, and all of that only made their work more stressful. This stress that advanced any personal working hour, like weekends, extra hours, and so on, they had painfully learned to detach from in order to survive and keep an eye on the sale target. There were also complaints that they could not do any courses or invest in themselves because there were so many unpredictable vectors that they could not attain to other commitments apart from family at least.

They also regarded that sales people are born that way, they life out of office practices, they do not like to being imprisoned in offices, but they regard themselves as working longer hours and a deep commitment to selling as a life-term goal.

Phase 2 lasted around three months. The researcher continued visiting factory and worked out a Phase 3 part of the research.

Phase 3 - Interviews with workers who had flexible x fixed working hours

A small fraction of workers were selected to participate in a random interview with eight (8) workers who had fixed working hours and eight (8) who had flexible working hours. These were private and individually held interviews, conducted at the researcher office inside the factory. The division of these two groups arose from the previous experience in Phase 1 and 2. There was a call announced at the factory and whoever wanted to participate was accepted and once the number had been filled, the call for interviews was closed.

The interview was composed by open questions about time, work, and subjectivity. At the beginning of each interview, there was an introduction explaining the objective of comprehending time, work and personal life, the anonymous data, the future use of the material and their access to that. As the researcher had been already in the company

for around six months in the previous phases, there was already a mutual trust and confidence on the research procedure.

In a second moment, specific working questions about fixed or flexible working hours were developed. Together with it, it was inquired about their working time preferences and their justifications for certain schemes. Their concern on working time x time for themselves was addressed; the use or not of clock and alarm clock was also part of the discussion. Differences in work rhythms; distance from home to work and vice-versa; time in and out of the workplace; concern about past, present or future; irreversibility of time; quotes and tips were and their tips for companies on working time and health living.

The result was an interview that resembled an informal conversation between researcher and worker about time and work, but with a script of indirect question to cover. All the interviews were recorded and transcribed. After that, they were handed out to the interviewers to check if they agreed to everything they had said. It was easy to build a dialogue with each worker, constituting what Pidgeon, Henwood (1996:89) called “conversation-interview." They also told researchers should use the interview more as a conversation than as a controlled, monitored, and measured experiment.

The interview analysis used content analysis based on work frames that concentrated the most frequent topics addressed in the interviews. Some of the outsaid sentences were very deep and involved reflexive and critical thinking. For instance, “Someone who works, I think is a slave, a modern slave, because look, you dedicate the best years of your life working,” Worker interviewed. “When you're in the car, you're walking and there is a a radio that beeps all the time. Amazing! Because it conditions you too much the things: hours and hours and hours, understand?” Interviewed worker.

“I think anyone should use time with what one’s like, that life is short, enjoy time well because it moves a lot fast, huh? I think life is too short, it's brief, right, it's a very brief existence, we do not know it well… If someone collapses, if anything happens, I think to know if that person has enjoyed life is a relief. People have to enjoy time and live well. People should not fail, but grow with culture, spiritually, professionally, enjoy life well even,” interviewed worker.

The main topics that arised were: need for personal time, being subjective to working time, difficulty in keeping up with other

meaningful activities due to working time constraints, the capacity to reflect on life long-term time and existence.

Phase 3 lasted another three (3) months and the final months were entirely dedicated to the writing of the full research.

Final results

Many factors were noted during the comparison of data collection. It was observed that, because the production sector could not stop working ever, as they were the motors of the company, workers were scheduled in shifts to keep the industrial plant in continuous progress and production. It was exactly 24/7 production time.

This pointed to the fact that the organization of time and pace at work was created in accord to the production, delivery, and sales needs. This way, workers generally did not question the schedules or work regimes set by the company, but adapted their lives and activities accordingly.

Furthermore, some workers used the time left to rest, take care of the house, children, go to the doctor and basic survival skills and getting ready to be back to work the next day. On the other hand, workers who followed traditional business hours complained about their lack of time to conduct activities during the week (such as going to the bank, paying bills, shopping, among others). It is noteworthy that the commerce of that place followed the same business hours, and this made it impossible for them to perform these activities outside the working hours. Sometimes, they would have to use their lunch time to solve a problem.

However, production workers from one of the morning, afternoon, or night shifts did not complain much about this aspect as their working hours left a free period that could be used to carry on banking, shopping, taking children to school, picking them up, or any other. It is interesting to note that the criteria used by workers to assess working hours as being good or not are the activities performed apart from work. It is the life that occurs out of work that gives meaning to life.

The use of a working time control card (nowadays digital in most places) by workers who had fixed working hours, especially in the production sector, is a mean for the company to have full control of employees, and remunerate them accordingly. Besides that, as the food machines do not ever stop the production, almost no lateness is tolerated. Time control is rigid and a priority for these workers.

Absences and delays can hinder the pace of production, causing losses for the factory (justification given by the company), and therefore, were not tolerated. Gregg (2015) explains that this is the actual way of getting things done, keeping oneself productively and self-manage time.

Absences and delays were also used as criteria to evaluate the employees. Good employees do not miss or delay. Some workers reported in the interview that they were proud for never being late for any working day even after years working there. Fixed working hours workers also reported that they never missed any working day and would set any appointment for their free days. There was a sense of pride in being so committed and available to the company, but this did not only came from alienation, it also came from a sense of purpose to fabricating food in large scale. “When someone eats this spaghetti, it is because of my work.”

Workers allocated in management positions or high level managers were obliged to use any time control card. Following flexible working hours contracts, as their activities were more tied to the fulfilment of their tasks, there were other factors that were more relevant, like deadlines and performance. They were freer from the cards but much more attached to the overall results of the company. In addition, they did not receive overtime payments for extra hours, but could be called out any time to solve any of the company’s problems and issues. This extra hours would involve from installing a new billionaire pasta machine to sorting out a power blackout at the unit, they also regarded themselves as deeply attached to their work with no time to really relax (for similar results, see Brett & Stroh, 2003).

The sale team were also deeply committed to their performance, not needing to use the working time control cards. However, being stuck by a client on a Saturday evening was all part of their sale team stories. They also tried to find meaning and foundation to such dedication. Although it is part of the seller's function to sell more and to achieve one’s selling quota, the sellers in this team would frequently try to find some sort of deep sense of belonging to self-motivation and carrying on.

This study showed that the “flexible” schedule can be ideologically used within the capitalist context to increase productivity and save the company from paying employees overtime-extra hours. The collected data also indicates that the organization of working time, either as fixed

or flexible, comes from the production needs and company goals rather than any other need or demand in consideration. Also, highly skilled workers had more flexible hours than less skilled ones. The flexibilization of working time in the actual scenario tends to be more like a need of the companies than a desire of workers being attained. If there is one desire of workers being taken into consideration, this would be to work less, have a communal life at work, and more leisure life out from work.

Finally, for workers who use time control cards, and the ones who do not use them, working time continues being defined as a "dead" time, wasted and devoided of meaning. Most of them love when working time “passes really fast” so they do not feel the impact of it, the working time can end faster, and they can finally, go home.

From these reflections, a central theme is common – working time does not belong to the employee, but to production, profit, and the company. This is regarded as “dead time” for the individual.

Conclusion

Productive time and the capitalist logic have been accelerating the work rhythm to its maximum production demand, with a minimum interval for meals, bathroom, breaks, socializing. Together with it, comes the insecurity of being unemployment, the infernal time of the "furnace" that makes workers feel sick and thirsty (as there was a place in the factory that was extremely hot), working hours control cards, insomnia for the fear of losing the time to wake up and get to work, the awareness that flexible working hours means that the company does not have to pay extra hours, the feeling of being a modern slave, a revolted time, just as workers push or scrub noodles into the furnace to have fewer noodles to pack, among other tactics.

Nevertheless, not everything is dead or lost. There were times that workers associated with a great expression of their subjectivity, like the time of the bathroom, when workers rested and talked while sitting on the factory floor, or when the flour production employees took a nap after their lunch lying on cardboard board boxes on a corner of the factory floor, or the hidden time while in the bathroom or drinking water.

There was also a highly estimated time for pregnancy, in which any pregnant worker would be transferred to a quieter sector, with a slower

production pace, being able to sit and rest in the air conditioner. These schemes showed that workers were constantly finding a way to resist the factory time and finding some life for themselves.

It is noteworthy that, the company's time x the workers' time do not exist as two isolated fields, but as conflicts, conjunctions, as shared pain, and daily insights. For each type of work context, a specific narrative of time logic showed up with its advantages and disadvantages. In the intersection of organizational time x individual time, there seemed to be a preference for faster working rhythms because this gave the impression that time was passing faster, soon enough – "it would be time to go home."

The Field Diary (phase 1) provided the context in which questions about time and work emerged in the pasta factory. Phase 2 brought the Time Survey with examples, data, and sayings that illustrated the meanings of time and work for the sales group team (flexible working hours). The interviews (Phase 3) made it possible to compare the two groups of workers (fixed and flexible hours) and to point out how time and activity were correlated in the productive schemes. In sum, how each group created measures to survive.

Finally, time and meanings are created in the intersection of each other, based upon the worker's life, relationships and employment history.

Grounded Theory helped to bring to light the interactive dynamics of time and work. The adoption of various approaches and multiple techniques for the data collection, analysis, and comphenesion was extremely helpful in capturing this process, but the empathy and ethical relation with the whole of the pasta factory was pivotal to producing data that portrayed these challenges.

Nevertheless, we can say that the meaning of working time is relative, dynamic, historical, political. It cannot be dissociated from its production. This may be one of the challenges of the actual contemporary society - some people with too much time, others with so little time – but everyone in search of making their time meaningful. "People live a lot due to work, right? They end up not having time, mainly, to live," the interviewed worker allerted.

If this is a reality no one can escape, at least, more time to live must be created. Balanced schemes between working hours and non-working ones should consistently drive equal *work policy making* to everyone.

As the proof that excessive working time can make ill, (Spurgeon, Harrington, Cooper, 1997; Virtanen, Ferrie, Gimeno, et al 2009; Amagasa, Nakayama, 2013), it would be mister to wonder where the world is heading to - with all the flexibility of remote working post-covid…

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CHAPTER 2

FRAGILE CURRENCY, FRAGILE ECONOMIES AND RATED TRIPLET DEFICITS INDEX (r-TDI)

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Introduction

The concept of the "fragile five", which was first introduced by the experts of the US investment bank Morgan Stanley in 2013, was seen as remarkable by economists and many new studies were conducted on this subject. Although it is thought to express macroeconomic fragility, this concept expresses fragility as the risk value of the national currency against the reserve currencies, especially the US dollar. The basis of this risk is the need for international capital. Although Turkiye (lira), India (rupee), Indonesia (rupee), Brazil (real) and the Republic of South Africa (rand) are remembered as the five most fragile national currencies as they were first introduced in 2013, the members of this five are changed and updated from time to time. However, Turkiye is seen as the most loyal member of this group. For a long time, macroeconomic variables such as the current account balance, domestic and foreign debt stock, foreign exchange reserves and real interest rates continue to be perceived as risky (Uygur, 2022). Turkiye's CDS risk premium value, which has almost never fallen below 300 basis points, which can be considered risky since 2018 and is considered the upper limit for extreme vulnerability, broke the all-time record in July 2022 and reached 885 basis points, and it fluctuates around 600 levels today (Investing, 2023).

Unlike fragile currencies, there is also a fragile state index (FSI), which has been calculated regularly since 2006 in order to measure the fragility of countries. The worst performing countries can be reported thanks to this index (Broom, 2019). This index evaluates many factors such as security, social discrimination problems, macroeconomic indicators, income inequality, brain drain, legitimacy of governments, quality of public services, human rights and freedoms, statistics on asylum seekers, refugees and internally displaced persons,

demographic policies and external interventions externally. Although it includes different definitions and procedures, the FSI index also includes the concepts of fragile currency highly (FSI, 2023).

As stated in the subtitles of the FSI index, there are many factors affecting fragility. Fragility is like being sensitive to harmful microorganisms and vulnerable to diseases because the immune system of an individual who is normally thought to be healthy is not sufficiently developed or does not benefit from preventive health practices such as vaccines at the required level. The absence of necessary structural reforms in many different areas such as education, health, law and agriculture, which are the absolute functions of the country, paves the way for crises in the long run, but causes the crises, which are exposed under the influence of external shocks, to be longer, deeper and more destructive, although they can be mildly overcome. As a result of this, while countries become more vulnerable to external shocks, they are directly affected by all kinds of policies of developed economies, unexpected natural and artificial crises and international legal or political disputes. These explanations show that fragility is an extremely dangerous and important phenomenon that should be taken into account due to its high risk.

Although the exact and clear reasons for the scale of fragility cannot be stated, many factors that cause the fragility of national currencies or the fragility of the country's economies in general can be listed. For this purpose, it is possible to count many macroeconomic variables such as inflation, unemployment, exchange rate, interest rate, foreign exchange reserves, current account balance, domestic and foreign debts, foreign trade balance, economic growth, savings rates and budget balance (Çan ve Dinçsoy, 2016: 202). The current account balance, which is included in these variables, directly or indirectly affects all other variables and after a certain period of time.

Therefore, the current account balance variable, which also includes the foreign trade balance, is a very important risk factor. Although there is no clear distinction, it is possible to classify to fragilties as external fragility, fiscal fragility and financial fragility. The current account balance is one of the most important external fragility factors (Özyıldız, 2014). The share of the current account balance (CAB) in GDP paves the way for making an interpretation proportional to the size of the country. The share of current account balance in GDP does not make a sufficient sense on its own due to the fact that two

countries with the same current account balance/GDP ratio do not finance the current account under the same financing conditions. In this respect, it is thought that the rated triplet deficit index (r-TDI) proposed by Akçayır (2022) can be evaluated as a clearer fragility indicator.

Some indices are used to determine the leading indicators of countries regarding financial and economic crises or to increase the foresight capacity of sustainability. There are many different types of indices in the literature, such as the foreign exchange market turbulence index created by Kaminsky and Reinhart(1999), the banking sector fragility index developed by Kibritçioğlu (2003), and the extreme risk index developed by Ural & Balaylar (2007).

Considering the indices that take into account the current account deficit or triple deficit, Triple Deficit Pressure Index (TPI) developed by Akkaya (2022) based on the speculative pressure index developed by Eichengreen et al. (1996) is a new study. Finally, the rated triplet deficit index (r-TDI), which is based on a logic similar to the magic square diagram used by OECD (1987), which was first put forward by Akçayır (2022) is a new, different and unique index type.

Method

In the study, after the theoretical explanation of the r-TDI index calculation method, this index is compared with other data such as CDS risk premium, sovereign credit ratings and country fragility index in terms of fragile economies. 11 countries described as fragile, pronounced at different times by Morgan Stanley and Standard & Poor's, were discussed and interpreted.

Triple Deficit Index

The concept of triple deficit was introduced with the addition of savings deficit to the concept of twin deficits, which was named with reference to budget deficits and current account deficits, which was put forward in the 1980s. In its simplest terms, the triple deficit hypothesis is that the sum of the budget balance and savings balance representing the domestic balance in a country should equal the current account balance representing the external balance. A triple deficit occurs because all three balance are negative. It considers the triple deficit

phenomenon, which is based on the assumption that internal imbalances will eventually create an external imbalance, as an important macroeconomic problem. Despite the lack of savings and budget deficit, triple deficits, which are created by current account deficits due to the demand for foreign capital needed due to the desire for growth, are often seen in developing countries, especially in Turkiye (İnançlı & Torusdağ: 2021, 300-303).

The amount of foreign currency entering a country with any transaction that earns foreign currency and the amount of foreign currency leaving the country with any transaction that loses foreign currency are equal to each other. When considered as an accounting transaction, the internal balance equals the external balance (Karahan, 2021: 537). (Eq. 1)

***S**: Private Savings* ***I**: Private Investment*
***T**: Direct Tax Revenues* ***G**: Public Expenditures*
***M**: Import* ***X**: Export*
***TR**: Transfers*

$$\underbrace{S + T + M}_{leaks} = \underbrace{I + G + X + TR}_{injections} \qquad \text{(Eq.1)}$$

When the adjustments specified in Eq. 2 are made, it is expected that the sum of the savings balance and the budget balance will give the current account balance.

$$\underbrace{\underbrace{(S - I)}_{\substack{Private\ Saving\ Balance \\ (\tau^{\pm})}} + \underbrace{(T - G)}_{\substack{Budget\ Balance \\ (\lambda^{\pm})}}}_{\textbf{internal balance}} = \underbrace{(X - M + TR)}_{\substack{Current\ Account\ Balance \\ (\mu^{\pm})}} \qquad \text{(Eq. 2)}$$

$$(\tau^{\pm}) + (\lambda^{\pm}) = \mu^{\pm} \qquad \text{(Eq. 3)}$$

The theoretical framework of the model expressed with equations can be summarized as follows. The deficit that arises because the central government's budget revenues cannot be stuck for the budget expenditures for any reason is financed by borrowing through a number

of internal or external borrowing channels or by emission (creating money).

While domestic borrowing creates a negative pressure on the real sector with its crowding out effect, it deteriorates the foreign trade balance. When external borrowing is resorted to due to the inadequacy of savings rates, it decreases the value of the national currency through the exchange rate channel. Although the decrease in the national currency positively affects the foreign trade balance in the long run through the export channel, it negatively affects the reverse dollarization process due to the increasing foreign exchange demand. As a result of borrowing, debt payments that are due are financed with new debts and spread over the long term by bearing the interest burden and growing. If the emission route is chosen, the debt is financed by seigniorage income and inflation tax. As a result, the value of the national currency decreases rapidly and the demand for foreign exchange increases. The external balance is also adversely affected by this situation. In order to finance the foreign exchange deficit, the country's interest and external debt burden payments increase, eventually causing the current account balance to deteriorate towards the deficit. In summary, public deficits have significant effects on many macroeconomic variables, especially the current account balance.

Although it is said that twin deficits are a chronic problem of developing countries, when we look at the first quarter of the 21st century, it is seen that even the most developed countries of the world have twin deficits. Because this situation is taken for granted and accepted as a sustainable situation. However, triple deficits have become a much more important problem to be dealt with, especially for developing countries. For countries with savings deficits in addition to budget deficits, current account deficits are gradually moving away from sustainability and become more vulnerable in terms of fragility.

Rated Triple Deficit Index

Although it is known that the current account deficits, which are accounted for as an economic flow variable, are somehow financed, it is seen that the savings balance is the basis of a sustainable current account balance. If savings rates are insufficient, it is financed through

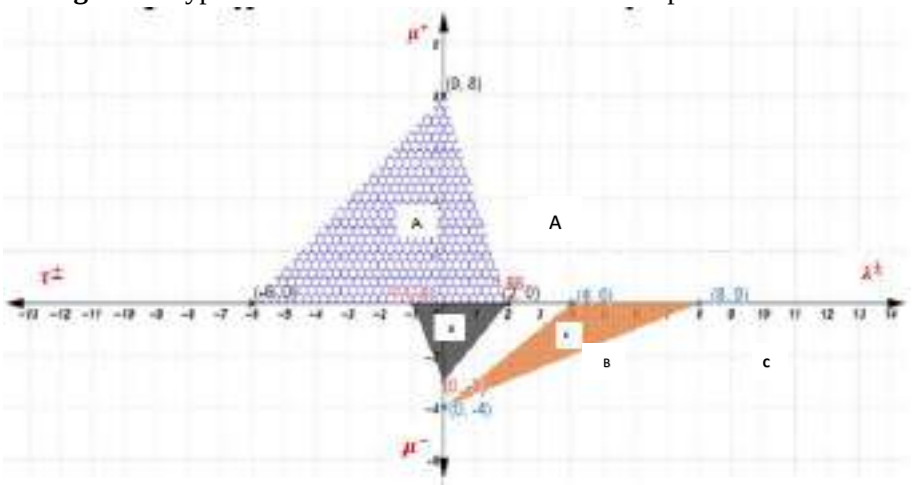
borrowing (Eğilmez, 2019). Although countries such as Venezuela, China, Japan, Italy, Spain, Belgium and Israel have budget deficits, they run current account surpluses due to the high savings rate. On the other hand, countries such as the USA, Brazil, Indonesia, India, Argentina and South Africa finance a significant part of their high budget deficits with savings surpluses and run a smaller and more sustainable current account deficit. But countries such as Turkiye, Colombia, New Zealand, Kyrgyzstan and Mongolia have to finance their current account deficits by borrowing by adding savings deficits to their budget deficits. Considering the share of current account balance in GDP, an important result emerges for the reasons mentioned above. Another situation that is as important as the value of the current account balance is the current account deficit, which deficit it brings, and the level of financing quality of savings rates, especially in terms of sustainability. Therefore, the r-TDI approach is important.

The main purpose of creating the index is to determine the types of current account imbalances of countries and to offer solutions suitable for the relevant imbalance by making comparisons in terms of countries. For this purpose, on the horizontal axis the share of budget balance in GDP($\lambda^{\pm}$) and the share of savings balances in GDP ($\tau^{\pm}$) are located, on the vertical axis, the coordinate plane in which the share of current account balance in GDP ($\mu^{\pm}$) is located. The area of the triangle obtained by the combination of three points, two of the relevant imbalance points on the horizontal axis representing the internal balance, and one current imbalance point on the vertical axis representing the external balance, is expressed as the triple deficit index (TDI).

The value of $\lambda^{\pm}$ is on the right of the horizontal axis when it gives a budget deficit (λ^{-}) and on the left of the horizontal axis when it gives a budget surplus (λ^{+}) ; The value of $\tau^{\pm}$ is located to the left of the horizontal axis when it gives a saving gap (τ^{-}) and to the right of the horizontal axis when it gives a surplus of savings (τ^{+}). $\mu^{\pm}$ is above the vertical axis when it is positive and below the vertical axis when it is negative. While the area of the triangle obtained by the join of the mentioned three points constitutes the TDI index value, the region in which it is located represents the type of current account imbalance.

In Figure 1, three different types of current imbalances are given with samples A, B and C, and how their TDI index is calculated is explained with the help of equations (4) and (5).

Figure 1. Types of Current Imbalance Related to Triple Deficit Index



Source: Figure 1 was created by researcher with randomly selected data.

$$\text{TDI}_{\text{endeks}} = \frac{1}{2} \cdot |(\tau^{\pm}) + (\lambda^{\pm})| . \mu^{\pm} = \frac{(\boldsymbol{\mu}^{\pm})^{\mathbf{2}}}{\mathbf{2}} \qquad \text{(Eq. 4)}$$

As explained in equation (3) whether $(\tau^{\pm}) + (\lambda^{\pm}) = \mu^{\pm}$, Although the index value is negative in current account deficit and positive in current account surplus, it is equal to $\frac{(\mu^{\pm})^{2}}{2}$ in absolute value. (Eq. 5)

$$TDI_{index} = \begin{cases} \left(-\frac{1}{2} \cdot |(\tau^{\pm}) + (\lambda^{\pm})| . \mu^{\pm}\right) = -\frac{(\boldsymbol{\mu}^{\pm})^{\mathbf{2}}}{\mathbf{2}}, & \mu^{\pm} < 0 \\ 0, & \mu^{\pm} = 0 \\ \left(\frac{1}{2} \cdot |(\tau^{\pm}) + (\lambda^{\pm})| . \mu^{\pm}\right) = +\frac{(\boldsymbol{\mu}^{\pm})^{\mathbf{2}}}{\mathbf{2}}, & \mu^{\pm} > 0 \end{cases} \qquad \text{(Eq.5)}$$

The index calculation of country A with a current account surplus is as follows. Realized as share of current account balance in GDP +%8 ($\mu^{+} = +\mathbf{8}$), the share of budget balance in GDP %6 ($\lambda^{+} = +\mathbf{6}$) and share of savings balance in GDP +% 2 ($\tau^{+} = \mathbf{2}$). In this case, the index is calculated as +32.

$$TDI_A=\left(\frac{1}{2}.|(+2)+(+6)|.8\right)=+32$$

The index calculation of country B, which has a current account deficit, is as follows. Realized as share of current account balance in GDP -%3 ($\mu^- = -\mathbf{3}$), the share of budget balance in GDP -%2 ($\lambda^- = -\mathbf{2}$) and share of savings balance in GDP -% 1 ($\tau^- = -\mathbf{1}$). In this case, the index is calculated as -4,5.

$$TDI_B=\left(-\frac{1}{2}.|(-1)+(-2)|.3\right)=-4{,}5$$

The index calculation of country C, which has a current account deficit, is as follows. Realized as share of current account balance in GDP -%4 ($\mu^- = -\mathbf{4}$), the share of budget balance in GDP -%8 ($\lambda^- = -\mathbf{8}$) and share of savings balance in GDP +% 4 ($\tau^+ = +\mathbf{4}$).). In this case, the index is calculated as -8.

$$TDI_C=\left(-\frac{1}{2}.|(-4)+(+8)|.4\right)=-8$$

As seen in the examples, even if the two countries have a current account deficit at the same level, the triangles subject to the TDI index are not in the same region. From this point of view, there can be a maximum of six different types of triangles in total. (Eq. 6)

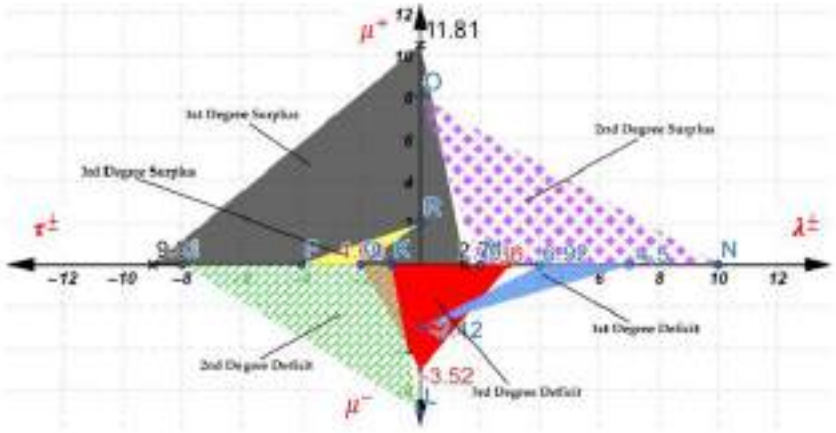
- The country may have a current account deficit because it has both a savings deficit and a budget deficit.
- Despite the country's saving surplus, it may run a current account deficit due to its higher budget deficit.
- Despite the country's budget surplus, it may run a current account deficit due to its higher savings deficit.
- Despite the country's budget deficit, it may run a current account surplus due to higher domestic savings surplus.

- Although the country has a savings deficit, it has a current account surplus due to the budget surplus.
- The country may have a current account surplus because it has both a savings surplus and a budget surplus.

$$TDI^{\pm}_{derece} = \begin{cases} \mu_3^-, & \mu^{\pm} < 0, \ \tau^{\pm} < 0, \ \lambda^{\pm} < 0 \\ \mu_2^-, & \mu^{\pm} < 0, \ \tau^{\pm} < 0, \ \lambda^{\pm} > 0 \\ \mu_1^-, & \mu^{\pm} < 0, \ \tau^{\pm} > 0, \ \lambda^{\pm} < 0 \\ \mu_3^+, & \mu^{\pm} > 0, \ \tau^{\pm} < 0, \ \lambda^{\pm} > 0 \\ \mu_2^+, & \mu^{\pm} > 0, \ \tau^{\pm} > 0, \ \lambda^{\pm} < 0 \\ \mu_1^+, & \mu^{\pm} > 0, \ \tau^{\pm} > 0, \ \lambda^{\pm} > 0 \end{cases} \quad \text{(Eq. 6)}$$

Six representative country examples representing the six types of current account imbalances explained in Equation 6 are shown in figure 2 on a single coordinate plane for comparison. Index sizes are arbitrarily determined in terms of visual clarity.

Figure 2. Six Types of Current Account Balance and Rated Triple Deficit Index



Source: Figure 2 was created by researcher with randomly selected data.

Considering the averages of the last 10 years (2013-2022), the categories of some selected countries are as follows:

- **Countries with a 3rd degree current account deficit (μ_3^-):** Turkiye, New Zelland, Mongolia, Moldova, Mauritania, Georgia, Kyrgyzstan, Senegal, Tanzania, Colombia, Peru
- **Countries with a 2nd degree current account deficit (μ_2^-) :** Chad, Belarus
- **Countries with a 1st degree current account deficit (μ_1^-) :** Brasil, Indonesia, Argentina, United States of America, United Kingdom, France, Canada, Australia, Chile, Uruguay, Finland, Greece, Jordan, Cambodia, South Africa, Bolivia, Nigeria, Kazakhstan, India
- **Countries with a 3rd degree current account surplus (μ_3^+) :** Norway (2012, 2013), Iceland (2016), Czechsia (2018), Bulgaria (2019)
- **Countries with a 2nd degree current account surplus (μ_2^+) :** Venezuella, Malaysia, Russia, Sweden, China, Japan, Spain, Germany, Italy, South Korea, Netherlands, Cuba, Austria, Belgium, Bulgaria, Croatia, Czech Republic, Estonia, Euro Area, Iceland, Saudi Arabia, Paraguay, Israel, Thailand, Papua New Guinea, Philippines, Taiwan
- **Countries with a 1st degree current account surplus (μ_1^+) :** Denmark, Switzerland, United Arab Emirates, Norway, Luxembourg

The 3rd degree current account surplus (μ_3^+) is a very exceptional situation, it has been seen in very few countries only for some years, but there is no example that spreads over many years. Because it is not very common to financing the savings deficit in the country with a budget surplus. Especially in the last few decades, most of the countries have been running a budget deficit, albeit a small one.

Findings And Discussion

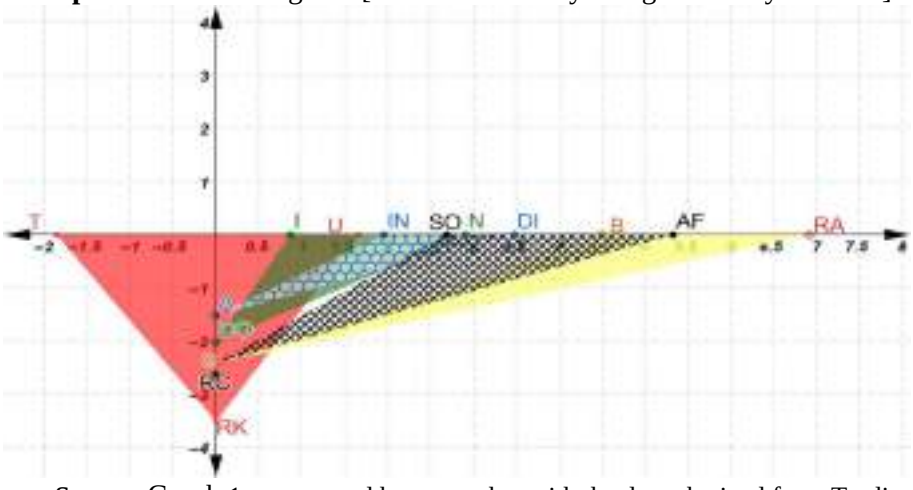
In this part of the study, the situation of fragile economies according to the r-TDI index is discussed and whether the index adequately represents vulnerability is evaluated with the help of graphics by comparing it with other variables.

Rated Triple Deficit Index of Fragile Economies

Although there are some hesitations about which countries are fragile economies, especially in recent years, Turkiye is definitely included in every new or different proposed fragile economy group. The geometric appearance of the triangles forming the triple deficit indices obtained with the averages of the last 10 years (2013-2022) of Turkiye, India, Indonesia, Brazil and the Republic of South Africa as the fragile five, known as it was first introduced in 2013, is shown in Graph 1. According to some economists such as Steve Hanke, Turkiye is the most fragile member of the fragile five due to currency pressure (Evrensel, 2014). According to another recent claim, after Argentina, Turkiye is the most fragile and vulnerable country in against of FED monetary policies. Other vulnerable countries are South Africa, Colombia, Egypt and Brazil (Hanlire, 2022). Although it is not possible to fully confirm these claims, there is not enough information to reject them. The names given to the corner points of the triangles that represent the areas they form and the r-TDI values of the countries are shown as follows.

Turkiye: **A(T,U,RK)** = -6.195 (μ_3^-)	India: **A(IN, DI, A)** =-1.155 (μ_1^-)
Indenesia: **A(I, N, DO)** = -2.066 (μ_1^-)	Brasil: **A(B, RA, S)** = -2.928 (μ_1^-)
South Africa: **A(SO, AF, RC)** = -3.484 (μ_1^-)	

Graph 1. r-TDI of Fragile 5 [Recommended by Morgan Stanley At 2013]



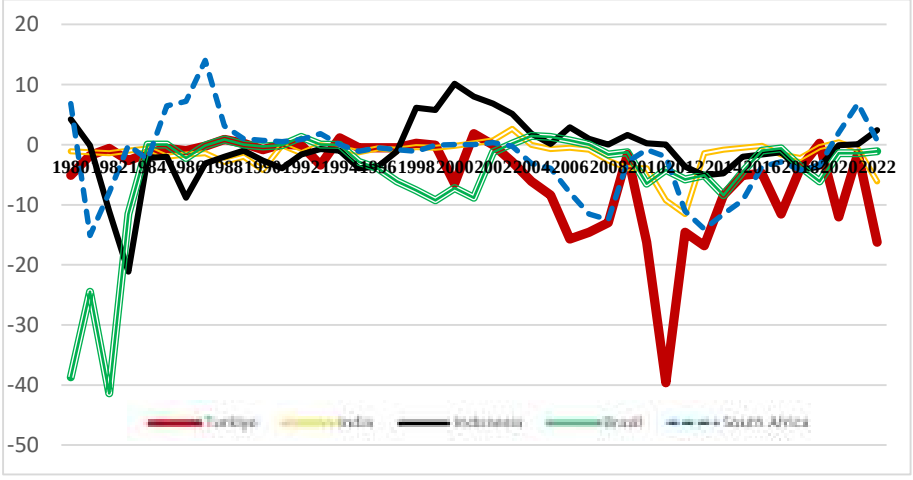
Source: Graph 1 was created by researcher with the data obtained from Trading Economics (2023)

Turkiye is clearly seen diverges negatively, as it is located in the 3rd and 4th regions of the coordinate system (3rd degree current account

deficit (μ_3^-)) and has the highest value in terms of area (1st degree current account deficit (μ_1^-)), as can be seen in Graph 3. This means that while Turkiye's savings deficit increases the current account deficit even more, the savings surplus of the other four countries can partially finance the current account deficit. Due to the foreign exchange deficit that arises as a natural consequence of this situation, there is a pressure on the exchange rate against the national currency. This situation supports the claim that Turkiye is the most fragile of the fragile five.

The triple deficit index values of Turkiye, India, Indonesia, Brazil and the Republic of South Africa for 43 years (1980 – 2022) are shown in Graph 2. According to this graph, it can be said that the index value has clearly diverged in the opposite direction compared to other countries, especially in the last 20 years.

Graph 2. Rated TDI of Fragile 5 For Last 43 Years

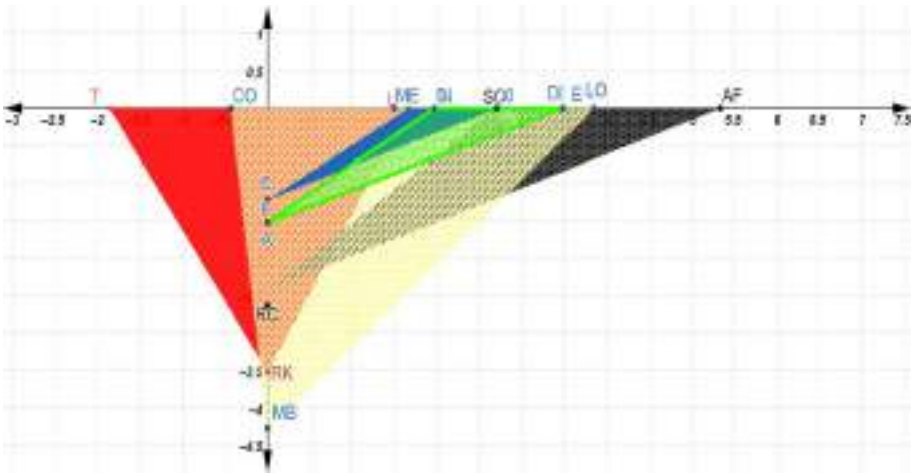


Source: Graph 2 was created by researcher with the data obtained from World Bank (2023)

The geometric views of the triangles that make up the triple open indices are shown in Graph 3. Turkiye, India, South Africa, Colombia and Mexico are considered as the fragile five that remain current today for Morgan Stanley. The names given to the corner points of the triangles that represent the areas they form and the r-TDI values of the countries are shown as follows.

Türkiye: **A(T,U,RK)** = -6.195 (μ_3^-) Hindistan: **A(IN, DI, A)** =-1.155 (μ_1^-)
Kolombiya: **A(CO, LO, MB)** = -9.116 (μ_3^-) Meksika: **A(ME, XI, C)** = -0.744 (μ_1^-)
Güney Afrika Cumhu**riyeti**: **A(SO, AF, RC)** = -3.484 (μ_1^-)

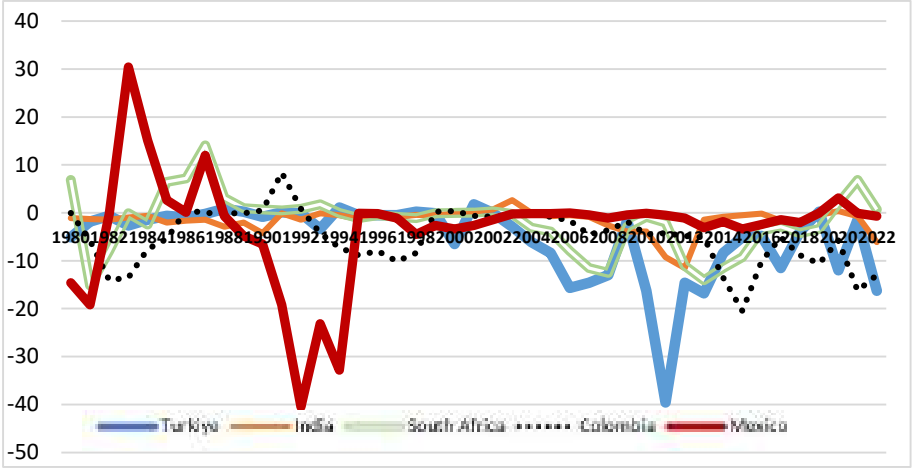
Graph 3: Rated TDI of Fragile 5 [Recommended by Morgan Stanley At 2017]



Source: Graph 3 was created by researcher with the data obtained from Trading Economics (2023)

In the view in Graph 3, it is striking that Colombia creates a 3rd degree current account imbalance [μ_3^-] similar to Turkiye and the area is relatively higher. It is seen that the other three fragile economies have a 1st degree current account deficit [μ_1^-]. When the fragility ranking is evaluated according to these five, Turkiye can be expressed as the second most fragile country after Colombia. The triple deficit index values of Turkiye, India, South Africa, Colombia and Mexico for 43 years (1980 – 2022) are shown in Graph 4. According to this graph, it is seen that Turkiye and Colombia are similar [μ_3^-] to each other, while India, South Africa and Mexico follow a similar [μ_1^-] course, especially based on the index value of the last 20 years. Between 1988 and 1995, Mexico's index values were similar to Turkiye's in the last 20 years, but today it has a relatively more reasonable index value.

Graph 4: Rated TDI of Fragile 5 For Last 43 Years

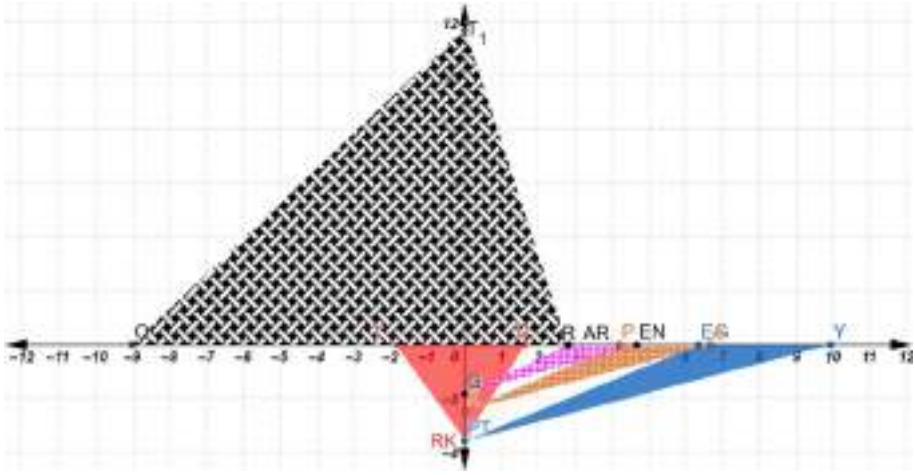


Source: Graph 4 was created by researcher with the data obtained from World Bank (2023)

Finally, for the case that Turkiye, Argentina, Pakistan, Egypt and Qatar are considered as the fragile five put forward by Standard & Poor's in 2017, the geometric views of the triangles that make up the triple open indices are shown in Graph 5. The names given to the corner points of the triangles that represent the areas they form and the r-TDI values of the countries are shown as follows.

Türkiye: **A(T,U,RK)** = -6.195 (μ_3^-)	Katar: **A(Q,T₁,R)** = 69.738 (μ_3^-)
Mısır: **A(EG, Y, PT)** = -6.48 (μ_1^-)	Pakistan: **A(P,A,K)** = -3.051(μ_1^-)
Arjantin: **A(AR, G, EN)** = -1.692 (μ_1^-)	

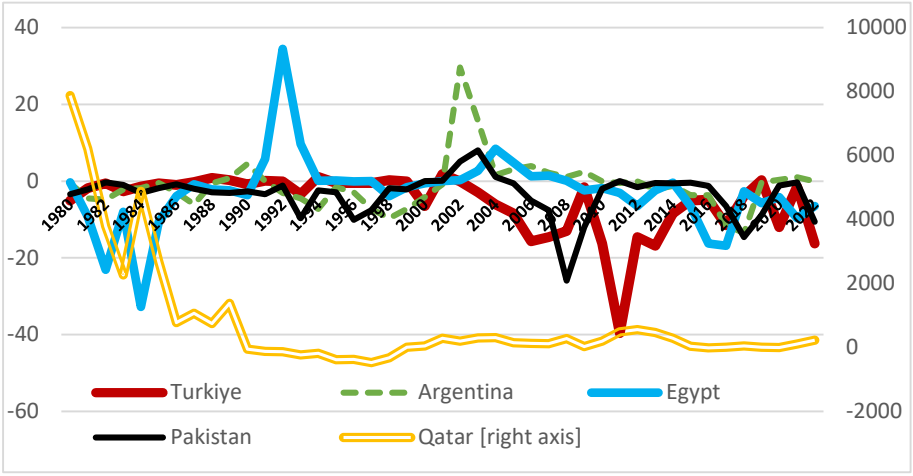
Graph 5. Rated TDI of Fragile 5 [Recommended by Standard&Poors']



Source: Graph 5 was created by researcher with the data obtained from Trading Economics (2023)

The inclusion of Qatar with triple surplus (μ_3^+) in this group is seen to be quite meaningless in terms of the r-TDI index, and it is observed that it clearly differs from the group in a positive way. It would not be wrong to express that the riskiest performance in this group belongs to Turkiye, which has a 3rd degree deficit (μ_3^-), as shown in other graphs. It is seen that the other three countries have a 1st degree current account deficit (μ_1^-). The triple deficit index values for 43 years (1980 – 2022) are shown in Graph 6. According to this graph, it is observed that Turkiye is the only country with a 3rd degree current account deficit, especially based on the index value in the last 20 years, Argentina, Pakistan and Egypt have a 1st degree current account deficit and Qatar mostly has a 3rd degree current account surplus. Considered both in terms of index value and degree, Turkiye is seen as the most fragile country.

Graph 6. Rated TDI of Fragile 5 [Recommended by Standard&Poors'] For Last 43 Years



Source: Graph 6 was created by researcher with the data obtained from World Bank (2023)

In the study, in addition to the "Fragile Five", countries that were claimed to be fragile in different years by Morgan Stanley and Standard & Poor's were also taken into account. In this perspective, 11 fragile countries were determined and studies were carried out. CDS risk premium values, country credit ratings assigned by S&P, budget balance, savings balance and current account balance in GDP share in the index (%), triple deficit index values and current account imbalance types, fragility state index (FSI) values, FSI economy index and FSI rankings among 179 countries are given. for Turkiye, Brasil, Indonesia, India, South Africa, Argentina, Colombia, Egypt, Mexico, Pakistan and Qatar In Table 1. Undoubtedly, all the variables in the table represent sovereign risk, uncertainty or fragility in a distant or near way. Here, it is evaluated whether the r-TDI value shows a parallelism with these risks.

Table 1: Fragile State Index and Rated Triple Deficits Index of Fragile 11 Countries

Code	Country	CDS	S&P Soverign Rating	Budget Balance / GDP (%)	Saving Gap / GDP (%)	Current Account Balance / GDP (%)	Triple Deficits Index & Type	Fragile State Index (FSI)	Fragile State Index (Economy)	Fragile State Index Ranking
				(10 years average)				(15 years average)		
TR	**Turkiye**	349	B	-1.88	-1.88	-5.51	-6.19 [illegible]	77.27	4.97	78
BR	**Brazil**	232	BB-	-6.91	4.5	-2.41	-2.92 [illegible]	67.42	8.09	107
IS	**Indonesia**	96	BBB	-2.91	6.87	-2.033	-2.06 [illegible]	76.99	5.51	77
IN	**India**	86	BBB-	-3.48	1.96	-1.51	-3.15 [illegible]	76.34	5.39	79
SA	**South Africa**	240	BB-	-5.33	2.69	-2.64	-3.48 [illegible]	67.50	5.83	106
AR	**Argentina**	1500	CCC+	-4.08	2.84	-1.84	-1.89 [illegible]	45.95	4.83	141
CO	**Colombia**	232	BB+	-3.83	-3.43	-4.27	-9.13 [illegible]	83.20	4.30	54
EG	**Egypt**	542	B	-9.05	6.35	-3.6	-6.48 [illegible]	81.40	7.45	38
ME	**Mexico**	181	BBB	-2.71	1.49	-1.21	-0.74 [illegible]	72.20	5.27	86
PA	**Pakistan**	387	CCC+	-6.67	4.2	-2.47	-5.05 [illegible]	99.40	6.82	16
QA	**Qatar**	80	AA	2.79	8.61	13.81	89.73 [illegible]	47.65	2.83	141
TR/BR/IS /IN/SA	Fragile 5 (Morgan Stanley 2013)			-4.16	1.67	-2.42	-2.94 [illegible]	73.07	5.95	89
TR/IN/SA/ CO/ME	Fragile 5 (Morgan Stanley 2022)			-3.44	0.81	-2.03	-3.46 [illegible]	75.27	5.16	83
TR/AR/PA/ EG/QA	Fragile 5 (Standard&Poor's 2017)			-4.07	4.14	-0.31	-0.06 [illegible]	71.75	5.38	83
ALL of Them	Fragile 11			-4.14	2.89	-1.44	-3.03 [illegible]	72.93	5.57	83

Source: Table 1 was created by researcher with the data obtained from World Bank (2023), FSI (2023) Trading Economics (2023) , World Government Bonds (2023) Asset Macro (2023)

In Table 1, the datas that directly or indirectly represents the country risk are discussed, and it is observed that the TDI values constitute the ability to represent fragility to a large extent. Since the concepts of the fragility of the national currency and the fragility of the country have different meanings, there is not a complete overlap. The names of the 5 countries with the highest risk level and the most fragile in terms of different categories such as CDS risk premiums, r-TDI, FSI, FSI Economy and FSI Rank are shown in Table 2.

Table 2. The Most Fragile Countries In Terms Of Different Categories

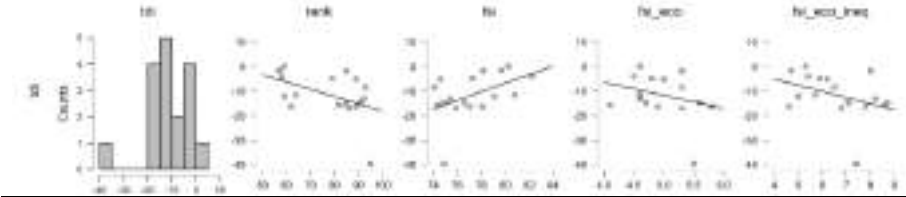
	rTDI		CDS		Rating		FSI		FSI Eco		FSI Rank	
1	Colombia	-9.12 ([illegible])	Argentina	1300	Pakistan	CCC+	Pakistan	89.4	Brazil	8.03	Pakistan	16
2	Turkiye	-6.10 ([illegible])	Turkiye	549	Argentina	CCC+	Egypt	88.4	Egypt	7.45	Egypt	38
3	Egypt	-6.48 ([illegible])	Egypt	542	Turkiye	B	Colombia	83.2	Pakistan	6.82	Colombia	54
4	South Africa	-5.48 ([illegible])	Pakistan	387	Egypt	B	Turkiye	77.2	South Africa	5.85	Indonesia	77
5	Pakistan	-3.05 ([illegible])	South Africa	240	Brazil	BB-	Indonesia	76.9	Indonesia	5.51	Turkiye	78

Source: Table 2 was created by researcher with the data obtained from World Bank (2023), FSI (2023) Trading Economics (2023), World Government Bonds (2023) Asset Macro (2023)

Due to r-TDI index of Turkiye being the 3rd Degree, it is ahead of Egypt in the ranking. While Egypt and Pakistan are in all six fragility categories, Turkiye is among the five most fragile in all five categories, except for one category. South Africa, Colombia and Indonesia are among the five most fragile countries in three categories, Argentina and Brazil in two categories. It is seen that Qatar, India and Mexico are not among the five most fragile economies in any category. Some annual fragility indicators for Turkiye between 2006 and 2022 are discussed in Table 3.

Table 3. Some Fragility Indicators Of Turkiye

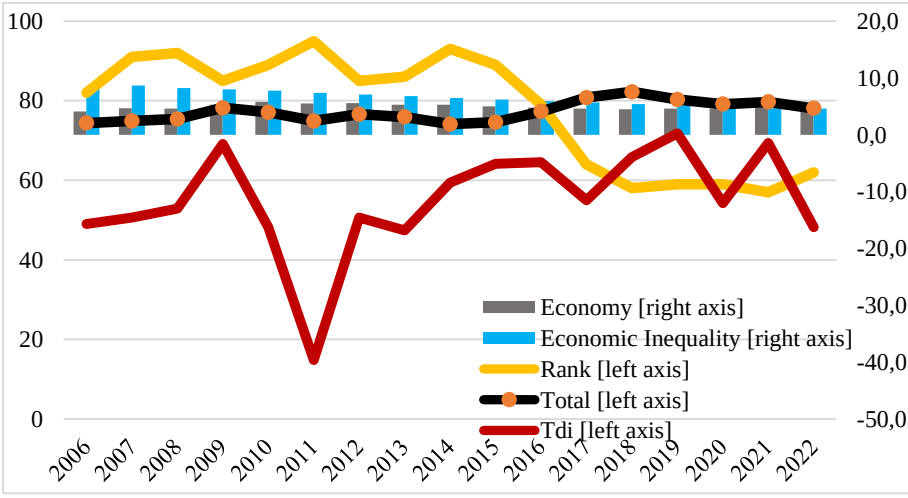
	FSI (Rank in 179)	FSI (Total)	FSI (Economy)	FSI (Economic Inequality)	TDI
2006	82	74.4	4.1	8.6	-15.68
2007	91	74.9	4.7	8.7	-14.58
2008	92	75.4	4.6	8.2	-13.01
2009	85	78.2	5.3	8.0	-1.62
2010	89	77.1	5.8	7.8	-16.24
2011	95	74.9	5.5	7.4	-39.61
2012	85	76.6	5.6	7.1	-14.58
2013	86	75.9	5.3	6.8	-16.82
2014	93	74.1	5.3	6.5	-8.41
2015	89	74.6	5.0	6.2	-5.12
2016	79	77.3	4.8	5.9	-4.81
2017	64	80.8	4.6	5.7	-11.52
2018	58	82.2	4.5	5.4	-3.92
2019	59	80.3	4.6	5.3	0.25
2020	59	79.1	4.6	5.0	-12.01
2021	57	79.7	5.3	4.7	-1.45
2022	62	78.1	4.9	4.6	-16.25

Correlation Plots


Source: Table 3 was created by researcher with the data obtained from World Bank (2023) and FSI (2023)

Considering the table 3 and graph 7 showing the 17-year changes in the fragility indicator values for Turkiye, it is observed that there are significant correlations between the TDI index and other variables. This situation shows that TDI values are an important macroeconomic variable that should be considered as an indicator of fragility.

Graph 7. Fragility Indicators of Turkiye & Triplet Deficit Index



Source: Graph 7 was created by researcher with the data obtained from World Bank (2023) and FSI (2023)

Conclusion

If the risk of macroeconomic variables against external effects comes to mind when it comes to economic fragility, what is meant by the fragile five or fragile economy is the fragility of national currencies against other reserve currencies, especially the US dollar. It is very important to what extent some macroeconomic variables that are reported relatively positively in tables and graphics are sustainable or the level of risk. For country risk, in addition to the generally alphanumeric rating grades expressed by international credit rating agencies with their own systematic, CDS risk premiums independently determined in the market and the fragility state index, which is calculated on the basis of many different factors, is carefully followed. It is very economical in terms of risk and time management to follow these grades or index values instead of following each macroeconomic variable separately by investors and policy makers.

It is observed that the fragile five countries, which were first mentioned in the reports of the US investment bank Morgan Stanley, show variability in some periods. Other fragile five groups are also pronounced by the credit rating agency S&P. In these revisions, although there are countries that are excluded from or included in the list, Turkiye's position in the list almost never changes. There are even economists who claim that they are among the first two of the most fragile of the fragile five. In the study, eleven countries, which are known to be fragile, were determined and some statistics of these countries were examined comparatively with the help of tables and graphs. Although many macroeconomic variables are interpreted as fragility, the current account deficit is one of these variables. Because current account deficits with poor sustainability increase the risks and fragilities on the national currency through the exchange rate and interest rate channels.In terms of sustainability, the financing quality of current account deficits and national savings rates come to the fore, increasing the risks in line with the triple deficit hypothesis together with the budget balance. In this concept, the r-TDI developed by Akçayır (2022) is very important in terms of fragility.

In the study, after the explanation of the detailed theoretical framework, in order to measure the representativeness of the r-TDI index, evaluations were made on eleven fragile economies with the help of tables and graphs based on other fragility indicators of ten years or

more. Especially in the sample of Turkiye, the correlation of triple deficit index values with other fragility indicators was determined, and the most fragile economies were determined under different variables. While Egypt, Pakistan and Turkiye are seen to be the first three of the most fragile economies, the other fragile countries are South Africa, Colombia, Indonesia, Argentina, Brazil, Mexico, India and Qatar, respectively.

The rated triple deficit index values and their degree are of great importance in terms of country fragility. Because current account deficits are should be more in foreign exchange-losing transactions than in foreign exchange-earning transactions. The fact that the budget deficits cannot be financed with the savings deficit makes the deficits more chronic and unsustainable. Therefore, 3rd degree current account deficits with the same index value are much more risky than 1st degree current account deficits. Therefore, in Table 2, Turkiye is ranked 2nd, not 3rd. To put it more briefly, the triple deficit index is a simple and useful fragility measure that measures the current account imbalance caused by the lack of savings. The reforms by economic policy makers and governments to increase the national savings rates of country can reduce the impact on fragility. Even though they fluctuate from time to time, the chronically insufficient savings rate is a very important risk-increasing factor.

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CHAPTER 3

DIGITALIZATION OF HUMAN RESOURCE MANAGEMENT: A BIBLIOMETRIC ANALYSIS

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Introduction

With the technological developments and transformations, organizational structures and ways of doing business have changed. While businesses that can manage these changes may survive, those that cannot manage face to many challenges. One of the most important battles of organizations is to preserve their existence and be sustainable. Digitalization, technological developments and globalization have changed the nature of competition between organizations (Vardarlier & Ozsahin, 2021). The integration of people and machines in business processes leads to the development and inevitable change of the industry. With the technological progress, the physical space is getting smaller and the virtual world is getting bigger day by day (Blštáková, Joniaková, Jankelová, Stachová, & Stacho, 2020). Especially with the Covid 19 pandemic the increase of digitalization in organizations is noticeable (Back, Scherer, Osterhoff, & Rigamonti , 2022; Çiftçioğlu, Mutlu, & Katırcıoğlu, 2019; Kanat & Ayyıldız Ünnü, 2022; Kazak & Obelets, 2022; Kuzior, Kettler, & Rab, 2022). According to the research results of DGB- Index Gute Arbeit (2021), 46% of organizations started using new software or applications during the pandemic process and 24% of organizations started using new hardware (digital devices or technical tools). Looking at this situation in terms of employees, the findings of the same report show that one in five low-level employees (21%) used new software and new applications and software were offered to approximately four out of five (78%) employees at the top level working in high-complexity jobs (Kazak & Obelets, 2022: 100).

With the technological innovations organizations also renew their expectations and functions for Human Resources (Vardarlier & Ozsahin, 2021). When the fourth industrial revolution is evaluated, it is seen that the cornerstone of creating added value is digitalization.

Digitalization in Human Resource Management (HRM) causes change in two stages. The first of these is the integration of physical inputs in the systems into digital systems and the second stage is the redefinition of values for internal and external customers (Blštáková, Joniaková, Jankelová, Stachová, & Stacho, 2020). Integrations and redefinitions in these processes also open up new areas for researchers. Especially in recent years, articles on digitalization in the field of HRM have been increasing.

In this study, it is aimed to investigate the articles published on the digitalization of Human Resources Management in Web of Science and Scopus databases within the framework of the bibliometric analysis technique. This study firstly examines the digital HRM literature in a broad perspective, offering a holistic perspective to those interested in this field both academically and in the practical dimension. Then, detailed bibliometric analysis on digital HRM studies have been conducted and in-depth information has been provided. In addition, evaluations of the development of the studies on HRM digitalization over time are given. This study identifies research trends and gaps related to digitization in HRM and provides important contributions for future researchers in this field. With bibliometric analysis of the retrieved dataset from the Web of Science and Scopus databases, the annual scientific production, countries' scientific production, the most relevant authors and journals, the most cited countries and papers, and the most frequent words on digitalization of HRM were revealed.

1. Literature Review

1.1. Human Resource Management

One of the most important resources that determines the competitive position of an organization is human resources (Sveiby, 1997). Over the past three decades, HR practices in businesses have witnessed significant transformations. HR came to be seen as a core function from a low-level, administrative and maintenance-focused function. The emergence of HR as a function has taken place with economic developments and industrial changes. At the beginning of the 20th century, HR aimed to address organizational challenges by effectively managing and rationalizing employment-related relationships. HR, have shown developments in order to decrease the employee turnover rate and increase productivity. Industrial revolution, changes in

company and organizational structures are the other essential factors (Ulrich & Dulebohn, 2015:188).

The balance between work and private life has changed in favour of business life. All these changes and transformations brought the necessity of looking at the management of human resources in organizations from a different perspective, and attracting talented people to the company and retaining talented personnel began to come to the fore. The perspective of "personnel management", which sees people as a machine and is referred to as personal rights, has been replaced by human resources management, which is considered as the most important driving factor of change and can make a difference, and human (Çetin & Dinç-Özcan, 2013).

By the 1980, HR was no longer an administrative function, but a core business function that contributed to the effectiveness of the organization. The driving force behind this change was technological and organizational developments. Globalization and international competition, employment legislation, decrease in unionization, change in demographic factors, transition from production to an economy based on information and services can be counted among the reasons that led to the change (Ulrich & Dulebohn, 2015:189).

Ulrich & Dulebohn(2015) state that the transformation in HR occurs in four waves. These are HR administration, HR practices, HR strategy and HR and context. HR administration wave is the stage where traditional operations such as administrative functions, providing HR services and legal compliance are. The second wave, HR practices, is more about innovation and requires innovative employees. HR strategy is about executing and developing strategies for business beyond administrative work and design. Depending on the context of the business in which the business operates, the answer to the question “so what” falls within the sphere of influence of the fourth wave (Ulrich & Dulebohn, 2015:191).

In 21st century, organizations most need human resources that can adapt to change and find creative solutions to problems (Rachida, 2020: 245). A serious adaptation and creative spirit is required for the management of the rapidly increasing information and the transfer of the changing technology to the enterprises with the digitalization dimension. Employees with this power are one of the resources that businesses need the most today. The careful management of this

resource is an important task that requires professionalism. The best strategy that can be developed while preparing a society to benefit from technology in is to meet the need for qualified human resources. For this, it is necessary to implement a correct Human Resources Management (HRM) process in this new era (Kaçik & Aykan, 2022: 1568). It has long been accepted by both theorists and practitioners in the field that the most fundamental reason for the smooth functioning of a business is the good management of HR processes (Kuzior, Kettler, & Rab, 2022: 2).

The concept of "Human Resources Management", which was called "Personnel Management" until the 1980s, continued its development as "Strategic Human Resources Management" with an addition to its name in the late 1990s and early 2000s (Doğan, 2011: 52). In the 1990s, HR specialists began to perform their HR functions electronically with the development of technology. This process was called Electronic Human Resource Management (E-HRM) (Kambur & Yildirim, 2022). HR functions are named as electronic recruitment, electronic learning, electronic performance management (e-performance management), electronic career (e-career) management, electronic payroll system (e-payroll). Nowadays AI and digital technologies enable significant developments in HRM which is called as Digital HRM.

1.2.Digitalization in Organizations

The concept of digital is used in information communication technologies in the form of digitizing data, recording, storing, sharing on machines, devices, electronic devices (Alanlı, 2022: 102). The internet, smart devices and user-friendly applications, which have gained a great place in our lives after the 21st century, have led organizations to increase their investments in digital channels in order to increase brand awareness and take part in digital platforms (Aslantaş & Yelboğa, 2021: 145).

Strohmeier, (2020) argues that the definitions for digitalization in organizations in the literature are limited. In addition to these, he states that two different sets of concepts regarding the organizational consequences of digitalization have been put forward. The first cluster is the concepts grouped as a result of being a digital organization, and these are itemized below (Strohmeier, 2020: 350):

• Digitization of organizations is the technical process of converting analog organizational information into digital organizational information for automatic processing.

• Digitization of organizations is the socio-technical process to exploit the potentials of digitization for operational and/or strategic corporate purposes.

• The digital transformation of organizations is the socio-technical digitization sub-process of utilizing digitalization potentials for strategic corporate purposes.

• The digital organization is the socio-technical outcome of the digitization of organizations.

The second cluster denotes to the disruption that produces a marginalized organization. The digital disruption of organizations is a socio-technical marginalization due to the digitalization of external organizations.

1.3. Digitalization of Human Resource Management

All technological changes and innovations that have taken place since the beginning of industrialization have led to paradigm shifts in the field of industry. These paradigm shifts are described as "Industrial Revolutions" in the literature. Industrial revolutions, which develop rapidly with the effect of technology, are classified in 4 groups according to their characteristics. It is seen that the industrial revolutions are briefly called Industry 1.0 (Mechanization), Industry 2.0 (Electrification), Industry 3.0 (Electronics and Automation) and Industry 4.0 (Digitalization). Additionally, Society 5.0, which is built on Industry 4.0, includes more human-oriented approaches (Kaçik & Aykan, 2022: 1571). While the industrial revolutions are expressed by concepts such as hunter, agriculture, industrialization and information society respectively, the concept of Society 5.0, which is based on Industry 4.0, has entered the literature with the expression information society centered on human (Fukuyama, 2018: 47). Society 5.0 is the beginning of a period in which human cooperation with technology is at a high level and technology is not perceived as a threat and is used for the benefit of society (Kaçik & Aykan, 2022:1573).

Technological developments such as HR-software systems, Artificial Intelligence, Big Data, In-Memory-Computing, Machine Learning, Robot process automation (RPA),social media, and cloud computing, lead to many digital transformations in HRM practices (Amla & Malhotra, 2017; Fukuyama, 2018; Kanat & Ayyıldız Ünnü, 2022; Wilfinger, Brandstätter, & Mitteregger, 2022: 438). These technologies provide organizations with the opportunity to offer a more flexible, agile and customized HR approach (Amla & Malhotra, 2017: 538).

Strohmeier (2020: 347) states that digitalization in Human Resources Management has some different definitions and there are some reasons for this. The first of these reasons is that digitalization is a general organizational phenomenon not only for HRM but also for all organizational areas. Another is the interdependence of the digitization of the organization and the digitization of HRM. The last one is the digitalization literature is more developed than the digital HRM literature when considered in general. It is therefore appropriate to leverage the general insights available in clarifying digital HRM.

Strohmeier (2020: 351) states that there are two types of definitions for HRM digitization. The first definition types deal with on the outcomes of digital HRM and focuses on the followings:

- Digitization of HRM is the technical process of converting analog HR information to digital HR information for automated processing.
- Digitization of HRM is the socio-technical process to exploit the potentials of digitization for operational and/or strategic HRM purposes.
- The digital transformation of HRM is the socio-technical digitization sub-process of harnessing digitalization potentials for the strategic purposes of HRM.
- Digital HRM is the socio-technical result of the digitization of HRM.

In the second type of definitions the deterioration is explained:

- The digital degradation of HRM is the socio-technical process of marginalization due to digitalization outside of HRM.

For organizations, human capital is the type of capital integrated with an employee's knowledge, experience, presence and actions in the business (Kuchciak & Warwas, 2021:1). With the development of smart technologies, the possibility of replacing the human element with safer and more effective systems with perfect communication was also a fear-inducing situation (Blštáková, Joniaková, Jankelová, Stachová, & Stacho, 2020: 2). From this point of view, it was possible to say that technological advances create some disadvantages for qualified employees, but also lead to a lot of convenience in specialization, flexibility and adaptation with less knowledge and equipment (Blštáková, Joniaková, Jankelová, Stachová, & Stacho, 2020: 3). However, with the transformation of Industry 4.0 into Society 5.0, technology has started to be used for the benefit of humanity. The negativities that emerged in the previous period, Industry 4.0, show that the conveniences brought by technology reduce employment and scare humanity. At this point, the failure to implement the goals of Society 5.0 prepared for the benefit of humanity in the field of HRM increases the risk of the problems that have arisen in the past periods coming to light again. In this direction, the transformation required in HRM will be realized with Society 5.0 and will be able to eliminate possible risks for humankind (Kaçik & Aykan, 2022: 1576).

Amla & Malhotra (2017: 537) argue that the combination of "technology and human" will create magic. While stating that machines can do many tasks better and faster than humans, he states that the elements that make humans human emerge in this process. Digitization is very beneficial for HR managers and professionals as it frees businesses from lengthy HR processes and enables them to focus on activities that have more strategic value.

Almost all the functions of HR have witnessed a technological development in recent years. Workday was founded in 2005 with the aim of providing software solutions for HRM and thus it has added strength to its strength at the point of HR digitalization. Later, in 2011, SuccessFactors was acquired by SAP, and Taleo was acquired by Oracle in 2012. These developments have led to the strengthening of HR in the digital dimension. More and more organizations are introducing new technologies and software applications (Fitbit, chatbots and data analytics) every day, which allows them to recruit, promote a personal brand, create a work-life balance for employees and take care of their health. Mckinsey & Company has presented a report

that half of business activities could be automated with existing technologies, which would save about $16 trillion in wages (Amla & Malhotra, 2017: 537).

This business revolution, which has emerged with digitalization, can be both a great opportunity and a serious threat to the labour world. Digitalized processes and working with remote employees ' time, space and social conditions on their own while waiting to get rid of the restrictions on the other hand, the process may cause harm to employees and freedoms can be controlled continuously (Kuzior, Kettler, & Rab, 2022: 1). Below are some suggestions that can be considered in order for digitalization to be more efficient in organizations (Amla & Malhotra, 2017: 541):

- HR leaders should frequently attend HR technology events where the best solutions are discussed in order to understand the future.
- A digitally activated team should be developed. Waiting for new processes and business procedures to be put forward by technology vendors may put the business at a disadvantage in competition.
- It is necessary to abandon outdated HR technologies and processes without resistance and adopt new ones quickly.

The digital transformation of workforce also affects the demand for leadership skills and makes the talent race more intense in many countries. In order to compete in this talent race, companies need to focus their attention significantly on strategic workforce planning. This planning starts with the systematic collection of basic information about all employees and the classification of various types of employees by type of work. After that, enterprises need to predict personnel requirements, create forecast ratios for productivity growth and revenue growth, conduct analyzes on employee development, transfers, internal and external sourcing, setting new recruitment goals (Çiftçioğlu, Mutlu, & Katırcıoğlu, 2019: 42).

1.4. Advantages of Digital Transformation to Human Resource Management

The digitalization of HR departments brings many conveniences at the point of carrying out functions. The first of these is to provide convenience in the phenomena of time and space by offering online trainings to employees through the digitalization of educational processes. Additionally, it is possible to make more objective, standard and fair measurements in performance evaluation. Regular feedback also makes the management of the process easier. As for remuneration, employees can access all their documents through the systems, and they can see the item of each fee they receive at any time through their online accessible payrolls. Every process such as permissions and cuts can be managed transparently under registration. On the other hand, staffing processes can be carried out gradually thanks to online systems. Job interviews with candidates can be conducted online, applications or information of candidates can be stored and evaluated. The advantages that digitalization of HRM offers to organizations have been discussed by Amla & Malhotra (2017: 539) in the following items:

- Smart recruitment
- Ease out the screening and interview process
- Data security and transparency
- Increase efficiency
- Enhance workplace learning
- Enables organizations to stay competitive

Back, Scherer, Osterhoff, & Rigamonti (2022) studied the digitalization of HR in Surgial departments at hospitals and they listed some advantages as mentioned below:

- Continuous evaluation and support of recruitment processes and marketing efforts with the brand building process.
- The development of employees for training processes is carried out transparently and enriched.
- Ensuring cost and personnel optimization and process improvement.

Doğan (2011: 58) has listed the advantages of using technology in the procurement and selection of HR in terms of organizations as listed below:

- It reduces the costs and the time required for management.

- It provides a more efficient and paperless recruitment management.
- It improves the image of the organization.
- It shortens the duration of the recruitment process.
- Because it can provide more candidates, the candidate pool becomes wider.
- It is also an easier process for candidates who will apply for a job.
- It reduces the barriers to overseas or international procurement activities (recruitment at the global level).
- It encourages candidates to engage in job search activities individually.
- In markets where unemployment is low, the faster an organization reaches candidates, the luckier it will be in attracting them to the organization.

1.5. Disadvantages of Digital Transformation to Human Resource Management

Although there are many advantages of digitalization of HRM as mentioned above, the digitalization of HRM may also bring some disadvantages. These disadvantages have been discussed by Amla & Malhotra (2017:541) in the following headings:

- Resistance to change
- Insufficient leadership support
- Getting the right talent
- Understanding Customer

Doğan (2011: 59) lists the disadvantages of using technology in the procurement and selection of HR as below;

- Since it is easier for candidates to apply for a job than the traditional system, there are a large number of applications. The majority of applicants may also be unsuitable for the position.
- The installation of the required technical system can be expensive.
- Technical system may cause problems during application.
- In a global recruitment process, it is necessary to establish a comprehensive screening system to determine the candidates

who are suitable for the job from very different social groups. It is also quite difficult to install such a system.

- The fact that most of the candidates applying are male or female or from a certain region may cause an equal opportunity problem in the electoral activity.
- Although computers and the Internet have become quite widespread in recent years, not all job seekers have the opportunity to use computers and the Internet. Therefore, if job vacancies are advertised only on the Internet, they will not be accessible to potential candidates who are looking for a job, but do not have the opportunity to use a computer or the Internet.
- Organizations can waste time unnecessarily by taking care of candidates and resumes of these candidates that are automatically created by computers and do not actually exist.
- If recruitment is carried out only from among those who fill out the application forms on the Internet sites, passive candidates who are not looking for a job but may be more valuable to the organization will be prevented from participating in the organization in this way.

2. Methodology

In this study bibliometric analysis technique was conducted. The purpose of bibliometric analysis is to reveal the epistemology and information structure of a specific topic with statistics. This technique has far-reaching consequences and is widely used (Singh, Sibi, Yost, & Mann, 2021: 2). With this analysis, researchers can contribute to a better understanding of the identified research area and determine future publication policies (Zupic & Čater, 2015).

Data for the bibliometric analysis was gathered by search queries conducted in Web of Science (WoS) and Scopus databases. These databases are widely used to retrieve information on a particular subject (Falagas, Pitsouni, Malietzis, & Pappas, 2008: 339). The keyword "digitalization of human resource management" was used and the timespan of the studies were selected between 2013-2023. Papers written in English were included.

The recieved data from the WoS was exported and the bibliographic analysis were conducted via Bibliometrix Package built in R Program. The research questions of this study are listed below:

RQ1: What is the number of articles per year on digitalization of HRM?

RQ2: Which countries have the highest publication on digitalization of HRM?

RQ3: Which journals are the most relevant on digitalization of HRM?

RQ5: Who are the most relevant authors on digitalization of HRM?

RQ6: Which countries have the highest citation on digitalization of HRM?

RQ7: Which articles have the highest citation index on digitalization of HRM?

RQ8: Which are the most frequent words used in the digitalization of HRM literature?

3. Results

In this study, two databases, Web of Science and Scopus, were used for bibliometric analysis. The number of studies obtained after typing keyword into the Web of Science database on 12.01.2023 was 352. However, after the year, language, document type filters, this number decreased to 185.

Scopus database was scanned on 19.01.2023. While the number of studies that came to the fore before applying filters in this database was 557, the number decreased to 218 after the same filters. The results obtained after descriptive analysis are shown in Table 1.

Table 1. Descriptive Analysis

	Web of Science	**Scopus**
Description	**Results**	**Results**
Timespan	2013:2023	2013-2023
Documents	185	218
Average citations per doc	9,459	10,06
Authors	1061	800
Authors of single-authored docs	12	16
Co-Authors per Doc	5,85	3,75
International co-authorships %	32,97	29,82
Article	165	192
Review	20	26

Source: Table 1 was created by researcher

When the results in Table 1 are evaluated, it is seen that this study covers the studies carried out between 2013 and 2023. In today's conditions, where we meet with a new technology nearly every new day, examining the last ten years gives the recent and actual results. In addition, since digitalization in HRM is a developing field of study in recent years, it was thought that there would not be much study on this subject in the past, and this idea is supported by the Table 2 below according to the distribution of years.

The total number of studies included in the research is 403. This number is very small for a ten-year period, but the history of digitalization in HRM is not very old. Therefore, it is certain that this number will increase day by day. Within the scope of the study, 357 articles and 46 reviews were analysed.

Table 2. Annual Scientific Production

	Web of Science	**Scopus**
Year	**Articles/Reviews**	**Articles/Reviews**
2013	1	1
2014	0	0
2015	1	1
2016	1	1
2017	3	5
2018	8	10
2019	16	20
2020	28	37
2021	58	49
2022	68	89
2023	-	5

Source: Table 2 was created by researcher

As seen in Table 2, on the digitalization of HRM, only one paper was published every year until 2017 in both databases. In fact, there are no papers published on this subject in 2014. But the numbers have increased every year. With the development of technology, the digitalization of HRM processes is becoming more and more remarkable. The results of this effect are also revealed by the increasing number of publications over the years. In 2022, 68 papers on Web of Science and 89 papers on Scopus were published.

Table 3. Countries' Scientific Production

Web of Science		Scopus	
Country	**Freq**	**Country**	**Freq**
India	78	Italy	43
Iran	68	Germany	39
USA	67	Sweden	33
Germany	64	UK	32
Italy	48	USA	32
China	47	India	28
Russia	44	China	17
Australia	41	Ukraine	17
UK	38	Spain	15
Ukraine	25	Indonesia	13
Indonesia	20	Australia	12
Spain	20	France	12
Brazil	19	Slovakia	12
Pakistan	18	Norway	10
Malaysia	15	Portugal	10
Ethiopia	13	Czech Republic	9
Nigeria	13	Finland	9
Slovakia	13	Poland	9
Sweden	13	Turkey	9
Austria	11	Japan	8
Canada	11	Canada	7
Czech Republic	11	Kazakhstan	7
Switzerland	11	Malaysia	7
Turkey	11	Nigeria	7
France	10	South Africa	7

Source: Table 3 was created by researcher

Web of Science and Scopus databases show differences in the ranking of the countries that publish the most for the digitization of HRM. As can be seen in Table 3, the three countries with the highest number of publications according to Web of Science are India, Iran and the USA, while the top three countries according to Scopus data are Italy, Germany and Sweden.

Tablo 4. Most Relevant Journals

Web of Science		Scopus	
Journals	**Number of Articles**	**Journals**	**Number of Articles**
Sustainability	12	Sustainability	12
Frontiers in Psychology	4	Frontiers in Psychology	4
Energies	3	Human Resource Management Journal	4
Baltıc Journal of Economic Studies	2	Industry Competitiveness: Digitalization, Management, and Integration, Vol 1	4
Computers & Industrial Engineering	2	Proceedings of the International Scientific Conference- Far East Con (Iscfec 2020)	4
Economics & Sociology	2	Socio-Economic Systems, Vol. 2: Paradigms for the Future	4
Financial and Credit Activity-Problems Of Theory and Practice	2	Vision 2025: Education Excellence And Management of Innovations Through Sustainable Economic Competitive Advantage	4
German Journal of Human Resource Management-Zeitschrift fur Personalforschung	2	Education Excellence And Innovation Management Through Vision 2020	3
Gio-Gruppe-Interaktion-Organisation-Zeitschrift Fuer Angewandte Organisationspsychologie	2	Education Excellence and Innovation Management: A 2025 Vision to Sustain Economic Development During Global Challenges	3
Human Resource Management Journal	2	Energies	3
International Journal of Environmental Research And Public Health	2	German Journal of Human Resource Management-Zeitschrift Fur Personalforschung	3
International Journal of Human Resource Management	2	Idimt-2017- Digitalization in Management, Society and Economy	3
International Journal of Manpower	2	Ifac Papersonline	3
International Journal of Production Economics	2	Innovation of Businesses, and Digitalization During Covid-19 Pandemic, Icbt 2021	3
Journal of AsIan Finance Economics And Business	2	International Journal of Manpower	3
Journal of Cleaner Production	2	Proceedings of The 2nd International Scientific and Practical Conference-Modern Management Trends and	3

		The Digital Economy: From Regional Development to Global Economic Growth (Mtde 2020)	
Journal of Industrial Engineering And Management-Jiem	2	Baltıc Journal of Economic Studies	2
Journal of Intellectual Capital	2	Competitiveness Review	2
Journal of Risk And Financial Management	2	Computers & Industrial Engineering	2
Marketing and Management Of Innovations	2	Critical Perspectives on International Business	2
Polish Journal of Management Studies	2	Economics & Sociology	2
Quality-Access to Success	2	Financial And Credit Activity-Problems of Theory and Practice	2
Sa Journal of Human Resource Management	2	Gio-Gruppe-Interaktion-Organisation-Zeitschrift Fuer Angewandte Organisationspsychologie	2
Technological Forecasting and Social Change	2	Human-Centered Digitalization And Services	2
Turismo-Estudos E Praticas	2	Human Resource Development Quarterly	2

Source: Table 4 was created by researcher

Table 4 shows the most prolific journals and the number of articles published in those journals. According to the findings in this table, the first two journals in both Web of Science and Scopus are Sustainability and Frontiers in Psychology. However, the ranking starts to change in the third journal.

Table 5. Most Relevant Authors

Web of Science		Scopus	
Authors	**Number of Articles**	**Authors**	**Number of Articles**
Mazurchenko A	3	Verma A	3
Mohammadian HD	3	Borzooei S	2
Anggadwita G	2	Garza-Reyes JA	2
Arbolino R	2	Joniaková Z	2
Baker BJ	2	Karwehl LJ	2
Butschan J	2	Kauffeld S	2
Bystrov A	2	Kucherov D	2
Chulkov VO	2	Li X	2
Ciochina RS	2	Mazurchenko A	2
D'amico G	2	Muda I	2
Fischer J	2	Na Na	2
Hagemann V	2	Paul A	2
Heidenreich S	2	Sharma A	2
Hesenius M	2	Stacho Z	2
Hoyng M	2	Tyagi R	2
Ioppolo G	2	Wu Y	2
Jabbour CIC	2	Abate E	1
Joniakova Z	2	Abayneh A	1
Karpunina EK	2	Abbasi-Kamardi A	1
Karwehl LJ	2	Abdulwahed M	1
Kauffeld S	2	Abler M	1
Klumpp M	2	Adamska K	1
Knappstein M	2	Adekoya OD	1
Kucherov D	2	Adisa TA	1
Kumar M	2	Agrawal R	1

Source: Table 5 was created by researcher

The ranking of authors with the most papers on the digitization of HR differs according to Web of Science and Scopus data. According to the Web of Science ranking, the top three authors with the highest number of papers are Mazurchenko A., Mohammadian H.D., and Anggadwita G., respectively. According to Scopus data, this ranking is respectively Verma A., Borzooei S. and Garza-Reyes J.A. is. These rankings are shown in Table 5 below.

Table 6. Most Cited Countries

Web of Science			**Scopus**		
Country	**Total Citations**	**Average Article Citations**	**Country**	**Total Citations**	**Average Article Citations**
China	267	20,54	Germany	315	35,00
Italy	197	16,42	Sweden	258	17,20
Germany	187	7,79	Finland	174	87,00
Austria	162	40,50	Italy	170	13,08
Romania	103	51,50	China	147	12,25
Sweden	99	19,80	New Zealand	98	98,00
Brazil	95	95,00	Usa	87	12,43
Finland	85	28,33	United Kingdom	86	8,60
Spain	75	9,38	Spain	80	16,00
Pakistan	56	56,00	India	67	9,57
India	50	5,00	Portugal	58	11,60
Usa	38	6,33	Poland	50	12,50
Australia	29	9,67	Czech Republic	49	9,80
Denmark	22	11,00	Switzerland	49	16,33
Russia	22	1,38	Australia	39	9,75
Switzerland	20	10,00	Korea	24	8,00
Slovakia	19	2,71	Malaysia	14	4,67
Portugal	17	5,67	Hungary	13	13,00
Hungary	16	16,00	Kazakhstan	13	6,50
Kazakhstan	16	16,00	Slovakia	11	3,67
Czech Republic	15	2,50	Singapore	10	5,00
Poland	15	5,00	Tanzania	10	10,00
Malaysia	14	4,67	Brazil	9	4,50
Turkey	13	2,60	Ukraine	9	2,25
Ukraine	13	1,63	Indonesia	5	2,50

Source: Table 6 was created by researcher

Table 6 shows the rankings of the countries to which the most cited studies belong. According to these rankings, the top three countries cited in the Web of Science database are China, Italy and Germany, while in Scopus these countries are Germany, Sweden and Finland.

Table 7. Most Cited Papers

Web of Science		Scopus	
Paper	Total Citations	Paper	Total Citations
Ren SY, 2021, Energ Econ	144	Mechtcherine V, 2019, Autom Constr	135
Sarc R, 2019, Waste Manage	128	Wilkesmann M, 2018, Vine J Inform Knowl Manag	99
Sima V, 2020, Sustainability-Basel	97	Shepherd M, 2020, J Sci Food Agric	98
Liboni LB, 2019, Supply Chain Manag	95	Konttila J, 2019, J Clin Nurs	96
Wilkesmann M, 2018, Vine J Inf Knowl Man	83	Fareri S, 2020, Comput ind	90
Fareri S, 2020, Comput ind	70	Schildt H, 2017, Innov Manage Policy Pract	78
Schildt H, 2017, Innov-Organ Manag	63	Krüger A, 2018, New Biotechnol	70
Mahmood T, 2020, Technol Forecast Soc	56	Bokrantz J, 2020, Int J Prod Econ	61
Bortolini M, 2020, Comput ind Eng	52	Li D, 2019, Int J Adv Manuf Technol	57
Bokrantz J, 2020, Int J Prod Econ	46	Wu Y, 2021, Int J Electr Power Energy Syst	54
Wu Y, 2021, Int J Elec Power	38	Petri I, 2017, Energies	54
Santana M, 2020, Eur Manag J	36	Jou M, 2013, Comput Hum Behav	50
Galaz V, 2021, Technol Soc	35	Santana M, 2020, Eur Manage J	46
Jou M, 2013, Comput Hum Behav	34	Öberg U, 2018, Scand J Caring Sci	42
Lausch A, 2018, Methods Ecol Evol	33	Fenech R, 2019, J Manag Inform Decis Sci	40
Ceipek R, 2021, Long Range Plann	28	Poch M, 2020, Sci Total Environ	35
Fernandez V, 2021, Compet Rev	25	Strohmeier S, 2020, Ger J Hum Resour Manag	34
Minbaeva D, 2021, Hum Resour Manage R	22	Fernandez V, 2021, Compet Rev	31
Garg S, 2022, Int J Product Perfor	21	Bellı L, 2019, Front Ict	30
Silic M, 2020, Hum Resour Manag J	20	Garg S, 2022, Int J Product Perform Manage	27
Cooke Fl, 2019, Hum Resour Manage-Us	20	Patriarca R, 2021, Saf Sci	27
Strohmeier S, 2020, Ger J Hum Resour Man	18	Maia Mr, 2019, Bmc Health Serv Res	26
Koch C, 2019, Facilities	18	Succar B, 2020, Autom Constr	25
Chierici R, 2021, J Intellect Cap	17	Porthin M, 2020, Reliab Eng Syst Saf	25
Chulanova ZK, 2019, J Asian Financ Econ	16	Justo N, 2019, Value Health	25

Source: Table 7 was created by researcher

The most cited papers are listed in Table 7. According to this table, the most cited source in Web of Science is Ren SY, 2021, Energ Econ with 144 citations, while in Scopus it is Mechtcherine V, 2019, Autom Constr. with 135 citations.

Tablo 8. Most Frequent Words

Web of Science		**Scopus**	
Words	**Occurrences**	**Words**	**Occurrences**
management	26	human	49
performance	20	human resource management	42
impact	18	article	34
human-resource management	16	humans	29
framework	15	digitalization	17
innovation	15	sustainable development	17
implementation	12	industry 4 0	16
future	11	covid-19	15
work	11	decision making	14
big data	10	female	14
model	10	qualitative research	13
system	8	information management	12
technologies	8	artificial intelligence	11
technology	8	knowledge management	11
design	7	pandemic	11
hrm	7	sustainability	11
knowledge	7	telemedicine	11
strategy	7	adult	10
systems	7	controlled study	10
challenges	6	information technology	10
digitalization	6	employment	9
industry 4 0	6	health care delivery	9
automation	5	human resource	9
business	5	interview	9
employees	5	male	9

Source: Table 8 was created by researcher

Among the studies in the Web of Science database, when it comes to digitization in HRM, the three most used words are management, performance and impact, while this ranking is human, human resource management and article for the Scopus database. The 25 most frequently used words and their occurrences are listed in Table 8 for both databases.

4. Conclusion

The aim of this study is to reveal the reflections of the digitalization process, which is increasing with the effect of developing technology, in the field of Human Resources Management, with a bibliometric analysis. When the results of the study are considered, it is seen that there is an undeniable improvement in the field of digitalization of HRM. The number of publications increasing exponentially every new year reveals this very clearly.

In this study, after the theoretical information on the digitalization of HRM, analysis of scientific studies was carried out in the light of data obtained from two large databases such as web of Science and Scopus. The results of the study reveal that there are very few studies in this area. The fact that the number obtained after two databases is so low reveals that there are still large gaps in this field and that multidisciplinary studies to be carried out in the light of science and technology will be widely accepted in the field. The findings of study reveal that 403 articles on HR digitization published between 2013 and 2023. The findings of the research reveal that until 2016, at most 1 paper was published on this subject per year, but after 2016 there was a noticeable increase. The fact that technological developments bring innovations and the increase in digitalization in business life also shows its effect in the number of increased studies in this context. The effect of developing technologies in organizations and in human resources opens the door to many studies. The management of networks and systems used in organizations, where people and machines are integrated together imposes difficult tasks on organizations. In order to overcome these challenging tasks, organizations have to take into account the reflections of these processes on their human resources while incorporating innovations and digitalization into processes. The planning made without ignoring a generation that has just learned technology while meeting a generation born into technology, will

maintain the balance and will ensure that organizations gain from these processes. The labour force profile is changing rapidly and the new generation has different characteristics and expectations from the previous ones (Çiftçioğlu, Mutlu, & Katırcıoğlu, 2019: 42). The lack of technological developments in the business life for new generations born into a digital world may cause their job dissatisfaction. In addition, effective processes should be designed in order to ensure the adaptation of current employees to digital processes. Planning the transformations and changes according to the readiness of existing or potential employees is important in ensuring success.

According to the articles in the Web of Science database, the country with the most publications is India, while in Scopus database, this country is Italy. The journal with the highest number of publications in both databases is Sustainability. According to the Web of Science database, the most published author is Mazurchenko while according to Scopus data Verma is. The country with the highest number of citations is China in Web of Science and Germany in Scopus. According to Web of Science database, the most cited study is Ren (144) while in Scopus it belongs to Mechtcherine (135). The most frequently used word in studies on this subject in Web of Science is "management", which is used 26 times according, while it is the word "human" in Scopus and used 49 times. This study paves the way for studies in this field, especially by presenting data to academics in the field. Which journals attach importance to this field, which topics are interesting (as can be seen from the citations), which words are used frequently in this subject can be a light for future studies.

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CHAPTER 4

REGIONAL CONVERGENCE AND INNOVATION POLICIES IN THE EUROPEAN UNION

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Introduction

The European Union, as the most integrated part of the European continent, has a large and diverse experience in implementing regional policy, which is of great importance for other countries and regions of the world.

Today, the regional policy pursued by the European Union (called the cohesion policy) has become a permanent factor, without which full-fledged European integration is unthinkable. Irregularities in economic and social development exacerbate to the utmost the problem of ensuring unity and interaction, political cohesion. The methods and tools of public intervention in these areas largely determine the future of the Union itself.

The regional policy of the EU is aimed at improving the welfare of the EU regions and regional convergence - the convergence of regions in terms of socio-economic development. This will bring the regions and citizens of the European Union together. This equalization is carried out with the help of the redistribution of budgetary funds between the regions for the policy purposes indicated for the program period. The general purpose of such a policy is not only the harmonious development of the regions and the development of further integration processes, but also the increase in the competitiveness of the European Union as a whole in the world market.

As the experience of the EU shows, few regions have managed to overcome their structural weaknesses and the middle income trap, moving into the category of developed regions with sustainable productive potential, able to compete in the international market. The solution has been found – today, more than ever, economic development and convergence of regions is facilitated by a regional

policy based on supporting innovation. Innovation allows for the rapid growth of the economy of a backward region, as well as maintaining high value added and overcoming the middle income trap in regions where the pace of economic development has slowed down. The innovation policy is a tool for achieving the objectives of the EU regional policy.

The article shows the conceptual foundations of the regional innovation policy of the EU. The concept of regional innovation systems (RIS) helps in the analysis of the factors influencing the convergence of regions. The concept of "smart specialization", which is a logical continuation of the RIS approach, has become the paradigm of EU regional policy already in the program period 2014-2020. “Smart specialization” aims to select a limited number of priority areas for investment, focusing on the strengths and advantages of the region.

The data of the EU regional policy for the past program periods, including 2021, are analyzed, which confirm that those countries that used innovation as the main lever for development (for example, Ireland) have reached the first positions in terms of GDP per capita in the EU in a very short time .

The conditions for the growth of regions with different levels of economic development are indicated. In general, the principles of the regional innovation policy of the EU are outlined - selectivity, diversity and experimentation.

Innovation is a source of growth and a tool for solving global problems such as social inequality and climate change. Regions are increasingly striving to contribute to economic development by supporting innovation. At the same time, the strategies and instruments of innovation policy are focused on developing the strengths of the region. The main objective of regional policy is to provide favorable conditions for the development of entrepreneurship and job creation.

The purpose of this article is to analyze the strategies and experience of the European Union innovation policy: to what extent and why the EU innovation policy has contributed (or not) to regional convergence, and to propose new approaches for the current (2021-2027) and next program periods.

Studies of regional innovation policy are closely related to studies of regional innovation systems (Regional innovation systems, RIS) (Cooke, 1992). The RIS approach appeared in the 1990s and was associated both with developments in National Innovation Systems (NIS), as well as with developments in theories of economic geography and cluster theory. The NIS approach emphasizes the distinctive nature of the innovation process of each individual country or region. The post-Schumpeterian direction of the evolutionary school (Nelson and Winter, 1982) emphasizes the dynamic nature of economic changes caused by the introduction of innovations. Interactive learning theories (Lundvall and Johnson, 1994) understand innovation as the result of a continuous learning process in which many actors (firms, universities, technology centers) take part.

On the other hand, since the 1980s, several theories of the school of economic geography have been developed that also emphasize the importance of innovation for the competitiveness of regions: the theory of industrial regions (Becattini, 1990), the theory of flexible specialization (Scott, 1988), or the theory of regional innovation systems (Morgan, 1997). All of these theories can be labeled as territorial or locally oriented, in the sense that they emphasize the determining nature of local factors influencing regional development (institutions, technologies, external relations). The role of local factors is also well represented in the cluster theory developed, in particular, by Porter, who also influenced both research on regional innovation systems and regional innovation policy (Porter, 2000). According to this point of view, each region not only has its own trajectory of economic development, but also requires a policy that takes into account its characteristics.

The concepts of NIS and RIS are based on political intervention during system crises. Unlike neoclassical economic theory, the evolutionary approach is not focused on crises, which are the impetus for the development of policy in the field of science and technology, but focuses on the need to prevent system crises. This approach is based on the understanding that the learning process necessary for innovation is the result of the interactions of numerous agencies and institutions of the system (Metcalfe and Georghiou, 1997). The interaction between universities and enterprises is not always sufficiently coordinated, and

sometimes even absent. When this happens, political intervention is required.

Thus, the concept of regional innovation systems defines a different approach to innovation policy, making it more diverse and complex. There is a wide range of different tools that are aimed at creating and developing innovative enterprises. Among them, it is necessary to highlight the creation of infrastructure - technology parks, technology centers, innovation centers (innovation agencies). It is also important to develop cooperation between the participants of the innovation system, as well as to coordinate such interaction. In this sense, structures that encourage collaboration between businesses and universities are useful tools. We are talking about joint projects, research mobility, etc.

The RIS approach is consistent with and is a logical extension of smart specialization (smart specialization/smart specialization strategies, 3S), a concept that has recently become the dominant paradigm of EU regional innovation policy. "Smart specialization" linked innovation policy with regional development policy. This concept was formulated by the expert group of the European Commission "Knowledge for Growth" as a strategy for the innovative development of regions, involving the most effective use of their features to develop competitive advantages. Smart Specialization combines industrial, innovation and educational policies and aims to select a limited number of priority areas for investment based on the region's strengths and advantages.

Despite the fact that initially, "smart specialization" was not considered as a paradigm of EU regional policy, it became its key pillar for the period 2014-2020. According to McCann (McCann, 2015), 3S fit very well with EU cohesion for two reasons. First, because “smart specialization” has shaped the system of policy priorities in line with the Europe 2020 strategy. Secondly, because it took into account, like the policy of cohesion, the peculiarities of the region. Cohesion policy implies that policy priorities should be different for each region and that regional policy should be based on the potential of the region (Rodrik, 2005; Barca, McCann and Rodríguez-Pose, 2012). It is on this - the application of the "bottom-up" approach - that the strategies of "smart

specialization" in the development of entrepreneurship in the region are built.

All strategies of the EU regional policy are subordinated to one goal - inter-regional convergence - the socio-economic convergence of regions, which generally serves European integration. The viability of the Single European Act of 1986, the purpose of which was to create a Common Market, was expected to depend on the distribution of resources among the countries and regions of the EU. As a result, a large amount of funds (35%) was allocated to the development of the EU regions from the Structural Funds and the Cohesion Fund. The goal of equalizing the levels of development of the regions was enshrined in Section V of the Single European Act (Article 130 "a" of the Treaty on the European Economic Community) (The Single European Act 1986).

After four decades of active regional politics in the EU-12 (mainly in Southern Europe) and almost two decades in the EU-15, lessons learned show that the transition from less developed to developed regions is the exception, not the rule. Convergence occurred regularly, but was often temporary and unreliable. Using the average EU GDP per capita as a benchmark, few regions have managed to overcome their structural weaknesses and the middle income trap, moving into the category of developed regions with sustainable productive potential, able to compete in the international market with high added value and cope with crises. Ireland is the most striking example of such a region, while cities in the EU-15 include Prague and Bratislava. An improvement in the economic situation is observed in many regions - there is a conditional convergence, when poor regions grow faster than rich ones, all other things being equal (provided that the structural parameters and production function are similar), i.e. with the same steady state. If the steady states are different, conditional convergence means that a country grows faster the farther it is from its own steady state (Туманова и Шагас, 2004).

Some regions with GDP per capita close to the EU average are stuck in the middle income trap. This phenomenon occurs when the growth of a country's economy slows down and eventually stops after reaching the middle income level. The problem usually arises when developing countries get stuck in the middle due to rising wages and declining price

competitiveness, resulting in an inability to compete both with developed economies based on innovation and high skills, and with economies with low incomes, wages and cheap production of industrial goods (Asia 2050: Realizing the Asian Century, 2011). As wages rise, producers often find themselves unable to compete in export markets with other countries with lower production costs. At the same time, they still lag behind advanced countries with higher production costs.

Typically, countries trapped in the middle income trap have low investment levels, slow output growth, poor industrial diversification, and poor labor market conditions. In order to avoid the middle income trap, a transition to an innovation strategy and the search for new markets to support export growth is necessary. It is also important to increase domestic demand. The growing middle class can use the increase in purchasing power to purchase high-quality, innovative products, which helps spur economic growth.

The biggest challenge is the transition from resource-driven economic growth that depends on cheap labor and capital to growth based on high productivity and innovation. This requires investment in infrastructure and education. Thus, South Korea, and in the EU, Ireland have shown that the creation of a high-quality education system that deals with science is a key factor.

Often intra-European convergence was achieved only in relation to capitals and large cities. In relation to states during a recession, conditional convergence takes place. The 2008 EU crisis caused the long-term downward trend in regional disparities in GDP per capita and areas of employment to come to a halt. However, in many regions GDP per capita and employment remain below pre-crisis levels. The EU 2017a report on economic, social and territorial cohesion (European Commission, 2017) shows that regional disparities decrease again after the crisis. During the period of growth 2000-2008. The main leaders in per capita GDP growth were exclusively countries that had recently moved from a planned to a market economy. Almost all of them had a low GDP per capita, but many showed impressive results and overtook the southern European regions.

The economic and financial crisis led to a reduction in GDP per head between 2009 and 2015 in around 40% of regions, located mainly in

Ireland, Italy, Spain, Portugal and Greece; in most Greek regions, the reduction amounting to over 3% a year (European Commission, 2017)

From 2000 onwards convergence was mainly driven by the catching up of the less developed economies. GDP per head, therefore, grew faster in real terms in the less developed Member States than in others over the period 2001-2016, except in 2010 and 2011 (European Commission, 2017).

From 2011 to 2013 the average growth rate in the moderately developed Member States was below that in the highly developed Member States, i.e. diverging. Only in 2014 did it overtake the rate in the highly developed Member States and growth in their GDP per head (European Commission, 2017).

In 2019-2021, Luxembourg and Ireland in terms of GDP index at purchasing power parity lead by a significant margin among 36 countries, including: EU member countries, EU candidate countries - Albania, Montenegro, North Macedonia, Serbia and Turkey; potential EU candidate - Bosnia and Herzegovina; countries of the European Free Trade Association (EFTA) - Iceland, Norway and Switzerland.

From 2019 to 2021, the GDP index grew and remained the highest in the EU. GDP at purchasing power parity of the European Union per capita in 2021 was 38,411 US dollars (European Union GDP Per Capita 1970-2023), GDP at PPP - 40,856.84 (GDP per capita, PPP - Classification of countries). GDP per capita at PPP in Ireland is USD 102,496.22 (2.5 times higher than the EU average), in Luxembourg - USD 115,683 (2.83 times higher than the EU average). Bulgaria is the lowest at $24,398 (1.67 times less than the EU average) (Trading Economics).

At the same time, the index of actual consumption per capita (AIC) in absolute terms without taking into account the price difference (without purchasing power parity) in Luxembourg is lower than GDP - 144% and this is the highest index in the EU (Figura 4). At the same time, Luxembourg has the highest price level - (GDP per capita, consumption per capita and price level indices, 2022). In Ireland, AIC in absolute terms is much lower (88%) with such a high GDP per capita (219%). In Ireland, the price level compared to the EU average (100%) is 146.4. The lowest price index is in Turkey (35.7%) (GDP per capita, consumption per capita and price level indices, 2022).

The difference in GDP per capita at PPP across EU member states is significant (Table 1). Luxembourg, as we noted above, has the highest per capita PPP GDP. This is explained by the fact that Luxembourg, albeit not from a legal point of view, but in fact is an offshore jurisdiction - a territory where foreign investors fix their profits, creating them and spending them on the territory of their countries. The high GDP per capita in Ireland (219%) is due to the rapid development of the economy due to the policy of "smart specialization" aimed at the development of intellectual property. True, most of the country's GDP is returned to the owners of multinational companies.

Next in the ranking of GDP per capita in terms of PPP are Denmark, the Netherlands, Sweden, Austria, Belgium, Germany - their figure is 120-123%. The EFTA countries have the following indicators: Norway - 167%, Switzerland - 155%, Iceland - 119%. This means their GDP is above the EU average. Finland and France complete the list of countries with above-average GDP at PPP (112%, 104%). Malta has a GDP equal to the EU average (100%).

Italy, the Czech Republic, Cyprus and Slovenia are 10% below the IP average. From 10% to 20% lower - Lithuania, Estonia and Spain. From 20% to 30% below the EU average - Poland, Portugal, Hungary, Romania, Latvia and Croatia (70%). 40% to 50% below the EU average - Slovakia, Greece, Bulgaria (57%) and Turkey (63%). Indices from 48% to 32% have candidate countries Montenegro, Serbia, North Macedonia, Bosnia and Herzegovina and Albania.

The material well-being of households shows the indicator of actual consumption per capita (AIC). By and large, this figure is the same for most EU countries. Luxembourg has the highest AIC per capita (144%). Further - Norway (126%) and Germany (120%), Iceland and Switzerland (119%), Belgium (116%), Finland (112%). France and Switzerland (111%). Italy, Lithuania and Cyprus have AIC values close to the EU average of 98%, 97% and 95% respectively. Ireland has a per capita AIC 12% lower than the EU average despite having the second highest GDP in the EU. 15% lower per capita spending in the Czech Republic, Slovenia, Spain. Portugal Poland, Romania have AIC 84%, Estonia - 80%. 25-30% lower - Latvia, Greece, Croatia, Slovakia, Hungary (70%). In Turkey, household spending is 69% of the EU average. The lowest costs are in Albania (39%) (Table 1).

Table 1. Volume indices per capita, 2019-2021, (EU=100)

	Gross domestic product			Actual Individual Consumption		
	2019	2020	2021	2019	2020	2021
Luxembourg	251	261	268	146	141	144
Ireland	189	205	219	94	88	88
Belgium	126	133	133	115	120	119
Netherlands	127	130	130	113	115	115
Sweden	119	122	123	109	111	111
Austria	126	125	123	117	116	117
Belgium	118	119	120	114	114	116
Germany	121	123	120	122	124	120
Finland	109	114	112	111	114	112
EA19	106	105	105	106	15	104
France	106	104	104	109	110	111
Malta	103	97	100	86	82	83
Italy	97	94	95	100	97	98
Czech	93	93	92	85	85	85
Cyprus	93	90	91	97	97	95
Slovenia	89	89	90	83	82	85
Lithuania	84	88	89	93	95	97
Estonia	82	86	89	76	79	80
Spain	91	83	83	91	84	85
Poland	73	76	77	80	83	84
Portugal	79	76	75	86	84	84
Hungary	73	75	75	67	70	70
Romania	70	73	74	78	81	84
Latvia	69	72	72	71	73	76
Croatia	67	65	70	67	68	72
Slovakia	71	72	69	70	72	71
Greece	66	62	64	77	74	75
Bulgaria	53	55	57	58	60	65
Norway	147	142	167	128	127	126
Switzerland	153	154	155	123	122	119
Iceland	126	119	119	114	119	119
Turkey	59	61	63	65	66	69
Montenegro	50	45	48	60	59	60
Serbia	41	43	44	49	51	53
North Macedonia	38	38	42	43	43	51
Albania	30	31	32	38	39	39
Bosnia and Herzegovina	32	33	33	41	41	41

Source: Eurostat (prc_ppp_ind)

Despite decades of EU intervention, there is no convergence of the less developed regions of the southern member states. The situation is similar in the United States, where regional disparity persists despite relatively large transfers of resources to less developed regions.

The solution for less developed regions is innovation policy. However, the two previous program periods (2007-2013 and 2014-2020), one of the main goals of which was to support science and innovation, did not lead to the expected success in the policy of economic and social cohesion. Scientific studies have shown that the first models of economic development of regions associated growth with the accumulation of capital, then with the accumulation of knowledge, while emphasizing research (Romer, 1990; Romer, 1986) and human capital (Lucas, 1988). More recently, an explanation has been found for why some countries grow and others fail - it lies in the role played by institutions (organizing the process of governing structures) (Acemoglou and Robinson, 2012). The experience of the US and the EU shows that it is not enough to simply provide resources - innovations, which are not fish, but a fishing rod (tool) for catching fish, are crucial for a sustainable economy. Speaking of innovations, we mean investments in material and human capital, production and management technologies at the enterprise, and effective public administration. The importance of management for the effectiveness of investments should be emphasized.

Now is the time for further long-term growth and to overcome the middle income trap of the EU regions, not only because the EU is entering a new programming period 2021-2027, but because we are living in a period of Schumpeterian - innovative - economic growth, which is associated with serious changes (Schumpeter, 1934). Artificial intelligence will destroy today's economy. Experience shows that it is during periods of growth that convergence can be achieved. However, this should not be taken for granted. Dramatic change creates both opportunities and threats. Less developed regions have a chance to restructure their economies to take advantage of growing European and global demand. But they are also under threat from business and technology hubs that are attracting talent and investment, leaving peripheral regions far behind. Therefore, it is necessary to develop an innovative policy adequate to the challenges of the time. After all, a

policy that has not been able to bring the regions to the proper level of economic development over the past decades may not be suitable for the future.

There are four categories of regions:

1. Regions with the best performance. These are the capitals of the EU-12 countries that have grown rapidly and have surpassed the EU average GDP thanks to institutional changes, foreign direct investment, inclusion in value chains and investment in innovation.

2. Low-income fast growing CEE regions - the southern regions, whose GDP is still below the EU average. These regions lack absorptive capacity - the ability to absorb new things and apply it in business (Cohen and Levinthal, 1990). Societies in the southern regions are more traditional, and therefore more closed to innovation systems. In the age of globalization of the economy, only open systems survive in the conditions of such a scale of competition - open to changes, innovations, experiments. Readiness for change shows the level of trust in society, which will be low in hierarchical social systems. Therefore, without structural changes aimed at the formation of democratic institutions and institutions, economic growth is not possible in the conditions of the post-industrial development of civilization based on innovation. Without democratic changes, it is impossible to form an innovative infrastructure. The European Quality of Government Index (EQI) in these regions is lower than the EU average (European Quality of Government Index, EQI), is the result of new studies on corruption and governance at the regional level within the EU, conducted first in 2010 and then in 2013, 2017, 2021).

3. The regions stuck in the middle income trap are the southern and eastern post-Soviet regions that grew rapidly until 2008. The way out of the trap is the same democratization of public administration, which will lead to a reduction in non-market mechanisms for regulating the economy - the reduction of the public sector in the economy, the liberalization of business conditions, and the creation of conditions for fair competition. All these changes will lead to the creation of new private companies focused on finding high-margin industries, which currently means only one thing - innovative. There

is only one way out of the middle income trap - innovative production of goods and services based on intellectual property.

4. Low-income, low-growth regions profiting from low labor costs. Their growth will be linked to global economic growth, which will affect these regions linked to the global economy through convergence mechanisms. The problem is the same - weak democratic institutions do not promote competition and economic growth, which in turn would lead to democratic change. The main problem in these regions is that there is a vicious circle of low competitiveness and weak institutions. The way out will be in revolutionary structural changes in the economy and narrow specialization based on the natural and social advantages and resources of the region. In a world of high competition, narrowly specialized industries with a unique character survive.

Two extremes of regional innovation policy can be identified:

1. A strategic dynamic approach that involves coordinated actions and aims for real change. In this case, the policy serves its purpose as a lever for development. This approach has been used in Ireland and in Slovenia, where a "smart specialization" strategy has been used. The Program for Research in Third Level Institutions (PRTLI) is an Irish government program from 1998-2016 that provided financial support to institutes to develop world-class research in the humanities, natural sciences, engineering and social sciences (business and law) and commercialization of their results (PRTLI, 2004). PRTLI has been an integral part of the strategy to transform Ireland's economy into an innovative one. Over 45 world-class research centers and initiatives have been established, high quality research, and research capacity building, making Ireland an attractive destination for scientific careers.

2. Uncoordinated smaller-scale strategies, the scenario of which depends on state influence. State intervention can be both effective and hinder regional change. First of all, this is expressed in the difficulty of obtaining grants by applicants, when they are guided only by the rules of procedure, and not by a long-term perspective.

There is a third type of policy, so to speak, "intermediate", which has absorbed the features of the two types described above, which we consider optimal, because. it is suitable for all types of regions:

3. Experimenting with new, riskier, but more rewarding strategies, such as the Czech Science-to-Business Development Tax, the Polish Technology Development Credit, the idea of a quality seal for digital strategies (Seal of Excellence is awarded to project proposals submitted to Horizon 2020 – EU research and innovation funding program to help these projects find alternative funding), demand policy, non-technological innovation, support for local start-ups to enter the global market. These are only indicative measures and are not suitable for all regions.

Below are the conclusions and recommendations on innovation policy:

Education: Labor markets require broad educational reforms, and this is beyond the scope of European Structural & Investment Funds (ESIF) funding and will only have an impact in the long term. Results in the medium term are possible with the support of traditional education alliances with the business sector, which will ensure the employment of graduates. Curricula should be adapted to the demands of the labor market. Charitable foundations can also contribute to solving employment issues. Employment of graduates in the private sector should be a prerequisite for operational funding programs, failure to comply with which will lead to termination of support.

All regions can participate in creating ecosystems and supporting the creation of companies using both complementary and radical innovations. Only low-income, low-growth regions will not be able to meet this challenge. The innovation policy does not have a direct goal of reducing unemployment, but it definitely contributes to the creation of new jobs. The goal of the innovation policy of a middle-income country may be to expand into foreign markets and become more involved in global value chains. The problem that low-income, low-growth countries need to address is insufficient absorptive capacity. Funding for research and innovation through the €95.5 billion Horizon Europe program for 2021-2027 (Horizon Europe, 2022) will enable them to increase their competitive edge. In addition, the creation of

ecosystems requires less funding and financial instruments are used more efficiently.

It is also time to put into practice the slogan "avoid policy homogeneity and encourage experimentation". This will be facilitated both by the policy of demand and the special support for the competitiveness of the regions through participation in the Horizon Europe program and through funding from the European Structural and Investment Funds. Thanks to ESIF for the period 2014-2021 (European Structural and Investment Funds, 2022), 4 million small and medium-sized enterprises received support; 55.2 million people received employment assistance; energy production from renewable sources has been increased, while the annual primary energy consumption of public buildings has decreased by an amount equivalent to the annual energy consumption of 720,000 households; 2.3 million projects have helped rural SMEs become more competitive and create jobs in rural areas; more than 6,000 new jobs have been created in the fisheries sector.

It goes without saying that regulation should be based on developed normative legal acts. The more ambitious the policy, the greater the expected bonuses. A by-product of this approach will be to change the informal rules (risk aversion policy).

It is impossible not to mention digital strategies. All regions will have to go through digital transformation, invest in digital education, stimulate the creation of digital and smart strategies. The development of strategies and the launch of pilot projects with the support of ESIF can accelerate digitalization, a prime example of which is Estonia, which was the first to implement blockchain technology for creating e-government.

Institutions need to be improved. The first steps to improve institutions are formal rules, namely legislation and governance. The effectiveness of public administration and adopted laws depends on the degree of adaptation to changes. Therefore, ambitious strategies and financial support for regions with high resilience to change will not justify themselves. This is where smart specialization strategies come into play. Politicians preferred to keep the number of their supporters in their constituencies, so they used only previously tested tools.

Experts recommend identifying 1-2 Smart Specialization flagships. With the help of the tools of the 3S Strategy, regions can be offered the opportunity to choose 1-2 flagships. Flagships receiving support can be expected to mobilize the business sector.

Concluding remarks concern the role of the EU bodies - the Parliament and the European Commission - in the implementation of the cohesion policy aimed at helping the EU regions. Joint financing of operational programs by the European Union and the administrations of states and regions, primarily in the field of education and science, will provide that public-private partnership when it is necessary to balance supply and demand. The initiative from below - the private sector - guarantees the necessary demand and the not in vain of its satisfaction. Partnership means the mobilization of private non-profit funds, and not their full financing through EU structural and investment funds.

EU assistance should also be in simplifying the rules of accounting for enterprises. The format of this assistance is to conduct inspections in the regions and at the state level. The implementation of the Corporate Social Responsibility Strategy also solves the issues of simplifying bureaucratic procedures. Support from the EU for companies that are focused on the protection of human rights and the environment, therefore, they themselves solve social and environmental issues that were previously within the competence of state bodies. Such a public-private partnership ultimately makes companies more sustainable and innovative, and the economy of the region, the country and the EU as a whole - sustainable.

For the convergence of EU regions in the programming period 2021-2027. it is necessary that innovation policy become more ambitious, risky and ready for experimentation. It was a mistake not to address issues of institutional change: the provision of only tax incentives and grants without market reforms will not lead to the creation of companies that can compete in the global market. If such companies are able to create a unique product with high added value, then they will be under the threat of their direct or indirect (through management) nationalization. The operation of such successful companies will still require changes in the legal regulation of the economic sphere, both

within the country and in foreign economic activity. Without the creation of competitive enterprises that create demand for highly skilled labor, investment in human capital will only lead to a brain drain. The development of national research support programs that are not provided with financial support from state or private investors and without the cultivation of highly qualified personnel through the exchange of experience, international internships, and technology transfer will not lead to the desired result.

The problems of conducting innovation policy in less developed regions include: insufficient human capital and the development of institutional infrastructure for business development; knowledge gained in advanced countries should not cause idiosyncrasy, i.e. should be applied taking into account the characteristics of the regions; regions should support their producers and at the same time not be closed. External intervention will be productive if the regions themselves manage the process and are ready to accept and implement innovations that there have been changes in the usual way. Otherwise, resistance to change will lead to the fact that the rules will be violated and strategies will not be effective.

An analysis of the EU innovation policy in relation to the regions allows us to conclude that the set of its measures did not correspond to the specific problems of the regions and the planned changes. The issue of good governance turned out to be much more important than the issue of additional public investment. Institutions and mechanisms are also important for the diversification of production.

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CHAPTER 5

DEVELOPMENT OF SKILLS AND PROCESSES RELATED TO READING IN PRIMARY SCHOOL

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Introduction

Reading is a very complex process that is not natural in human life but can be acquired later, can affect the whole life of the individual, and that provides competence in social, cultural, and cognitive areas (Keskin and Akyol, 2014). Reading is the interpretation and vocalization of writing. Therefore, it is an important skill that is necessary for every aspect of an individual's life. Reading is a lifelong process learned and developed from the first grade of primary school. However, vocalizing letters cannot be considered reading. The vocalization of a text written in an unknown language does not mean a complete reading even if the text is considered to be read. Because making sense is the most basic and necessary part of reading. Reading the text correctly, with a certain fluency and intelligibility means reading in the real sense. Moreover, both the reader and the listener need to read the text with the right intonation and emphasis.

In many studies in the literature, reading is explained as receiving, interpreting, and learning information in written texts, analyzing written letters and signs, arranging them in the mind, vocalizing, and understanding. These explanations emphasize two different aspects of reading. The first is recognizing letters, combining them with sounds, arranging them in the mind, making sense, and vocalizing, which includes the basic operations of the reading process. The second is discovering the content of the written text, which includes the comprehension processes of the reading process, searching for knowledge and meanings, interpreting, and learning. The operations in the first stage are about teaching reading, and those in the second stage are about reading education. In other words, reading teaching and

reading education are different from each other. To reveal this difference, the first is called reading education and the second is called reading education. Primary reading instruction is about learning to read, and reading education is about reading to learn. In other words, the first focuses on teaching reading, and the second focuses on reading to learn (Güneş, 2017).

> The skills to be gained regarding this process are undoubtedly acquired through studies to be carried out starting from the first grade of primary school. The primary literacy process is one of the most substantial experiences of the individual in his educational life. Literacy, which forms the basis of other learning, can be considered the first and perhaps the most important step of the education process that takes many years. Therefore, the success of the first literacy education is also the determinant of the success of the education life that will continue afterward (Erbasan and Erbasan, 2020).

When it comes to primary school and especially the first graders who have just learned to read and write, the literacy process is done in a series of stages. This process is explained in the Turkish Language Curriculum with the following stages (MEB, 2019a):

1. Primary literacy preparation:

Listening Education Studies

Developing Finger, Hand, and Arm Muscles

Painting and Line Studies

2. Primary literacy initiation and progression

Sensing, recognizing, and distinguishing sound

Reading and writing letters

Creating syllables from letters, words from syllables, sentences from words

Text reading: Texts should not be prepared from sentences that are not meaningful to the student and should not be read. Rhymes, riddles, counting, mania, and lullabies are excluded from this scope.

3. Independent reading and writing: Reading exercises (quiet and aloud, correct pronunciation, stress intonation, expressive reading, reading in chorus, text) to improve the level of fluent reading under the guidance of the teacher for at least two weeks after all the sounds have been grasped and before starting the theme. speaking on it, etc.) should be done. In this process, teachers can carry out studies to develop students' fluent reading skills, taking individual differences into account. It is recommended that rhymes, which contribute to the language development of students (correct pronunciation, fluency, distinguishing sounds, etc.), should be used in primary literacy teaching. Rhymes, numbers, lullabies, riddles, and manias should be used frequently to improve reading. In the first grade, the reading and writing process is completed. In the 2nd grade, students are given activities to improve their literacy skills. In the 3rd and 4th grades, writing exercises are done for students to gain their writing habits.

About this process specified in the program, the expected achievements of students at each grade level are also explained. If we summarize the achievements related to reading:

1st Grade Outcomes: There are 19 outcomes of Reading Preparation (5 outcomes), Fluent Reading outcomes (7 outcomes), and Comprehension outcomes (7 outcomes).

2nd Grade Learning Outcomes: There are 19 learning outcomes: Fluent Reading (6 outcomes), Vocabulary (3 outcomes), and Comprehension (10 outcomes).

3rd Grade Outcomes: There are 28 learning outcomes: Fluent Reading (6 outcomes), Vocabulary (4 outcomes), and Comprehension (18 outcomes).

4th Grade Outcomes: There are 37 learning outcomes: Fluent Reading (6 outcomes), Vocabulary outcomes (6 outcomes), and Comprehension outcomes (25 outcomes).

When these acquisitions are examined, we can see that as the grade level increases, the acquisitions diversify and include more abstract and complex skills. Vocabulary acquisitions, which are not in the 1st grade but begin as of the 2nd grade, are the acquisitions that aim to develop the student's vocabulary and teach the structures of words and their

meaning relations. With comprehension gains, they are higher-level gains such as analyzing, interpreting, explaining, and entering into details of the texts that are read more. All these achievements aim to enable students to use the language effectively. It is aimed not only to vocalize a written text but also to understand, explain and analyze processes. Moreover, it is aimed to make the reading appropriate. The skill served by all these studies in the program is reading skills.

Reading is a versatile skill that has both cognitive, affective, and kinetic aspects. As can be seen, the program mostly deals with cognitive and kinetic dimensions. However, it is important to consider the process of developing reading emotionally. In the following sections, we will cover some important concepts and processes related to reading skills.

Reading Skill

Skill In the TDK Contemporary Turkish Dictionary, "The ability of a person to accomplish a task and to conclude a process by the purpose, depending on his/her disposition and education, is dexterity." is defined as. Since reading is a skill that develops depending on disposition and learning, it is evaluated within the scope of the skill. One of the basic skills counted for special purposes in the MEB Turkish Language Curriculum is reading skill (MEB, 2019a). According to Grabe and Stoller (2002), reading skill is defined as making sense of a reading text and interpreting it. The acquisition of reading skills depends on reading the text correctly and clearly, understanding and expressing the read text by the reader. Reading is a substantial skill for students in schools. This is an important skill that can affect success in both language classes and other subjects.

In a study, it was stated that reading skills support each other with other language skills (speaking, writing, and listening) and are nearby (Arıcı and Taşkın, 2019). In another study, it was stated that fluent reading skill is related to reading comprehension and this skill differs according to socioeconomic level (Baştuğ and Keskin, 2012). Similarly, in studies, students' reading skills were compared with their phonological awareness skills (Erdoğan, 2012); with the readability levels of the texts (Durukan, 2014); It has been revealed that it is associated with multiple intelligence profiles (Demir et al., 2011).

Reading skill is expressed in levels that develop in stages and turn into goals as they develop. In this sense, it is important to introduce the reading styles, which are the goals and studies that are carried out to achieve them. It may be useful to consider the most important of these, fluent reading, and prosodic reading, which is seen as a dimension of it.

Fluent Reading

Fluent reading is one of the ultimate goals to be achieved in the literacy process. Because fluency is an important dimension that expresses a certain speed, emphasis, and comprehension in reading. Kuhn et al. (2010) discussed the concept of fluency with four different definitions, as can be seen below (as cited in Hosp & Suchey, 2014):

1. It can be defined as accurate and automatic word reading;

2. It can be defined as prosody;

3. It can be defined as skilled reading. This can be accepted as the broadest definition because it encompasses being able to decipher and comprehend at the same time, as well as using the appropriate expression while reading correctly and at sufficient speed (Samuels, 2006).

4. In addition, the concept is defined as a bridge from word reading to understanding

The realization of fluent reading depends on the acquisition of the first stages of reading (phonemic awareness, phonetic decoding, and word recognition) at a sufficient level. There are two purposes in the reading process. The first goal is for the student to recognize the written word. The second aim is for the student to construct a meaning for the word he uttered, in other words, to understand the word (Akyol and Kodan, 2016).

Because reading is such a complex process, many researchers try to understand and explain the fluent reading process by analyzing it according to a set of component skills. To break it down into component skills, researchers have suggested at least six general component skills and knowledge areas:

1. Auto-recognition skills

2. Vocabulary and structural knowledge

3. Knowledge of official discourse structure

4. Content/world background information

5. Synthesis and assessment skills/strategies

6. Monitoring metacognitive knowledge and skills (Grabe, 1991).

When fluent readers read, they put all these components together in a complex process. Exactly how they do this is still the subject of great debate and research; however, we do know that all these systems play a role in the process. Fluent readers recognize the words they see in writing and gain meaning and use their knowledge of the structure of the language to start forming a mental idea about the subject (Ediger, 2001). Fluent reading, which is mentioned many times in the primary school Turkish curriculum, is a goal that is ultimately desired to be achieved. Of course, the student needs to develop all-around skills to acquire these skills in primary school and beyond. It will be beneficial for the student to do a lot of reading, rhythmic reading exercises, and speed reading texts. In addition, it is important to consider the physical elements of reading (eye muscles, focus area, sharpness angle, and reading distance) and mental elements (image center, recognition center, image interpretation area, reading center, and speech center) (Kurudayıoğlu, 2011). These elements are not elements that can be directly interfered with. However, the development of reading skills is directly related to them.

Prosodic Reading

TDK defines prosody as "all of the phonetic elements such as stress, pause, melody". It is also possible to describe the prosody, which expresses the tonal and rhythmic dimensions of speech and manifests itself in oral reading, as the melody of the spoken language (Aytaç, 2017). Prosody interacts with syntax, lexical meaning, and linguistics

in oral texts; It is a general term that includes intonation, rhythm, tempo, loudness, and pauses (Wennerstrom, 2001). Prosodic speech can also be considered as an intelligible and gripping speech that leaves an impression on the audience. Therefore, prosody also includes a certain rhythm and speed in reading. Seen as a dimension of fluent reading, prosody serves students' reading comprehension, interpretation, and interpretation.

It has been determined in studies that prosodic reading is related to many processes related to language skills, affects many processes, and mediates the relationships between different features. Studies are showing that prosodic reading affects fluent reading and reading comprehension mediates between these two or is related to these concepts (Aytaç, 2017; Çetinkaya et al., 2016; Baştuğ and Keskin, 2012). In addition, a relationship was found between students' reading aloud and speaking prosody (Keskin et al., 2013). Therefore, it is important to strengthen students' reading prosody starting from primary school, as it will positively affect their reading skills and linguistic skills in general.

Both in the curriculum and most of the studies in the literature, the cognitive and kinetic aspects of reading are discussed about reading. However, for students to read consciously and willingly and to understand what they read, they must also be ready to read emotionally. In recent studies, especially the concepts of reading attitude and motivation stand out.

Reading Attitude

The fact that reading skill has a critical role from the first years of school life imposes important responsibilities on teachers and parents in terms of developing a positive reading attitude toward children and thus become good readers (Kocaarslan, 2016). Because without developing a positive attitude towards reading, individuals cannot be expected to be effective readers. Attitude consists of feelings, thoughts, and behaviors related to an object. However, these dimensions are not independent of each other. They mutually affect each other, are affected by each other, and there is often a consistency between them (Uzun and Sağlam, 2006). One of the most important affective characteristics of

students regarding a course or subject area is their attitudes towards that course or area. While positive attitudes make students more successful in the related field, negative attitudes can cause failure (Kazazoğlu, 2013). These attitudes are for a course or field, but also reading, writing, processing, etc. It can also be for a skill. Reading attitude is the degree to which a person has a positive or negative disposition towards reading. (Wozniak, 2010, p.34). Attitude towards reading refers to the student's approach to various aspects of reading. The positive or negative reading attitude, which an individual develops through experiences and with the influence of the environment, affects the process of gaining and developing reading skills (Biçer and Duruhan, 2014). It takes a long time to develop an attitude towards reading. The importance of schools and families in this process is undeniable. The development of students' attitudes towards reading also affects or is affected by many variables in the education process.

In the literature, it has been seen that many variables are related to or affected by students' attitudes toward reading. Students' attitudes towards reading with their reading comprehension skills (Sallabaş, 2008); with students' learning styles (Biçer and Duruhan, 2014); their writing dispositions and academic achievements in Turkish lessons (Baş and Şahin, 2012); It has been observed that there is a relationship between the levels of using punctuation marks (Özkara and İzci, 2013). In addition, the cooperative learning method (Açıkgöz and Güngör, 2006); screen reading (Yaman and Dağtaş, 2013); front organizers (Çakıcı, 2007); It has been seen that the use of contemporary information and communication tools or the state of having these tools (Türkyılmaz, 2012) affect students' attitudes towards reading.

In addition, some important results were obtained in studies describing students' attitudes toward reading. Balcı (2009) stated that primary school students' attitudes towards reading are generally at a "high" level; stated that the attitude differs in favor of female students and the students in the middle socioeconomic environment have higher attitude levels. As a result of a meta-analysis study conducted using 26 different studies, it was seen that all student-centered practices used in the studies had a positive effect on students' reading attitudes and the individual effect size values varied between g = 1.42 and g = 0.03 (Kurnaz and Korkutan, 2023). As can be seen, attitude towards reading is a concept that is related to many variables related to students and affects many characteristics. It can be said that it would be beneficial to

develop students' attitudes towards reading, especially to improve reading skills in primary school and later students.

Reading Motivation

Reading is considered a basic cultural skill that greatly affects future academic success and participation in social life (Schiefele et al., 2012). Therefore, improving reading skills is a fundamental goal in primary school. However, to design optimal reading instruction, it is necessary to understand the longitudinal development of reading achievement (skill) and reading motivation (willpower) and how these constructs affect each other over time (Hebbecker et al., 2019). Because motivation to read is related to reading skills. Studies conducted over a long period have shown that reading skill and reading-related variables (reading comprehension, reading level, reading speed, fluent reading, prosodic reading) are especially related to the reading motivation of primary school students and students studying at different levels. Moreover, it has been observed that the factors for the development of students' reading motivation are also effective at all levels, especially in primary school. A study revealed that teachers, family, friends, books, environment, and activity factors have a decisive effect on arousing students' desire to read. Moreover, all these factors are mostly on primary school students; it was found to be least effective on high school students (Ülper, 2011).

Important results have been obtained in research on motivation to read. A study found that intrinsic motivation positively affects reading comprehension; showed that extrinsic motivation, excluding the competition factor, had a negative effect. It was determined that students read mostly because of extrinsic motivation, and intrinsic motivation was effective in reading based on personal preferences (Yıldız and Akyol, 2011). In another study, a 2nd-grade primary school student with learning difficulties was handled; Interesting texts, rewards, and praise were used to improve the student's reading motivation. As a result of the applications, there has been a significant increase in the student's reading motivation level (Akyol and Sural, 2020). According to another study, reading motivation and reading comprehension are significant predictors of students' academic success. In addition, a positive relationship was found between academic

achievement and reading motivation (Yıldız, 2013; Kızgın and Baştuğ, 2020). It is seen that there is a relationship between reading levels and reading motivation sub-dimensions (Bozkurt and Memiş, 2013). In addition, it has been determined that there is a high level and positive relationship between students' reading attitudes and reading motivation (Şahin, 2019).

In some studies, students' reading motivations were significantly determined by gender, grade level, academic achievement, family income level, education level of parents, whether there is a library or library at home, whether someone is reading a book, the number of books reads per year, and whether they use the internet or not. (Ülper, 2011; Şahin, 2019; Katrancı, 2015; Kurnaz and Yıldız, 2015; Hebbecker et al., 2019). Considering these factors will help students to be motivated to read from primary school and thus to become readers. In this context, many practical studies are mentioned. To encourage students to read, books should be presented to them by teachers and families, they should be modeled as readers, they should be trusted and given autonomy, children should be offered entertaining books that are suitable for their interests, and they should be supported in choosing the right friends (Ülper, 2011).

Conclusion

This study aimed to introduce the skills and concepts related to the reading process of primary school students. The concepts of reading skills, fluent reading, and prosodic reading, which are emphasized in the literature, are discussed especially for them to be effective readers. The development of reading skills within the framework of these concepts will contribute to students' being individuals who can read effectively and improve their linguistic skills. The development of reading skills will enable students to become individuals who use language effectively and affect their academic success in all their courses. Since the student's reading comprehension skills will increase, he will be more successful in the courses he is studying and in the exams related to those courses. This success will also be demonstrated in international exams. One of the skills measured in the internationally recognized PISA exam, in which students from 79 countries participate, is reading skill. According to the PISA Turkey Preliminary Report,

Turkey ranks 40th in reading skills among 79 countries participating in PISA 2018 (MEB, 2019b). This result revealed that reading skills should be given importance.

Another emphasis in the study is the affective concepts related to reading. In this sense, the concepts of reading motivation and reading attitude, which has been emphasized in the literature in recent years, are discussed. Because both the curricula and the literature focus more on the cognitive and kinetic aspects of reading skills. However, it is not possible for students who have not developed a positive attitude towards reading and are not motivated to read effectively.

It can be said that the acquisition of reading skills in a healthy way, the transformation of reading into a pleasure and a habit, and the feeling of benefit related to it are effective in the development of students' reading attitudes. Students who cannot develop a positive attitude towards reading cannot be expected to see reading as a lifelong learning tool. It can be said that studies on the variables affecting reading attitudes will contribute to improving students' reading attitudes positively (Can et al., 2016). The same can be said for motivation. Motivation has an impact on students' learning preferences and academic achievement. Motivation is an effect that makes students want to learn, understand and work. Addressing students' reading skills in every aspect and considering the factors in the literature will contribute to this process (Türkben and Gündeger, 2021).

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CHAPTER 6

THE IMPACT OF DISRUPTIVE AND TURBULENT ENVIRONMENTS ON MULTINATIONAL CORPORATIONS (MNCS) AND THEIR BRANCHES FROM AN INTERNATIONAL RELATIONS POINT OF VIEW

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Introduction

The recent upheavals in the worldwide economy have caused elevated obstacles for cross-border commerce, which may have decreased the advantages and credibility of global integrated approaches. We study the influence of three major disruptions (diminished mobility, conflicting regulations, and anti-globalization attitudes) on multinational corporations, specifically their overseas divisions. These disruptions necessitate a reassessment of global strategy theories and the interaction between businesses and politics. By utilizing the international relations perspectives of realism, liberalism, and constructivism, we shed light on the disruptions and provide insight into how strategy scholarship can guide companies in responding to such external challenges.

The recent disruptions in the worldwide economy present a challenge for social science scholars, necessitating a reassessment of their knowledge of the external environment in which their studies are grounded and a development and testing of theories regarding the relationship between organizations and their surroundings. In addition to the conventional challenge of institutional duality (variances in national institutional structures), further difficulties arise from conflicting home country and local pressures. To tackle these conflicting pressures, we suggest integrating institutional theory with international relations theories in political science.

We focus on the impact of these disruptions on the global strategies of multinational companies (MNCs). We refer in this study to the concept of high turbulence environment (Ansoff & Sullivan ,1993) and the research on MNCs posture in a turbulent environment (Bonelli, 2017).

In recent decades, multinational corporations (MNCs) have been able to enhance their operational integration across locations due to the lowering of barriers. However, this trend may be reversed if globalization shifts in the opposite direction. For instance, the COVID-19 pandemic, with its travel restrictions, granted greater independence to the branches of MNCs, leading to uncertainties about the future of integration within multinational companies (MNCs). In the long term, MNCs may face the loss of some of their competitive benefits, necessitating restructuring of their supply chains or the introduction of new organizational forms to remain competitive.

We examine the impact of disruptions on five dimensions of branches management strategy and explore how political processes shape these disruptions and corporate responses. Drawing from the international relations perspectives of realism, liberalism, and constructivism, we contend that these perspectives provide differing explanations of the major disruptions and the impact of MNCs on and by these disruptions. By incorporating international relations perspectives into strategy research, we can obtain a deeper insight into the role of MNCs and their branches in political processes and how politics influence MNCs.

2.Three different scenarios of disruption

The global economy has recently been affected by three significant disruptions - reduced mobility of people, varied national regulatory institutions, and anti-globalization populism - that could hinder the effectiveness and legitimacy of integrated global strategies.

The above-mentioned types of disruptions are distinct from natural disasters or industrial accidents, as they stem from social and political processes and have a worldwide impact, outside the control of the MNC.

The relationship between technology and the environment, including climate change, is also influenced by these social and political processes, and they can lead to interdependent and potentially vicious cycles for multinational companies MNCs).

As the effects of these disruptions are still ongoing, it is unclear whether they are temporary or long-lasting. Regardless, they pose intriguing questions for analysis. We categorize these disruptions into different scenarios due to this uncertainty.

Scenario of Disruption # 1. Barriers to travel persist, therefore inhibiting the mobility of people

The COVID-19 pandemic caused major disruptions to cross-border business in spring 2020 with the introduction of travel restrictions by countries to curb the virus's spread (Chinazzi et al., 2020). Despite the lifting or replacement of restrictions with more targeted regulations such as health screenings or quarantine, there remains a possibility that policymakers may enact regulations that escalate the costs of business travel. This may occur due to concerns over the spread of infectious diseases and the impact of air travel on climate change. Negative test results, specific vaccines, or quarantine may be required by some countries for entry, while taxes on fuels for aircraft or fees charged at airports may increase due to climate change concerns.

The outbreak of COVID-19 in early 2020 resulted in countries imposing travel restrictions, greatly hindering cross-border commerce. As restrictions are lifted, policymakers are facing pressure to keep or implement regulations that raise the cost of business travel for reasons such as preventing the spread of contagious diseases, reducing emissions from air travel, and managing immigration. These issues also impact personal travel decisions and result in increased costs and difficulties for MNCs. This may lead to changes in international HRM practices and global strategies, including a greater reliance on virtual teams and technology to facilitate communication and collaboration across locations. These changes could significantly alter MNCs' organizational structures and processes.

For multinational corporations (MNCs), the challenges posed by travel restrictions mainly involve practical concerns, for which they may pursue organizational solutions, such as process enhancements or modifications in coordination practices. Unlike the other disruptions, travel barriers alone do not typically lead to challenges to their legitimacy or the need for greater adaptation to local circumstances.

Scenario of Disruption # 2. National responses to major challenges will change country by country, thus creating divergent national institutes.

The way that national governments deal with the world's major issues, known as "grand challenges," will differ, as there is no efficient global coordination or governing body. These challenges include environmental protection and climate change, public health in times of communicable disease outbreaks, economic and social development, and protection of personal data. While these challenges impact all countries, the response of governments will vary based on their national economic and social structures and values. This means that multinational companies need to prepare for differing regulations in the countries they operate in. Regulatory differences can be persistent due to genuine differences or political reasons, but they may also decrease over time as innovations spread from early adopters. For example, the most effective public health measures, such as wearing masks and practicing social distancing, originated in Asia in early 2020 and have been embraced in other regions, although often with a delay.

Another illustration of institutional differences is in digital data regulations. The EU's General Data Protection Regulation applies to all companies that collect data from individuals in the EU, even if they do not have a physical presence there and only attract customers from the EU. This mandates that companies either differentiate their data for EU and non-EU clients or alter their data management practices globally. The regulations for artificial intelligence are also differing between the EU, the USA, and other nations, while China's Data Security Law, which came into effect in 2021, requires data to be stored within the country and permits authorities access upon request. This poses difficulties for MNCs in managing real-time data and sharing data with international partners, potentially impeding integrated data management and worldwide internet platforms. The institutional differences call for MNCs to customize their products and processes to comply with local regulations and sustain legitimacy with stakeholders, making globally integrated strategies more challenging to execute, but not undermining their legitimacy.

Scenario of Disruption #3. Anti-globalization populism will persist, amplifying challenges ofmaintaining legitimacy in multiple locations

Before the COVID-19 pandemic, the rise of anti-globalization populism had been observed because of certain groups feeling marginalized or not benefiting from globalization. Low-skilled workers in advanced economies and traditional manufacturing industries are some examples (Autor, Dorn, & Hanson, 2013; Meyer, 2017; Rodrik, 2018). Populist politicians have gained political power and influenced institutions with the help of social media in several countries worldwide (Devinney & Hartwell, 2020). Their growing influence has led to an increase in nationalist policies, economic protectionism, and tensions between the world's largest economies (Witt, 2019a, 2019b).

In recent years, there has been a growing trend towards economic protectionism, reversing the trend of globalization that dominated the previous two decades. With the rise of anti-globalization sentiments and populism, countries, including some in the EU, have implemented stricter export controls, especially during the early stages of the COVID-19 pandemic (UNCTAD, 2020). The controversy surrounding the USA's pressure on 3M to cancel contracts for non-US customers highlighted the vulnerability of relying on other nations for essential supplies, resulting in a push to bring production and sourcing closer to home, favoring friendly nations. However, this would limit the benefits of global value chains such as cost reduction, increased flexibility, and faster innovation (Gereffi, 2020; Miroudot, 2020).

Rising anti-globalization populism has led to a heightened level of geopolitical tensions, particularly between the US and China, as well as between the EU and Russia. The strength of political relationships between nations influences the institutional environment for multinational corporations (Bertrand, Betschinger, & Settles, 2016). A company's reputation can often be linked to the quality of its cross-border political relationships and the strength of its connections with political leaders. Companies may face restrictions imposed by home countries, such as the restrictions placed on Chinese companies like Huawei and Tiktok by the USA (Hufbauer & Jung, 2020), or must comply with host country regulations and norms, like US companies in China with regards to data management and political content (Stevens et al., 2016).

Institutional pressures may extend beyond national borders, such as corruption and labor standards, and may conflict with local norms and practices (Cuervo-Cazurra, Mudambi, & Pedersen, 2019a; Li & Reuer, 2021). The pressure from home countries on companies to avoid certain activities or operate in certain locations, and the host countries' ban on companies based on social pressure from their home country, often result in conflicts between the institutional pressures of the home and host countries. This was recently seen in the case of companies such as H&M and Nike, which were banned in China due to their decision to stop sourcing cotton from Xinjiang.

For multinational corporations (MNCs), populism can pose a significant challenge to their operations. Populist sentiments often question the legitimacy of global activities carried out by these companies, requiring them to navigate the political landscape with caution. MNCs must be strategic in their approach and avoid engaging in high-profile activities in countries that are not favored by their home country. Moreover, they must address the legitimacy of their operations, acquisitions, and local practices in host countries to maintain a positive reputation and credibility with stakeholders.

3.The MNCs Branches Network

The discussion of the impacts of recent disruptions on international business suggests a likely rise in the significance of distance (Coté et al., 2020) in various forms. The implementation of travel restrictions due to COVID-19 has created operational challenges for multinational corporations. The variation of institutional frameworks across countries calls for more localized modifications, making it difficult for these organizations to maintain the efficiency of their globally integrated processes. Anti-globalization populism challenges the legitimacy of MNCs' worldwide strategies. In the following section, we will examine the effects of these disruptions on MNC branches, focusing on five aspects of their operations as identified by Shotter, A.S.P (2020).

3.1 The Branch Scope

The mandates of branches within MNCs vary and are subject to change, influenced by factors such as the MNC's global

organizational structure and strategy, the relative importance placed on global integration and local adaptation, and the autonomy given to subsidiaries to shape their own strategies (Birkinshaw & Hood, 1998; Bartlett & Ghoshal, 1989; Ambos, Asakawa, & Ambos, 2011; Wang, Luo, Lu, Sun, & Maksimov, 2014). The recent changes in the business landscape may cause a shift in the balance between worldwide integration and localized adaptation. The restrictions on travel can impact operations without the need for substantial alterations to subsidiary operations, however, the variation in national regulations necessitates the need for adaptation and may boost the demand for subsidiary independence. Populist leaders promoting localization of production and inputs can lead to significant strategic changes, leaving strategy researchers to ponder the effect on the global-local balance, organizational processes, and subsidiary-headquarters decision making. These changes may be initiated by MNC' managers and require a shift in power towards the subsidiaries. Thus, future research may focus on theories such as subsidiary entrepreneurship, resource dependence, and attention-based view, which allow for a more distributed locus of control and power within the subsidiaries (Conroy, Collings, & Clancy, 2019; Cuervo-Cazurra, Mudambi, & Pedersen, 2019b; Bouquet & Birkinshaw, 2008).

3.2 Creation and sharing of knowledge

From an institutional perspective, the disruption of global norms and rules due to the pandemic may lead to changes in the power dynamics between headquarters and branches. Branches may have more bargaining power and decision-making authority in the absence of strong global norms and rules, leading to an increased decentralization of the MNC. However, it is also possible that the crisis could lead to an increased role for headquarters in ensuring coordination and consistency across branches. The balance between centralization and decentralization will depend on the specific context and the organizational structure of the MNC.

Overall, the pandemic has disrupted the way in which MNCs manage knowledge, both in terms of the flow of information and in terms of the power dynamics between headquarters and branches. MNCs need to be proactive in adapting to these changes and finding new ways to manage knowledge effectively. This may involve the use of digital technologies to facilitate communication and collaboration,

as well as the development of new institutional arrangements to ensure coordination and consistency across branches. By doing so, MNCs can maintain their competitive advantage and continue to thrive in a rapidly changing global business environment.

3.3 Organizational Practices of the Branches

The practices of a MNC branch are shaped by both the corporate headquarters and the local context, with institutional duality being a central focus of research on MNC practices (Kostova & Roth, 2002). Multinational corporations strive for uniform practices across all branches, but local institutional forces can impede their ability to implement these practices globally. The recent pandemic-related disruptions may result in decreased success in the transfer of practices, lower compatibility of global practices in local contexts, and reduced worldwide legitimacy for standardizing practices. Previous research has analyzed a range of organizational practices, including quality control, staffing, human resource management, and corporate social and environmental responsibility. The pandemic has further expanded the scope of HRM practices to include public health and data management, as these are essential for taking advantage of digital technology and establishing alternative modes of communication and organization. It is important for future research to investigate how multinational corporations adjust or revise their standardized practices in response to differences in institutional structures or political intervention. A question of particular interest is whether MNCs pursue early adoption of new regulations, such as those aimed at addressing climate change, to improve their competencies, or if they opt for institutional arbitrage to increase their profitability, at least in the short term (Bass & Grøgaard, 2021).

3.4 Local Stakeholders

Disruptions create difficulties for multinational corporations (MNCs) in their relationships with local stakeholders. These relationships are crucial for branches to overcome their disadvantage of institutional barriers, lack of market understanding, and limited political connections (Sun, Doh, Rajwani, & Siegel, 2021). Recent studies have highlighted the significance of non-market strategies, including social engagement and political involvement in host

societies, for MNC subsidiaries (Choudhury, Geraghty, & Khanna, 2012; De Villa, Rajwani, Lawton, & Mellahi, 2019). However, these interactions become more complicated when there are conflicting institutional pressures in home and host countries.

Multinational corporations can adopt various strategies to reconcile the tensions arising from conflicting institutional pressures. One approach is for the branches of an MNC to attempt to influence the regulatory landscape in the host country, thereby reducing regulatory variability and the necessity for varying practices across operations. These branches may seek to engage with political figures who support unified responses, but the success of such efforts in a world characterized by growing political tensions is uncertain. Secondly, MNCs may grant more autonomy to their branches for local social engagement, which can improve their legitimacy in the host society (Zhang & Luo, 2013; Zhao, Park, & Zhou, 2014). The localization of corporate social responsibility (CSR) may result in practices that differ from those elsewhere in the multinational corporation, potentially compromising its shared values and practices. This raises the issue of how much latitude subsidiaries can have in determining their own CSR practices. Finally, MNC subsidiaries may opt for low-profile strategies, such as divestment or relying on contracts with local firms, to avoid the attention of political actors. However, the effectiveness of such strategies in a global environment with extensive digital connectivity is uncertain.

3.5 Individual Actors

The outcomes of a branch are determined by the decisions and actions of its managers, experts, and employees (Contractor et al., 2019; O'Brien et al., 2019). These individuals are shaped by their personal characteristics, past experiences, and styles of leadership. The impact of big disruptions on their activities and the skills they require is uncertain, but it may hasten the trend towards localization of talent.

First, the reduction in travel limits individuals' ability to act as boundary spanners in person. As a result, managers with strong cross-cultural abilities may need to facilitate and coordinate virtual meetings between internal and external teams from different countries (Caligiuri et al., 2020; Tippmann et al., 2021).

Secondly, the expansion of disparities in regulations will lead to a greater disparity of information between the main office and its branches. As a result, branch leaders must engage in more frequent communication with headquarters regarding regulatory changes and the political mechanisms behind them. Concurrently, they must devise cohesive solutions that consider the differing regulatory circumstances.

Thirdly, the advent of populism may subject branch managers to personal political pressures, necessitating their ability to interact with non-market participants such as politicians or journalists. Further research should investigate the personality traits, competencies, leadership methods, and actions of branch managers that are most effective in maintaining local relationships during periods of disruption.

3.6 Political Science Approach

The big disruptions - including reduced mobility, varied institutional regulations, and growing anti-globalization sentiments - are closely linked to political events at both national and international levels. Thus, to gain a better understanding of how these disruptions will affect MNCs' global strategies, it's important to examine the political processes and inter-government tensions through the lens of political science, specifically international relations. This viewpoint places emphasis on the intricate objectives and driving forces of governments, providing a more refined understanding of MNCs' involvement with these disruptions. It enhances existing strategic management theories that concentrate solely on the interactions between MNCs and governments, without taking into consideration the latter's decision-making criteria. An international relations-based approach to strategy will aid in illuminating how MNCs and their branches manage these significant disruptions.

3.7 Three Theoretical Approaches in International Relations

According to international relations theory, there are three main perspectives: realism, liberalism, and constructivism. The core idea of realism is power, meaning a state's ability to exercise control over others (Barnett & Duvall, 2005; Diez, Bode, & Da Costa, 2011).

States strive to maintain or increase their power compared to other states to protect their national interests and survive as independent entities in a world without a higher authority (e.g., Korab-Karpowicz, 2017; Morgenthau, 1948; Waltz, 1979). This perspective views international relations as a competition that each state tries to win (Witt, 2019). The Realist perspective does not explicitly account for non-state actors like MNCs and their branches, which are representatives of their home nations. For example, a foreign branch manages resources within a foreign nation and contributes to the host economy, but also exerts influence over certain aspects of it.As economic power supports military, cultural, and other forms of power (Baldwin, 1985), the activities of MNC branches can affect the power dynamics between countries (Lenihan, 2018).

These theoretical perspectives have had a significant impact on recent debates regarding the role of state-owned enterprises (such as Cuervo-Cazurra & Li, 2021; Li et al., 2018; Li, Xia, & Lin, 2017) and on the concept of techno-nationalism (Luo, 2021).

The liberalism perspective in international relations, in contrast to realism, prioritizes the processes that promote stability and peace globally, including democratic governance, economic interdependence, and supra-national organizations. Contrary to realism, which perceives international relations as a power-focused zero-sum game, liberalism views international relations as a positive-sum game that benefits people globally through trade, technology exchange, and efficient resource utilization. Within this framework, MNC branches are viewed as instruments that facilitate these benefits and promote peaceful relations between nations. This viewpoint aligns with international business studies that emphasize the favorable impact of foreign direct investment.

The constructivist perspective in international relations theory highlights the importance of social construction in shaping reality. Unlike realism and liberalism, which place emphasis on power and interdependence respectively, constructivism focuses on the development of norms, identity, and the impact of ideas. Constructivists believe that societal values and history, not just national interests, drive the actions of states and the effectiveness of international organizations like the World Trade Organization. They

view regulatory pressures on MNCs as a reflection of societal values and see MNC branches as potential influencers of local norms, values, and identities through their values, partnerships, and lobbying activities.

3.8 MNC Branches in a Realistic Worldview

According to the realism perspective, states are the primary actors in international relations and their actions are driven by the pursuit of power relative to one another. As a result, MNCs are seen as secondary actors that are influenced by the actions of states. This view has three implications for MNCs and their branches.

Firstly, from a realism perspective, the international arena is dominated by states seeking to increase their power and control. Multinational corporations (MNCs) and their subsidiaries play a secondary role in these interactions. As a result, MNCs must be prepared for any sudden, disruptive actions taken by governments that are guided by their nations' geopolitical goals, not by business interests. To effectively manage their risk, MNCs must consider the political landscape, recognizing that they have limited influence over political actors. To effectively pursue their interests, MNCs must stay informed of political developments and international relations so that they can anticipate and respond to any political movements that may affect them.

Secondly, from a realist perspective, MNCs and their branches must be mindful of the persistence of the three disruptions. The decline of US hegemony has created a gap in the international system without a central actor striving for mutual benefits. This has led to predictions of a division in the global economy, with two groups of countries emerging around the US and China. To navigate these shifting dynamics, MNCs must consider patterns of political conflict and the status of diplomatic relationships when making decisions, particularly in countries with insufficient legal and regulatory frameworks.

Thirdly, according to the realist view, the main factor shaping national politics is the pursuit of geopolitical power. This means that policies related to public health or data privacy may not always be based on genuine concerns, but instead driven by political

considerations. Regulations regarding national data management, for instance, could be motivated by national security concerns or protectionist economic goals, rather than ensuring consumer protection.

3.9 MNC Branches in a Liberalist Worldview

From a liberalist perspective, economic interdependence is seen as a positive and stabilizing factor in international relations. MNCs are viewed as building bridges between nations and their governments and having the potential to help address global challenges such as pandemics, climate change, and income inequality through international collaboration and the support of multilateral institutions, therefore:

First, this perspective is in line with the view of many global strategy scholars who see businesses as having a positive impact on society. Evidence supports this view, as some research shows that MNCs make positive contributions to society, while other studies show negative impacts due to individual or firm-level decisions.

Second, the liberalist viewpoint is in line with the interests of multinational corporations (MNCs) and their subsidiaries, as it portrays them as having a positive impact on international business. This forms the foundation for their global strategies, which aim to bring benefits to both their shareholders and stakeholders in every country in which they operate. As a result, MNCs may actively advocate for liberalist perspectives, highlighting the mutually beneficial outcomes that can be achieved in both their home and host countries.

Third, the liberalist perspective sees the disruptions caused by the big three factors as being temporary in nature. It foresees that after a period of turbulence, the global system of nations will revert to structures that foster international trade and investment, resulting in peace, wealth, and collaborative efforts to tackle global challenges such as poverty and climate change. MNCs are expected to carry on with their pre-disruption strategies of establishing worldwide networks and integrating their operations on a global scale, with confidence in the long-term advantages of such operations. However, the realization of this vision remains uncertain.

The liberalist perspective raises questions about the effect of multinational corporations (MNCs) on society when applied to strategy research. Studies of MNC subsidiaries can investigate how they balance the interests of local stakeholders and their own practices. For instance, do MNCs uphold consistent standards across their operations or exploit regulatory loopholes in countries with weak governance? Another key area of interest is how knowledge sharing and creation within subsidiaries can support the host country's technological progress and result in more favorable policies towards MNCs. Additionally, strategy researchers can examine the alignment of MNC subsidiary practices and the host country context with regards to environmental protection, data protection, and anti-corruption measures. Moreover, they can investigate whether MNCs are using their non-market strategies to genuinely benefit the host society or if they prioritize their own interests over local competitors when engaging with governments.

The liberalist worldview considers the actions of individual actors and calls for an investigation of the influence of actors who are critical to the MNC, such as branch managers, boundary spanners, and expatriates. The question arises as to how their actions and interactions can help to minimize skepticism about globalization and advance the mutually beneficial outcomes espoused by liberalism (Inouye, Joshi, Hemmatian, & Robinson, 2020).

3.10 MNC Branches in a Constructivist Worldview

According to the constructivist worldview, the relationships between nations are shaped by social factors. This viewpoint asserts that beliefs about the root causes of significant upheavals are shaped by societal factors, not just scientific evidence, and that the impact of MNCs on these disruptions can also be shaped by social factors. The concept is that multinational corporations (MNCs) and their branches have the power to affect the beliefs and actions of both their home and host societies, by shaping institutional structures. The subsidiary branches of MNCs, particularly the larger ones, can serve as intermediaries, influencing the perspectives, values, and collective identity of the societies in which they operate, whether intended or not.

Multinational corporations (MNCs) work to align their goals and values with those of the host countries they operate in. This is achieved through non-market strategies such as political influence and corporate social responsibility (CSR). Political activity helps MNCs shape the actions of host country governments and regulatory bodies, while CSR focuses on shaping public opinion through philanthropy, sustainable practices, and fair HRM policies. These actions can ultimately affect host communities' norms, attitudes, and government policies towards the subsidiary. Therefore, it is important to study the impact of CSR on host societies and government policies. Additionally, shared values and understandings are crucial for multilateral institutions such as the EU, UN, or WTO to function effectively. The constructivist perspective posits that values are shaped by societal norms and beliefs, and that MNCs may have a role in advancing global communication and promoting the acceptance of multilateral governance within society.

This suggests that strategy scholars should focus more on the informal beliefs and assumptions that support international institutional structures. The World Trade Organization's dispute settlement is a good example, where it was effective if all major players believed it served a higher purpose, even though there were occasional conflicts in specific cases. This leads to the inquiry of the extent to which MNCs, whether deliberately or not, influence the development of shared attitudes and values on a worldwide scale.

4. Conclusive Remarks

The recent economic disruptions have emphasized the close connection between political processes and the strategies of multinational corporations (MNCs) and their subsidiaries. It has also become more evident that MNCs can influence public political discourse and the international political landscape.

Different theoretical perspectives in international relations offer various, and sometimes conflicting, views on the role of multinational companies (MNCs) and their subsidiaries in political processes. Strategy research, specifically around non-market strategies, has mainly approached the interaction between MNCs, their branches, and local governments from a corporate viewpoint, seeing government decisions as external and unpredictable factors that

MNCs and subsidiaries must respond to. International relations perspectives, on the other hand, concentrate on the decisions made by governments and aim to analyze and forecast their actions. Integrating these perspectives into global strategy research can change the perspective from viewing governments as external influences to considering MNCs and their subsidiaries as active participants in the political and international relations landscape. This allows MNCs to take a proactive approach in anticipating and affecting government norms, beliefs, and decision-making.

According to Realists, sovereign countries are the the dominant players in international relations and aim to increase their power. In this view, significant disruptions may have a lasting impact due to the decline of US hegemony, and MNCs and their branches have limited influence on national political agendas. On the other hand, Liberalists believe that states prioritize mutual benefits from international cooperation. As a result, big disruptions are seen as temporary and MNCs and their branches, can demonstrate the mutual benefits for both home and host countries, thereby contributing to the restoration of cooperative national policies in international relations. Meanwhile, Constructivists argue that government policies are formed based on socially constructed beliefs. MNCs and their branches can then play a role in shaping the norms and values in the countries where they operate.

Future research may investigate the effectiveness of international relations perspectives in explaining the relationship between business and politics globally. The study could focus on the extent to which corporate strategies are impacted by national political agendas and the degree to which corporations can impact national politics. The different views from the field of international relations call for a closer examination of the role of political factors in shaping corporate strategies, requiring a more data-driven approach.

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CHAPTER 7

EXAMINATION OF PRIVATE SECTOR ACTIVITIES IN THE FRAMEWORK OF TURKEY'S CLIMATE POLICIES

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Introduction

Although the increase in Turkey's greenhouse gas emissions is slower than the economic growth rate, its per capita emission level is lower than that of the Organization for Economic Co-operation and Development (OECD) or European Union (EU) countries. However, there are many strong reasons for establishing a strong mitigation agenda in Turkey. The energy sector, which includes electricity, transportation, construction, and industry, is the largest contributor to the country's greenhouse gas emissions and accounts for three-quarters of the total emissions. The carbon intensity of Turkey's electricity, transport and agriculture sectors is lower than the EU average, with the contribution of renewable energy being largely included in Turkey's electricity system and low motorization rates. However, dependence on coal remains high and is expected to intensify under existing investment plans. Additionally, the energy efficiency of the building sector (residential and non-residential) is also lower than the EU average. The carbon intensity of the manufacturing sector is higher than the EU average and could pose significant problems for Turkey if the EU introduces the Border Carbon Regulation Mechanism (Gültekin, 2022; İmer-Ertunga & Seyhun, 2022).

Turkey has made ambitious climate crisis commitments. It ratified the Paris Agreement in October 2021 and committed to achieving the net zero emissions target by 2053 (WWF, 2022). The country has made new institutional arrangements to address climate crisis issues, including the recently created Ministry of Environment, Urbanization and Climate Change and updating the National Climate Action Change Plan. The intensification of climate-related events recently -such as floods, forest fires, and marine pollution– and the potential effects of the EU's Green Deal initiative for the Turkish economy have also contributed to the urgency of the climate crisis agenda in the country.

In parallel, the war in Ukraine and the accompanying energy supply disruptions and price increases have made the risks more clear for countries that depend on fossil fuel imports such as Turkey to reassess the urgency of climate action to support energy security and affordability (World Bank, 2022b).

This study examines the activities of some of the largest companies in Turkey, which are an important source of emissions in line with 2053 net-zero emission targets, within the scope of the climate crisis and sustainable development. In this context, the movement of Turkey's private sector companies in line with the determined targets has been examined. In other words, the sectors involved in the climate crisis policy, starting from the global dynamic and extending to the national management scale, were evaluated in terms of global and national policies. In this respect, the study offers a broader perspective than Tunç (2007), who attended to the situation of Turkey within the framework of the Kyoto Protocol, Köse (2018) who discussed Turkey's general climate policies and the signing process of the Paris Agreement, and Kılıç (2009) who examined climate crisis, sustainable development, and topics on Turkey. For this reason, the study offers a broad perspective for other research that will follow it with the multidimensional approach it proposes.

1. Climate Crisis and Climate Policies in Turkey

1.1. An Overview of the Climate Crisis in Turkey

Located in the Mediterranean Basin, Turkey is located in a sensitive region that will be more affected by the climate crisis. In a possible temperature increase of 2°C, drought, frequent forest fires, and exposure to extreme climatic events will result in negative impacts on tourism, damage to biological species, and loss of agricultural productivity (İzol & Kaval, 2022; WWF Türkiye, 2022). According to the Final Report of the Future of Turkey Project, prepared within the scope of the IPCC (Intergovernmental Panel on Climate Change) A2 Scenario, the following effects are expected for the climate crisis in Turkey:

* After 2030, a rapid increase in temperature increases will occur and it is foreseen that it will be felt more especially in the Konya Basin.

* Seasonal and regional differences are expected in temperature increases.

* It is estimated that the temperature increases in the winter months will reach around 4°C in some regions and around 6°C in the summer months.

It is expected that the temperature increases will be higher in the inner parts of the winter and especially in the Eastern Anatolia Region compared to the coastal areas.

* It is predicted that the regional differences in the temperature increase in the summer months will be small, but the temperature increase will be high.

* It is estimated that the decrease in snow thickness in Eastern Anatolia, which feeds the Euphrates and Tigris rivers, will change the flow regime of the rivers due to temperature increases (WWF Türkiye, 2010).

However, according to the Turkey Country Climate and Development Report prepared by the World Bank, Turkey has a high level in most of the factors identified on climate vulnerability. For example, the level of vulnerability in transportation is higher than that in similar countries. In particular, the effects of the climate crisis, such as food security problems, an increase in water stress and forest fires in 2021 are unprecedented in the past. Vulnerability is generally related to climate, the proportion of the population exposed to extreme climatic events, and socioeconomic factors (World Bank, 2022b).

Table 1. Climate Risk and Vulnerability in Turkey and Some Countries

Risk factors	Australia	Germany	Italy	Mexico	Turkey	United States
Agriculture, forestry, and fishing						
Increase in the annual number of extremely hot days in 2050						
Average annual risk for assets						
Average annual risk to the well-being						
Forcibly displaced population						
Exposed population						

Source: It has been tabulated by the author using the World Bank (2022a) resource.

The color values shown in Table 1, red, yellow, and blue, indicate risk and vulnerability severity as high, medium, and low, respectively. Turkey's high risk and vulnerability in terms of the climate crisis and

the fact that it has risks for the future have pushed institutions to take precautions. In this context, the Turkish Ministry of Environment, Urbanization, and Climate Change have announced Turkey's Climate Change Adaptation Strategy and Action Plan, covering the years 2011–2023. Within the framework of this action plan, it has been emphasized that over the years, water resources will decrease, floods will increase, and forest fires, drought, and desertification-like situations will increase in Turkey due to the climate crisis (Environment and Urban Ministry, 2012). The forest fires that started in Manavgat, Antalya, in July 2021 and spread to many cities, and the floods in the cities of Bartın, Sinop, and Kastamonu in August 2021 (Disaster Platform, 2022) occurred in line with this emphasis. Many national and international studies have examined the effects of the climate crisis on Turkey (Gürçam, 2022; Ömer Lütfi Şen et al., 2013; Öztürk, 2002; Tayanç et al., 2009; Yilmaz & Yazicigil, 2011; Yıldırım, 2007), Turkey's The warning that it will have a hotter, drier and uncertain climate in terms of precipitation shortly made it necessary for Turkey to be included in international regulations and to prepare national action plans.

1.2. Turkey's Climate Policies from a Global Framework

As an OECD country, Turkey has been included in the Annex-1 and Annex-2 lists of the 1992 United Nations Framework Convention on Climate Change (UNFCCC) prepared by the United Nations in the context of the climate crisis. However, it became a party to the convention in 2004. Similarly, it has become a party to the Kyoto Protocol, which was signed in 1997, and in 2009. In this direction, Turkey did not set a target for the reduction of its emissions in the first greenhouse gas reduction period (2008–2012) of the Kyoto Protocol. Likewise, in the second commitment period that started in 2013, it did not commit to reducing emissions (Gürçam, 2022; WWF Türkiye, 2022).

The Paris Agreement, which constitutes the framework of the regime to combat the climate crisis after the Kyoto Protocol (after 2020), was adopted at the UNFCCC 21st Conference of the Parties held in Paris in 2015. Turkey signed the Paris Agreement with the representatives of 175 countries at the High-Level Signing Ceremony held in New York

on April 22, 2016, and in its national declaration, it was emphasized that it signed the agreement as a developing country. The Paris Climate Agreement, which was signed in 2016, was approved by the Turkish Grand National Assembly Environment Committee and Foreign Relations Committee on October 5, 2021, and was accepted by the General Assembly on October 6 and signed by the President on October 7, and officially became a party to the agreement (MFA, 2023; Özdemir, 2021). The agreement, which was prepared based on the UNFCCC and reduces greenhouse gases against the climate crisis, limited the global average temperatures to 2°C and if possible to 1.5°C, compared to the pre-Industrial Revolution, 2050. For this purpose, since the most important way is to reduce greenhouse gases, the parties must submit their National Contribution Declarations (NDC) to the UN, which include their targets for reducing emissions. Before ratifying the agreement, Turkey submitted a contribution statement to the UN, which includes reducing greenhouse gases by 21% by 2030 (Karakaya, 2016). However, despite this notification, there are some reasons behind Turkey's ratification of the agreement, approximately 6 years after the agreement was opened for signature. First, the effects of the climate crisis have been felt more and more rapidly in Turkey recently. Simultaneously, it is located in the Mediterranean climate zone, which is sensitive to the climate crisis, and therefore experiencing excessive precipitation, increase in temperature values, and frequency of forest fires. These situations suggest that the country should review its climate policies. For this purpose, while investing in renewable energy sources to reduce emissions, it has implemented the Zero Waste Project. Additionally, some positive steps have been taken to increase forest areas. Secondly, there are international pressures. In particular, being in the European Union membership process, being the only country among the OECD and G-20 countries that did not sign the agreement, and finally being among the countries that did not sign the agreement, such as Iran, Iraq, Libya, Yemen, and Eritrea, hurt its image as well as diplomatic pressure. Finally, the EU accelerates its climate policies and announces its climate targets (2020, 2030, and 2050). Simultaneously, announcing the Green Deal agreement to the world in 2019 has been a driving force for Turkey. Because with the Green Deal, the EU has announced that it will update the content of its existing agreements with border carbon regulation and Customs Union member countries. With

the border carbon regulation, starting from 2023, some sectors (iron steel, cement, aluminum, fertilizer, and electricity) will first be priced according to their emission intensities. Later, this application will expand to cover different sectors (Ersoy Mirici & Berberoğlu, 2022; Küçük & Yüce Dural, 2022; Özdemir, 2021; Yılmaz, 2022).

The Green Agreement was aimed to encourage production with fewer emissions and to reward this situation with a more affordable price advantage in the Customs Union update. In this respect, as a member of the Customs Union, Turkey wants to make its trade and economic relations with the EU, with which it has an intense trade volume, more harmonious, healthy, competitive, and sustainable. For this reason, it should act within the framework of the Green Deal. In this context, as a party to the agreement, Turkey agreed to update the Statement of National Contribution declared under the Paris Agreement. It is expected that the realization of the emission targets will be fulfilled with a regulation that will cover the fields of industry, transportation, agriculture, and waste management, especially the energy sector. However, to meet the heating and energy needs, it is necessary to gradually switch to fossil fuels and renewable energy and to expand its use, use water resources and soil efficiently, prevent food waste, and provide green transformation in the economy (Ersoy Mirici & Berberoğlu, 2022; Küçük & Yüce Dural, 2022; Özdemir, 2021; Yılmaz, 2022).

1.3. Climate Policies of Turkey from a National Framework

Turkey first included environmental problems in the country's agenda in the 1970s and started to evaluate this issue within the framework of development plans since the Third Five-Year Development Plan in 1973. Turkey, which addressed environmental problems under a separate heading in the Third Five-Year Development Plan of 1973–1977, emphasized the importance of social and economic development to maintain environmental and human relations in a rational balance. Simultaneously, he stated that developments at the international level would be monitored and evaluated for the protection and development of the environment, and within this framework, he would participate in international research and evaluation studies on

environmental problems. Turkey's main goal in the global fight against the climate crisis is to fight against the climate crisis, which is a common problem for all people, considering global cooperation and scientific and impartial data. It is involved in this struggle through the principle of common and differentiated responsibilities by sustainable development policies and within the framework of its special conditions (Environment and Urban Ministry, 2012). Within the framework of this basic principle, in the Turkish National Climate Change Strategy Document, which entered into force in 2010, the targets for combating the climate crisis are stated as follows (Ministry of Environment and Forestry, 2010):

- Include climate crisis mitigation and adaptation policies and measures in national development plans by the UNFCCC's principle of common but differentiated responsibilities and the country's special conditions,
- To contribute to the global policies and measures developed to reduce greenhouse gas emissions aimed at combating the climate crisis, within their means, by intervening in the greenhouse gas emission increase rate, without harming development programs compatible with sustainable development principles,
- To increase the level of national preparedness and capacity to mitigate and adapt to the negative effects of the climate crisis; to share the experience and gains gained in these efforts with the countries of the region, and to develop bilateral and multilateral joint research projects for reduction and adaptation,
- Adapting to the design and execution of global strategic objectives under the main headings of mitigation, adaptation, technology transfer, and financing, considering the responsibilities of the parties, and playing an active role in international activities,
- Increasing access to financial resources needed to conduct mitigation and adaptation activities,
- Considering our current technology and development level, to develop research-development and innovation capacity for cleaner production, to create national and international

financing resources and incentive mechanisms that will increase competition and production in this field,

- To develop activities within the scope of combating and adapting to the climate crisis through effective and continuous coordination, with transparent, participatory, and scientific decision-making processes.

Emphasizing that adapting to the climate crisis is extremely important for protecting ecosystems, The Ministry of Environment, Urbanization, and Climate Change have published Turkey's Climate Change Adaptation Strategy and Action Plan, covering the years 2011–2023. In this action plan, it has been stated that climate change is a problem for sustainable development and it has been explained what risks Turkey will face due to the negative effects of climate change shortly. As a matter of fact, in this action plan, which reveals Turkey's adaptation strategy against climate change and to gradually reduce the negative effects of climate change, five important areas are mainly focused on (Environment and Urban Ministry, 2012):

Water Resource Management

In the models developed until 2100 due to the climate crisis, it is predicted that the precipitation will fall as more rain in the winter months and therefore the snow cover will melt rapidly. Additionally, there will be differences in seasonal precipitation periods, while changes in precipitation intensity and frequency will be observed. This situation, on the other hand, will cause problems in meeting water needs, especially in cities and agricultural regions. The changing water cycle will impact many climate-related sectors such as water quality, water supply, and especially food production, which is vital for human life. In this context, the priority targets determined by Turkey in terms of water resource management are as follows:

Priority Target 1. *Integrating Adaptation to the Impacts of Climate Change into Water Resource Management Policies*,

Priority Target 2. *Ensuring Capacity, Inter-Agency Cooperation, and coordination on adaptation to climate change in the management of water resources*,

Priority Target 3. *Developing and Disseminating R&D and Scientific Studies for Adaptation to the Impacts of Climate Change in the Management of Water Resources,*

Priority Target 4. *Integrated Management of Water Resources in Watersheds for Adaptation to Climate Change*

Priority Target 5. *Planning of Renewable Energy Resources by Considering the Effects of Climate Change and the Sustainability of Ecosystem Services Increasing Resistance to Climate Change*

Agriculture Sectors and Food Security

The agricultural sector is one of the first sectors to be affected by a possible change in the temperature and water cycle due to the climate crisis. However, the change in temperature and precipitation will increase harmful organisms that damage agricultural areas. Agricultural production, production areas, and livestock will be affected due to the climate crisis, and the presence, severity, and frequency of extreme weather events will affect crop yield. This situation directly relates to food safety. Although agriculture is a priority sector for Turkey, it is in a dominant position in the supply of food that the society needs. For this reason, the impact of the climate crisis on the agricultural sector is of great importance in terms of food security. In this respect, the priority targets determined for the agricultural sector and food security are as follows:

Priority Target 1. *Integrating the Adaptation Approach to the Impacts of Climate Change on the Agricultural Sector and Food Security Policies*

Priority Target 2. *Developing and Disseminating Research and Development (R&D) and Scientific Studies for Determining the Impacts of Climate Change on Agriculture and Adapting to Climate Change*

Priority Target 3. *Sustainable Planning of Agricultural Water Use*

Priority Target 4. *Protection of Soil and Agricultural Biodiversity Against the Impacts of Climate Change*

***Priority Target 5**. Improving Institutional Capacity and Inter-Institutional Cooperation in Turkey on Adaptation Options in Agriculture*

Ecosystem Services, Biodiversity, and Forestry

Due to the climate crisis, there will be losses in biological species, both terrestrial and marine ecosystems. Therefore, this situation will also affect the species, the ecosystems that the society needs, and the benefits they provide. Ecosystems such as humus-bearing areas, deep seas, and wetlands contribute to the protection of the climate system by making a positive impact on global warming as they are carbon sinks. The climate crisis also hurts forest assets. Especially the changes in temperature and precipitation will cause changes in the distribution of certain tree species. In this respect, the priority targets determined in the fields of ecosystem services, biodiversity, and forestry are as follows:

***Priority Target 1**. Integrating the Climate Change Adaptation Approach into Ecosystem Services, Biodiversity, and Forestry Policies*

***Priority Target 2.** Identifying and Monitoring the Effects of Climate Change on Biodiversity and Ecosystem Services*

Natural Disaster Risk Management

It is claimed that there will be an increase in the frequency, severity, and distribution of extreme weather events (such as floods, droughts, and changes in the water cycle) due to the climate crisis. Especially in regions where precipitation is expected to intensify, flood risks will arise and these risks will increase. It is suggested by the IPCC that the prolongation and increase in the severity of the hot and dry period in the future in Turkey may impact the frequency, duration, and severity of forest fires. In this respect, the priority targets determined under the natural disaster risk management title are as follows:

***Priority Target 1.** Identification of Threats and Risks for the Management of Climate Change-Related Natural Disasters*

***Priority Target 2.** Strengthening Response Mechanisms in Natural Disasters Due to Climate Change*

Human Health

The negative impact of the climate crisis on human health is a well-known fact. For example, the frequency of heat waves or extreme climatic events could lead to increased deaths and illnesses. In particular, the increase in heat waves may have a greater impact on the elderly and elderly people with chronic cardiovascular or respiratory diseases. In this respect, the targets set for human health are as follows:

Priority Target 1. *Determination of Current and Future Impacts and Risks of Climate Change on Human Health*

Priority Target 2. *Improving the Capacity of the National Health System to Combat Risks Originated from Climate Change*

Murat Kurum, Minister of Environment, Urbanization and Climate Change, who is currently the executive in Turkey's fight against the climate crisis, mentioned that the implementation of the Paris Agreement is not a choice but a necessity for countries. In this respect, each country must successfully adapt to the green transformation and climate crisis by producing effective policies in the fight against the climate crisis. Minister Kurum stated that Turkey, it is strengthening its efforts to combat and adapt to the climate crisis with more solid steps every day. For this purpose, Minister Kurum declared Turkey's net zero emissions and green development targets for 2053 to the whole world by the President of the Republic of Turkey. In this context, Turkey has started a new era in the fight against the climate crisis. Minister Kurum announced that the National Contribution Statement, which was updated to 41% within the scope of the Paris Agreement, was updated in consultation with all national institutions and private sector organizations. The National Contribution Statement created in this direction was completed with the approval of the Climate Change and Adaptation Coordination Board, and with this update, it is aimed to set a more ambitious target than the previous statement and accelerate Turkey's green development vision. Minister Kurum stated that Turkey will experience a peak in emissions in 2038 and that after this date, it will take firm steps toward the 2053 net zero emission target. Seeing especially the issue of green development as a key, Minister Kurum emphasized that changes will be made in all areas related to the climate

crisis, from energy to industry, from transportation to buildings, and from the waste sector to the protection of sink areas. Finally, the Authority states that both the 2030 National Declaration of Contribution and the 2053 Long-Term Climate Change Strategy (net zero emission target for 2053) are complementary to each other and that both documents are related to energy, industry, waste, transportation, buildings, agriculture and will contain a significant transformation signal in sectors such as forestry. In terms of change, Long-Term Climate Change Strategy is planned to be implemented in 2023 (Ministry of Environment, Urbanization and Climate Change, 2022; Climate Change Presidency, 2022; Yeşil Gazete, 2022).

2. Private Sector in Terms of Sustainable Development and Climate Crisis Policies

Although the climate policies put into effect by governments are important in terms of combating the climate crisis, it is equally important to implement and adapt them based on companies in the country. In this respect, the data obtained from the report titled Climate Change and Sustainability Survey: Borsa Istanbul (BIST) 30 Firms' Outlook (350 ve SEFiA, 2022), published in October 2022, were used. Within the framework of this report, the compliance of company activities with Turkey's climate policies, especially the update made within the scope of the National Contribution Statement, and the 2053 net zero emission target were examined.

***Arçelik Incorporated Company*:** This is the first real sector company to issue green bonds in international markets. As part of combating the climate crisis and green transformation, it is committed to achieving net zero emissions in the value chain by 2050 for net zero. Simultaneously, it purchases 100% green electricity in all production facilities by 2030. Similarly, the renewable energy systems capacity, which was 3.26 MW in 2021, is targeted to reach 50 MW in 2030.

ASELSAN Electronic Industry and Trade Incorporated Company: ASELSAN reduced its total energy consumption from non-renewable fuels (natural gas and diesel) by more than 15% in 2021 compared to the previous year. The company shared its net zero emission target for

2050 with the public. ASELSAN is one of the 15 companies included in the BIST Sustainability Index in 2014.

BİM United Stores Incorporated Company: No target date for net zero emissions for the company has been reached. Because of the store design renewal initiated by the company in 2020 and improvements in energy saving and thermal insulation, an average of 25% heat and 10% electricity savings per store were achieved. By 2030, it switches to a new design with high energy efficiency and a modern look in all BİM stores. The company also reduces greenhouse gas intensity by 20% by 2026 compared to 2019, within the scope of its sustainability goals. Finally, the company is included in the BIST Sustainability Index.

Emlak Konut Real Estate Investment Trust Incorporated Company: No target date has been reached for net zero emissions and carbon neutrality for the company. The company has used Energy Efficient Electrical and Mechanical systems (such as Condensing Boilers, Frequency Controlled Pumps, LED Lighting Fixtures, and Automation Systems) in projects whose construction has been completed so far. Simultaneously, with the Roof, Solar Energy Systems established by the company, buildings 20% more efficiently than the legislation and regulations have been produced.

Ereğli Iron and Steel Factories Turkish Incorporated Company: No target date has been reached for net zero emissions and carbon neutrality for the company. Clean Energy Investments After starting the Climate Risk and Opportunity Evaluation Project (IRF Project), based on the TCFD (Task Force on Climate-Related Financial Disclosures) approach, Ereğli followed the progress of low-emission steel production technologies and carried out feasibility studies. States that it reduces emissions by conducting investigations to improve energy efficiency. This company is included in the BIST Sustainability Index.

Ford Otosan (Ford Automotive Industry Incorporated Company): The company has committed to phasing out the production of fossil fuel vehicles worldwide by 2040 as part of a global effort to reduce carbon emissions. The company has announced that it will reduce carbon emissions per vehicle by 55% by 2030, as part of its medium-term goals. Additionally, it is committed to zero emissions in trucks by 2040. It also aims to be a carbon-neutral factory by 2050.

GÜBRETAŞ (Fertilizer Factories Turkish Incorporated Company): No target date has been reached for net zero emissions and carbon neutrality for the company, and clean energy investment information about the company has not been reached.

Hacı Ömer Sabancı Holding Incorporated Company: EnerjiSA has 22 power plants, including 4 wind, 12 hydroelectric, 2 solar, 3 natural gas, and 1 domestic lignite power plant, with a total installed power of 3,672 MW. At the latest, the company has set a net zero emission and zero waste target in all operations by 2050.

Hektaş Trade Turkish Incorporated Company: No target date has been reached for net zero emissions and carbon neutrality for the company. Similarly, no information could be obtained about the company's clean energy investments.

Karabük Iron and Steel Industry and Trade Incorporated Company: A target date has not been reached in terms of net zero emissions related to the company. However, in 2039, the 100th anniversary of its establishment, the company shared its goal of being a sustainable and carbon-neutral company with the public. In line with the increased production amount of the company in 2021, the total energy consumption will increase by 2% compared to 2020, and the energy intensity used per product produced will increase by 1%. Additionally, the total energy savings achieved through facility investments and energy efficiency projects increased by 8% compared with 2020.

Koç Holding Incorporated Company: The company operates in the energy sector with 11 group companies. These are companies such as TÜPRAŞ, Aygaz, and OPET, which are generally fossil fuel-based. The company is committed to achieving net zero emissions by 2050.

Koza Altın Operations Incorporated Company: No target date has been reached for net zero emissions and carbon neutrality for the company. Similarly, no information could be obtained about the company's clean energy investments.

Koza Anadolu Metal Mining Operations Incorporated Company: No target date has been reached for net zero emissions and carbon

neutrality for the company. Similarly, no information could be obtained about the company's clean energy investments.

Pegasus Air Transport Incorporated Company: The company has been among the airline companies that have committed in line with the Net Zero Carbon Emissions until 2050 decision adopted at the 77th Annual General Meeting of the International Air Transport Association (IATA). It also reduces flight-related carbon emissions per unit passenger kilometer by 20% by 2030 compared to 2019.

Petkim Petrochemical Holding Incorporated Company: It reduces carbon dioxide (CO2) emissions by 40% by 2035 and be net zero by 2050.

SASA Polyester Industry Incorporated Company: No target date has been reached in terms of net zero emissions related to the company. However, the company reduces its carbon intensity to 0.333 t-CO2e/ton in 2030, reducing it by 50% compared to 2019.

TAV Airports Holding Incorporated Company: A target date has not been reached in terms of net zero emissions related to the company. TAV Airports takes the following steps within the scope of its sustainability efforts: Applications such as Airport Carbon Accreditation, Turkey's First Carbon Neutral Airports, and Carbon Footprint for Green Flight.

Tekfen Holding Incorporated Company: The company continues to provide services in infrastructure projects such as refineries, petrochemical facilities, terminals, fossil fuel, gas, and renewable energy power plant projects. While no target date has been reached for net zero emissions, it reduces its emissions by 15% by 2025 and by 40.2% by 2037 on a 2019 basis. Additionally, the company has announced that it aims to be carbon neutral in its long-term plans.

Tofaş Turkish Automobile Factory Incorporated Company: No target date has been reached for net zero emissions. Based on 2011, the company reduces its emissions by 33% by 2024. In the long term, the company has declared that it aims to be carbon neutral, although it does not specify a date.

Turkcell Communication Services Incorporated Company: This company reduces emissions from its vehicle fleets. While no target date

has been reached for net zero emissions, it plans to meet all of its electricity needs from renewable energy sources until 2030. Additionally, it aims to be carbon neutral by 2050.

Tüpraş Incorporated Company: The company was founded on fossil fuels. The company implemented 65 energy efficiency projects by 2021. No target date has been reached for the company to be net zero emissions and carbon neutral.

Turkish Airlines Incorporated Company: Supporting sustainable biofuel R&D studies, THY reduces emissions on flights by optimizing all flight routes and altitudes with the 4-D flight planning system. While no target date has been reached for net zero emissions related to the company, it halves its emissions by 2050 compared to 2005, within the scope of IATA, of which it is a member.

Türk Telekom Incorporated Company: While a target date for net zero emissions for the company could not be reached, a target date for carbon neutrality could not be reached either. Similarly, no information could be obtained about the company's clean energy investments.

Şişecam Factories Incorporated Company: While the company sets a net zero emission target for 2050, it conducts design development studies for new-generation all-electric and hybrid furnaces aimed at reducing fossil fuel consumption and energy efficiency.

Vestel Electronics Industry and Trade Incorporated Company: The company nets zero emissions by 2050 across all value chains. Thanks to the clean energy investments and energy efficiency projects undertaken in this direction, 3,131 tons of carbon emissions were prevented at Vestel Electronics.

3. Discussion

First, it would be more accurate to make the following distinction to understand the justification of the criticisms made in the discussion part of the study. Carbon neutrality is the balance between the amount of CO2 released into the atmosphere and the amount of CO2 held by the sink areas. It only covers CO2 emissions. Zero net emission includes offsetting all greenhouse gas emissions, including CO2. The point that

should be underlined in the fight against the climate crisis is that neither net zero emissions nor carbon-neutral discourse will be a solution in the fight against this climate crisis. This is because, as a result, the continuation of emissions will mean the continuation of global warming and therefore the climate crisis. In other words, as long as companies have the desire to make a profit, economic-based initiatives in the fight against the climate crisis are not very realistic in terms of conducting the process in this fight. Because the neoliberal economic system, instead of giving up the unlimited production and consumption approach, has developed applications to sell even the air with the understanding of making more profit (Gürçam et al., 2021; Gürçam & Konuralp, 2022; Konuralp, 2020; Konuralp & Bicer, 2021; Konuralp & Dayioğlu, 2022). For example, with the Kyoto Protocol, the main aim should be to reduce fossil fuel-based emissions in the fight against the climate crisis. However, as the neoliberal economic system attempts to turn even the climate crisis in its favor, developed economies fill the right to pollute with the emission trading system established with the protocol. Developed economies, which are not satisfied with this, can also pay the quota of the countries that do not fulfill this right. Not only that, they continue to pollute by supporting clean energy projects in a poor and low-cost country, without reducing emissions in any way, with carbon balancing (which is offered as a solution in the fight against the so-called climate crisis) (Gürçam, 2021).

In order for Turkey to reach the net zero target of 2053, which was announced as the official target in 2021, in parallel with this target, the entire economy, from industry to services, must be decarbonized. It will be seen what kind of road plan will be implemented by Turkey and which legal regulations will be introduced to achieve this goal in the coming years. As a confirmation of the points highlighted in the previous paragraph, when looking at the companies (25 companies) covered in the study, only eight companies announced a date for net zero emissions, while 18 companies did not provide a date for net zero emissions. Of these companies, only three have set a target date for becoming carbon neutral, while two companies have included being carbon neutral in their long-term goals. In three of these companies, no information was found on efficiency or clean energy activities. Considering this information, although sectoral cooperation is

emphasized in Turkey's emission targets or action plans regarding the climate crisis, it is seen that these are not very consistent with the current plans of the companies. Especially with the 41% reduction given under the Paris Agreement, it is seen that the sustainable development and climate crisis targets of the companies do not match, not only with this but also with the 2053 net zero emission dates. In other words, it is seen that the sectoral activities are unaware of the national policy, and that the national policies are disconnected from the sectoral activities. To protect their profit margins and continue their growth, the government hides behind plans and targets that are not implemented, or incompatible, considering the protection of their power and not losing votes, especially in increasing environmental sensitivity.

Conclusion

It is possible to make some inferences and evaluations regarding Turkey's climate crisis policies. In Turkey, the international climate regime under the umbrella of the UN has emerged as the main interlocutor of the state in the fight against the climate crisis. The point to be underlined here is that Turkey continues to see the climate crisis problem as a foreign policy issue. Therefore, it is possible to state that the problem of climate crisis cannot be internalized at the national level. The main motivation of the state in this policy area is focused on its interests in international negotiations. No progress has been made in incorporating the demands and needs of local, regional, and sectoral actors and social segments in the policy process, who are in direct contact with the climate crisis problems, which are increasing their impact all over the country. From this viewpoint, when the institutional structuring and basic objectives of the climate change policy in Turkey are examined, we observe that state and capital actors whose interests overlap with the economic goals of the state are at the forefront. It is revealed that the state and the private sector are in a union of interests and discourse against the cost-increasing measures and changes in this direction that should be realized within the scope of combating the climate crisis and within the framework of sustainable development. At this point, the effectiveness and efficiency of the national plans and

legal regulations and the institutional structure that will implement and follow them become questionable. As we often underline in these plans and strategy documents, no concrete emissions reduction targets have been set beyond relative reductions. It is not possible to talk about the existence of a climate crisis policy based on these documents, except for the adaptation measures expected in the existing production infrastructure, energy sector, and related sectors. The financial/structural arrangements of such a policy are also unstructured at the required level. From this viewpoint, measures and predictions regarding the climate crisis remain of secondary importance despite the government's growth strategies and priorities for realizing its economic goals. An integrated and sustainable understanding of economic development, including climate crisis policies, has been avoided. The relationships of the climate crisis policy, defined within the framework of the goals, discourse and value system adopted by the stated state-capital association, with other stakeholders and social actors could not be established.

As a result, it is not a very realistic approach to expect Turkey to adopt an ambitious mitigation target without putting into effect any mitigation policy or clarifying the date of its implementation, and more importantly, without gaining experience on the subject. In short, developing comprehensive and mitigating climate policies requires time, expertise, and experience. Yes, Turkey can target a higher reduction, but how ready is it in every sense to be able to operate this process? In other words, how accurate is it to prepare action plans and strategies after they are not fully implemented or after failure to achieve the desired goals? For example, even though Turkey foresees such extreme climate events in the Adaptation and Strategy document it has announced for the fire and flood disasters in 2021, how well prepared has it been? Because in both cases, undesirable losses were experienced. Another example or inference is that the new 41% reduction target by 2030, renewed under the Paris Agreement, is criticized by various NGOs as it will increase greenhouse gas emissions rather than reduction, delay reaching the 2053 net zero emission targets, and cause more costs (Bagatır, 2022). What is important here is which year Turkey takes as a reference in greenhouse gas reduction and what political measures it will limit to achieve that target. As a result,

fulfilling Turkey's climate commitments will of course yield clear gains both in terms of green development and combating the climate crisis, but this will require substantial public and private partnerships, cohesion and investments, and tangible steps (not hidden behind greenwashing).

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CHAPTER 8

AN EFFICIENCY ANALYSIS FOR WIND POWER PLANTS IN TURKEY BY USING IMPROVED OCRA

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Introduction

Sustainable development or sustainability are concepts that have been popular in recent years. The development of these concepts, however, truly began in the 1980s. The report Our Common Future, usually referred to as the Brundtland report, published in 1987 by the Brundtland Commission, was the first to promote the idea of sustainable development (Koçaslan, 2010). In this report, sustainable development was described as a development that satisfies the requirements of the present without sacrificing the capacity of future generations. The concept of sustainable development has environmental, social, economic, cultural, and technological components, all of which must coexist within an integrated framework (Mondini, 2019).

The Millennium Summit held in 2000 can be seen as the crucial next step with regard to sustainable development. To reduce poverty in the least developed countries by half by 2015 was the main concern of this summit. Following the summit, countries decided to accomplish 8 Millennium Development Goals (MDGs) by 2015, one of which was to ensure environmental sustainability (Akyıldız, 2011).

The official endorsement of the 2030 Agenda for Sustainable Development by the United Nations General Assembly in September 2015 is another significant step toward sustainable development. On this Agenda, there are 17 Sustainable Development Goals (SDGs). These SDGs also contain 169 targets that all United Nations members have committed to achieving by 2030 (Uğurlu, 2019).

Two of the 17 SDGs of this Agenda stand out when it comes to energy. These are SDG 7 for Affordable and Clean Energy and SDG 13 for Climate Action, respectively (Matuszewska-Janica et al., 2021). Everyone should have access to affordable, reliable, sustainable, and

clean energy, according to SDG 7 (Włodarczyk et al., 2021). SDG 13 is another goal pertaining to renewable energy (Uğurlu, 2019). As a result, renewable energy sources become increasingly important as fossil fuels rapidly deplete and pollute the environment (Kumbur et al., 2005). It is important to remember that fossil fuels have been used extensively over the past 200 years due to their low cost (Yılmaz, 2012). However, with the advancement of technology, particularly in recent years, this scenario has altered, and today, wind energy and solar energy are also commonly used (Włodarczyk et al., 2021).

Particularly in the field of wind energy, there have been notable advancements. With the introduction of new technology, as previously indicated, the costs of installing wind power plants (WPPs) have reduced, as has the cost of electricity generated from wind energy. As a result, wind energy is now competitive with fossil fuels. Leading nations in the electricity generation from wind energy include the United States, China, Germany, Spain, and India (Özkan et al., 2022).

The measurements show that Turkey has a significant wind energy potential (Koçaslan, 2010). The number of WPPs in Turkey is growing, as is the installed wind power. According to November 2022 data, installed wind power has reached 11365.6 MW, with a total of 358 WPPs, including unlicensed power plants.

In this study, the improved operational competitiveness rating analysis (OCRA) is utilized and the data from 2019 through 2021 are used to determine the efficiency of eight WPPs in Turkey over years. Installed power and average annual electricity generation as inputs and actual annual electricity generation as output are used to calculate efficiency. The entropy method is utilized to determine the input and output weights in the improved OCRA.

Here is the rest of the study: A literature review is presented in the second section. The third section provides an explanation of the study's methodology. The application and outcomes are covered in the fourth section. The fifth section's conclusion marks the end of the study.

Literature Review

The efficiency of WPPs, also known as wind farms, has been evaluated in numerous studies. A few of the studies conducted in recent years are given below:

Ederer (2015) employed data envelopment analysis (DEA) to assess capital and operating cost efficiency in the offshore wind farms. The model for capital cost efficiency uses specific capital costs as an input and installed power, distance to shore and water depth as outputs. The installed power, distance to operating port, energy performance, and time-based availability are the outputs of the operating cost efficiency model, which takes specific operating costs as an input.

Emre and Ömürgönülşen (2015) employed a DEA model to determine the relative efficiency of WPPs in the Marmara region. They used installation and connection costs as inputs and annual production, mean annual return, and return on investment as outputs.

Vaz and Ferreira (2015) employed a 2-stage DEA to assess efficiency and productivity of Portuguese wind farms. DEA is used in the first stage to assess the efficiency of wind farms in producing electrical energy from the available resources and nondiscretionary variables. A second stage involves utilizing the Malmquist index to examine changes in the productivity of wind farms. The inputs are installed capacity, number of wind turbines and wind hours, and the output is electric energy.

Wu et al. (2016) assessed the efficiency of Chinese wind farms by using a 2-stage DEA. DEA is used in the first stage to calculate the efficiency scores of wind farms. The Tobit regression model (TRM) is used in the second stage to investigate the connection between the efficiency scores and environmental variables beyond the control of wind farms. The inputs are installed capacity, auxiliary electricity consumption and wind power density, and the outputs are electricity generated and availability. The uncontrollable variables are age of the wind farm, wind curtailment rate and dummy variable for group.

Ömürgönülşen et al. (2016) assessed the efficiency of WPPs in Turkey in a different study by using three inputs and two outputs. The inputs are installation cost, average wind speed and wind capacity factor, while the outputs are meter capacity utilization rate and annual return. According to DEA findings, Turkey's WPPs are highly

inefficient. A context-dependent DEA approach, which permits clustering of units according to their efficiency levels, was also applied to the data set in addition to the usual DEA modeling, and WPPs were grouped into 7 layers according to their efficiency. Based on the geographic locations of the WPPs, the results were also interpreted. WPPs in the Aegean region have been found to run generally efficiently or almost so.

Sağlam (2017) applied a 2-stage DEA to assess the efficiency of large wind farms in the United States. In the first stage, DEA is employed to assess the relative efficiencies of 236 large utility-scale wind farms. The inputs are installed capacity, number of wind turbines and wind power density, and the outputs are net generation, value of production and number of homes powered. For the second stage, TRMs are created to look into the effects of specifications of the wind turbine technologies.

Sağlam (2018) used a 2-stage DEA to assess the performance of utility-scale wind farms in Texas. DEA models are performed in the first stage to assess the efficiencies of the 95 large utility-scale wind farms. The inputs are installed capacity, number of wind turbines and wind power density, and the outputs are generated electricity and capacity factor. TRMs are developed in the second stage to look into the causes of inefficiencies.

Emeç et al. (2019) used DEA to evaluate the efficiency of 99 WPPs in Turkey that were in operation. The model takes as inputs installed power, the total amount of energy WPP can produce annually, and the number of wind turbines, and as outputs, the total amount of energy generated annually, the number of people whose average need is met, and the sale price to the grid.

Adibfar (2019) employed a 2-stage DEA to assess the efficiency of wind farms in Turkey. In the first stage, DEA models are performed to assess the efficiencies of wind farms. TRMs are utilized in the second stage of the analysis to look into the exogenous variables affecting the efficiency of Turkish wind farms. The inputs are installed capacity, number of wind turbines and wind power density, and the outputs are generated electricity and availability. The exogenous variables are age and site elevation.

Akbari et al. (2020) used DEA in their study to evaluate the efficiency of 71 offshore wind farms in five countries in northwestern

Europe. The number of wind turbines, cost, distance to the shore, and area of the wind farms are chosen as the inputs, and the connectivity of the wind farms to population centers, the amount of electricity produced, and the depth of the water are taken into consideration as the outputs.

Benini and Cattani (2022) first used a fully parametric and a semiparametric stochastic frontier model to assess the technical efficiency of 26 offshore wind farms over a thirteen-year period. The findings imply that fully parametric specifications fall short of identifying the non-linear relationship between labor costs and electricity production volumes. Then, to highlight the technical efficiency's resistance to aging, the estimated technical efficiency is regressed over farm age while controlling for the wind power industry's technological change. The calculations show that technological efficiency is age-independent and varies from 83% to 98%. This outcome sheds some light on offshore wind farms' potential as a long-term answer to the energy transition.

Methodology

The input and output weights in this study were determined using the entropy method, and the efficiency ranking was then calculated using the improved OCRA. Below is a detailed description of these procedures.

Entropy method

The entropy method is an objective weighting method. The following steps are used to determine the weights of criteria using the entropy method, assuming there are m alternatives and n criteria (Alinezhad and Khalili, 2019; Huang, 2008).

1) The decision matrix is created as shown in Eq. (1).

$$\mathbf{X} = \begin{bmatrix} x_{11} & \cdots & x_{1j} & \cdots & x_{1n} \\ \vdots & \ddots & \vdots & \ddots & \vdots \\ x_{i1} & \cdots & x_{ij} & \cdots & x_{in} \\ \vdots & \ddots & \vdots & \ddots & \vdots \\ x_{m1} & \cdots & x_{mj} & \cdots & x_{mn} \end{bmatrix}; \quad i = 1,2,\dots,m \quad j = 1,2,\dots,n \tag{1}$$

2) The decision matrix is normalized by using Eq. (2)

$$p_{ij} = \frac{x_{ij}}{\sum_{i=1}^{m} x_{ij}}; \quad j = 1,2,\dots,n \tag{2}$$

3) The degree of entropy is computed for each criterion by using Eq. (3).

$$\boldsymbol{e_j = -\frac{1}{\ln(m)} \sum_{i=1}^{m} p_{ij} \cdot \ln(p_{ij}); \quad j = 1,2,\dots,n; \quad 0 \le e_j \le 1} \tag{3}$$

4) The variation rate of the degree of the entropy can be computed for each criterion by using Eq. (4)

$$d_j = 1 - e_j, \quad j = 1,2,\dots,n \tag{4}$$

5) Finally, Eq. (5) is used to determine the weights.

$$\boldsymbol{w_j = \frac{d_j}{\sum_{j=1}^{n} d_j}} \tag{5}$$

OCRA (Operational Competitiveness Rating Analysis)

OCRA was developed by Parkan (1994). It is employed to solve performance measurement and efficiency analysis problems (Peters and Zelewski, 2010). The steps below are followed to compute the scaled performance indices by OCRA (Peters and Zelewski, 2010; Işık and Adalı, 2016; Ozcalici and Bumin, 2020; Kundakcı, 2019).

1) The decision matrix is created as shown in Eq. (6)

$$\mathbf{X} = \begin{bmatrix} x_{11} & \cdots & x_{1j} & \cdots & x_{1n} \\ \vdots & \ddots & \vdots & \ddots & \vdots \\ x_{i1} & \cdots & x_{ij} & \cdots & x_{in} \\ \vdots & \ddots & \vdots & \ddots & \vdots \\ x_{m1} & \cdots & x_{mj} & \cdots & x_{mn} \end{bmatrix};\ i = 1,2,\dots,m \quad j = 1,2,\dots,n \tag{6}$$

where m is the number of decision making units (DMUs) or alternatives and n is the total number of inputs (non-beneficial criteria) and outputs (beneficial criteria).

2) The unscaled input index is computed for each DMU by using Eq. (7)

$$\bar{I}_i = \sum_{j=1}^{g} w_j \frac{\max_i(x_{ij}) - x_{ij}}{\min_i(x_{ij})};\ i = 1,2,\dots,m \tag{7}$$

where g is the number of inputs and w_j is the weight of the j^{th} input.

In the improved OCRA, Eq.(7) is replaced by Eq.(8) (Stanujkic et al., 2017):

$$\bar{I}_i = \sum_{j=1}^{g} w_j \frac{\max_i(x_{ij}) - x_{ij}}{\max_i(x_{ij}) - \min_i(x_{ij})};\ i = 1,2,\dots,m \tag{8}$$

3) The scaled input index is computed for each DMU by using Eq. (9).

$$\bar{\bar{I}}_i = \bar{I}_i - \min_i(\bar{I}_i);\ i = 1,2,\dots,m \tag{9}$$

4) The unscaled output index is computed for each DMU by using Eq. (10)

$$\bar{O}_i = \sum_{j=g+1}^{n} w_j \frac{x_{ij} - \min_i(x_{ij})}{\min_i(x_{ij})};\ i = 1,2,\dots,m \tag{10}$$

where $(n-g)$ is the number of outputs and w_j is the weight of the j^{th} output.

In the improved OCRA, Eq.(10) is replaced by the Eq.(11) (Stanujkic et al., 2017):

$$\bar{O}_i = \sum_{j=g+1}^{n} w_j \frac{x_{ij} - \min_i(x_{ij})}{\max_i(x_{ij}) - \min_i(x_{ij})};\ i = 1,2,\dots,m \tag{11}$$

5) The scaled output index is computed for each DMU by using Eq. (12).

$$\bar{\bar{O}}_i = \bar{O}_i - \min_i(\bar{O}_i);\ i = 1,2,\dots,m \tag{12}$$

6) The scaled performance index is computed for each DMU by using Eq. (13).

$$P_i = \left(\bar{\bar{I}}_i + \bar{\bar{O}}_i\right) - \min_i\left(\bar{\bar{I}}_i + \bar{\bar{O}}_i\right);\ i = 1,2,\dots,m \tag{13}$$

7) The scaled performance indices are ranked in descending order, and the DMU with the highest scaled performance index is the most efficient.

One of the most distinctive features of OCRA is the normalizing process illustrated in Eqs. (7) and (10). Contrary to commonly used normalizing procedures, the normalization procedure utilized in the standard OCRA method prevents the values of scaled performance indices from always belonging to [0,1], whereas these values may occasionally be greater than one. OCRA is improved by substituting Eqs. (7) and (10) with Eqs. (8) and (11), allowing the scaled performance indices to always belong to [0,1] (Stanujkic et al., 2017).

Application

In this study, the efficiency of eight WPPs in Turkey over the years is calculated with improved OCRA by using the data of 2019, 2020 and 2021. While calculating efficiency, installed power and average annual electricity generation are used as inputs and actual annual electricity generation as output. Input and output weights used in improved OCRA are calculated by the entropy method. Table 1 contains the data that are

used in the study. The WPPs included in the analysis have an installed capacity of over 90 MW, and their installed power stayed constant in the years 2019, 2020, and 2021.

Table 1. Data Used in the Study

WPP	Installed power (MW)	Average annual electricity generation (MWh)	Actual annual electricity generation in 2019 (MWh)	Actual annual electricity generation in 2020 (MWh)	Actual annual electricity generation in 2021 (MWh)
WPP1	168	588500	363574.22	377524.65	393650.92
WPP2	143	606375	492760.5	519844.51	508536.91
WPP3	135	510000	355576	334738.9	338191.4
WPP4	128	414873.6	338144.01	349281.66	377000.2
WPP5	120	420000	381422	400410	385375
WPP6	105	330000	326723.63	344131.43	321776.87
WPP7	94.5	325500	268718.39	288565	273467.88
WPP8	94	198050	221931.04	213602.48	239431.42

Source: (TÜREB, 2022; Enerji Atlası, 2022; EPİAŞ, 2022)

The weights of the inputs and output are calculated separately for each year using the entropy method, and these weights are shown in Table 2. (The weights for 2020 and 2021 do not add up to 1 because of rounding.)

Table 2. Weights of Inputs and Output for Each Year

	2019	2020	2021
Installed power	0.20	0.19	0.20
Average annual electricity generation	0.54	0.52	0.54
Actual annual electricity generation	0.26	0.28	0.25

Source: Table 2 was created by researcher after own calculation

As can be seen from Table 2, the weights of inputs and outputs vary little from year to year. Table 2 shows that the weight of the average annual electricity generation input is the highest every year. This is followed by actual annual electricity generation and installed power. The weights shown in Table 2 are then used in the improved OCRA. Table 3, Table 4, and Table 5 include the calculated scaled performance indices of WPPs for each year as well as efficiency rankings derived from the scaled performance indices.

Table 3. Scaled Performance Indices of WPPs and the Efficiency Ranking for 2019

	Scaled performance index	Ranking
WPP1	0	8
WPP2	0.166	7
WPP3	0.186	6
WPP4	0.315	5
WPP5	0.371	4
WPP6	0.479	2
WPP7	0.459	3
WPP8	0.585	1

Source: Table 3 was created by researcher after own calculation

Table 4. Scaled Performance Indices of WPPs and the Efficiency Ranking for 2020

	Scaled performance index	Ranking
WPP1	0	8
WPP2	0.175	6
WPP3	0.147	7
WPP4	0.300	5
WPP5	0.362	4
WPP6	0.464	2
WPP7	0.446	3
WPP8	0.541	1

Source: Table 4 was created by researcher after own calculation.

Table 5. Scaled Performance Indices of WPPs and the Efficiency Ranking for 2021

	Scaled performance index	Ranking
WPP1	0	8
WPP2	0.153	6
WPP3	0.142	7
WPP4	0.324	5
WPP5	0.347	4
WPP6	0.448	2
WPP7	0.436	3
WPP8	0.575	1

Source: Table 5 was created by researcher after own calculation

The rankings for each of the three years are displayed again in Table 6.

Table 6. Efficiency Rankings by Years

	2019 Ranking	2020 Ranking	2021 Ranking
WPP1	8	8	8
WPP2	7	6	6
WPP3	6	7	7
WPP4	5	5	5
WPP5	4	4	4
WPP6	2	2	2
WPP7	3	3	3
WPP8	1	1	1

Source: Table 6 was created by researcher after own calculation.

Briefly, according to Table 6, WPP8 has been the most efficient WPP, while WPP1 has been the least efficient, every three years. This can be attributed to the fact that WPP8's actual annual electricity generation in all three years has been significantly higher than the

annual average electricity generation used as input. For WPP1, the opposite is true. The same rankings are obtained for the years 2020 and 2021. There is a slight difference in the ranking of 2019.

Conclusion

In this study, efficiency rankings of eight WPPs in Turkey in 2019, 2020 and 2021 are obtained with improved OCRA. The weights of the inputs and outputs used in the improved OCRA are first obtained by the entropy method. It turned out that the weights obtained by the entropy method change little from year to year. As for the rankings, there is a slight difference for 2019. It is seen that WPP8 is the most efficient WPP for each year and WPP1 is the least efficient WPP for each year.

DEA was commonly utilized in earlier studies, as was mentioned in the literature review section. To the best of the author's knowledge, this kind of study has never used the improved OCRA. Rankings obtained by other approaches in future studies can be compared to rankings obtained by using improved OCRA. In addition, weights produced using different weighting techniques, which are often employed in the literature, may also be used in future research.

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CHAPTER 9

SOCIAL TRANSFORMATION IN MASS COMMUNICATION

(MASS CULTURE AND MEDIA SOCIETY)

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Introduction

Talking about social change means talking about changing society. The question is, *what should be seen from the change in society?* (Dunfey, 2019) Seeing change is not only focused on what material objects are changing, but also seeing how the process of change occurs, both from the rate and level. Not only see what has changed, but also whether there are new things that arise because of it (Barth, 1967).

As revealed by Wibert Moore, that social change is related to important changes in social structure, namely patterns of behavior and social interactions. Through this definition, it can be understood if the change can be realized because of social interaction beforehand. There is individual social contact to other individuals opens new gates to know the hidden secrets of the world. It can be said if there is no social contact, how can society be formed? Society can be formed because of interaction, namely social contact that is established through communication (Moore, 1960).

As for social change, there are several aspects, among others; (1) Community mindset; (2) Community behavior; and (3) Culture (Marullo & Edwards, 2000). The mindset of the community concerns changes in the mindset of the community regarding various social and cultural issues (Marius, 2006). Example: the concept of success is related to the attainment of the type of work as opposed to the concept of success based on the amount of income. Community behavior concerns changes in the social system of society. So, it is not only seen from the changes in behavior that have arisen, but from the aspect of an orderly system/order in society as a whole (Dalton, 2007). Example: Candidates for village heads come from all walks of life regardless of gender differences. Community culture concerns changes in cultural

artifacts used by the community. For example: clothes, means of transportation, means of communication, and others.

In addition to the above aspects, social change can also be analyzed by looking at the rate and level of change (Magubane, 2016). The rate of change is related to us seeing how the community's ability to adapt to that change. The level of change refers to the level at which the change takes place, whether at the level of a group, class or social institution (Haferkamp & Smelser, 1992). In social change, there are two theories regarding social change, namely the linear theory and the cyclical theory (Boudon & Whitehouse, 1986; Drucker, 1994). Linear theory is concerned with how society changes and develops from one point to another. This theory is divided into linear evolution and linear revolution. If linear evolution occurs slowly. For example, the change from primitive society to traditional society and so on (Schmitter, 1977). If it is linear the revolution occurs quickly. For example, the change from the New Order government to a reform government in Indonesia. Meanwhile, the theory of cycles relates to how social change cannot be directed to a single destination point but revolves according to a circular pattern (Redfield, 1947). What is happening now bears a resemblance to what was then. Setbacks and progress, for example of Fashion.

Society has gone through various kinds of social change; this is shown in the stages of sociological transition (Drucker, 1994). How does society live, what culture is formed and what has changed from time to time, starting from primitive, agricultural, traditional, transitional, modern, to postmodern times (Holt, 1997). In cultural categorization, several levels of cultural categories were initially recognized, including folk culture, low culture, and high culture (Dimaggio, 1987).However, after the development of science and information technology encourages the emergence of a new culture, namely mass culture and popular culture (Spaargaren & Mol, 1992).

Levels of culture is no longer divided into two categories, namely low culture and high culture (Jameson, 1979). However, a third cultural level began to emerge, which was born due to factors outside the normal cultural system. This form of culture is driven by the development of science and information technology (Hannerz, 1987). These cultures are Mass Culture and Popular Culture. Folk culture is culture that originates from the ancestors and is inherited. High culture is a culture

that was born because of the thoughts of students, such as Classical music, painting, modesty, neatness. Low culture is a culture that deifies capitalist (industrial) profits (Pendergast & Pendergast, 2000).

Mass Communication

The emergence of mass culture and popular culture is inseparable from interaction, where interaction here is facilitated by the discovery of material culture in the form of technology(Bleiker & Duncombe, 2015). One form of interaction from the use of technology is mass communication. Mass communication is defined as communication or sending messages to a wide audience (mass) by using a communication channel, namely the mass media (Chaffee & Metzger, 2001). The media in question include newspapers, videos, CD-ROMs, computers, TV, radio, and so on. Here West & Turner added new technology (new media) based on computers. However, currently the main focus of mass communication is with print (newspapers & magazines), electronic (TV & radio), and film mass media (Dominick, 2005).

Every development will have an impact, such as a change in cultural categorization. In the book Communication and Commodification: Examining Media and Culture in the Dynamics of Globalization by Idi Subandy Ibrahim and Bachruddin Ali Akhmad, it is said that there is anxiety arising from advances in communication and information technology (Ibrahim & Akhmad, 2014). The anxiety in question is the declining form of folk culture. Not only that, communication has changed fundamentally. For example, social groups informal and itinerant artists who carry local culture are currently fading and slowly being replaced by "figures" or celebrity figures on the mass entertainment stage created by popular media. Popular religious leaders replaced traditional clerics in giving sermons on religion and others. This is in line with the opinion of Joshua Meyrowitz (1985) where at this time we are losing touch with local-based culture and moving to a media-based global cultural environment (Meyrowitz, 1984).

Media Culture and Media Community

Ibrahim and Akhmad (2014) explain how we see the reality of today's society which has entered into media society (media culture). We are invited to understand the results of the formation of media culture in two senses, namely the micro scale (narrow meaning) and the

macro (broad meaning) (Ibrahim & Akhmad, 2014). Raymond Williams stated that, narrow meaning of media culture as a practice of creative, aesthetic and intellectual expression. Second, culture is the broad meaning of how humans live their entire way of life (Williams, 1960).

Furthermore, there are several approaches used by media and critical culture researchers in understanding the socio-cultural media, including the following approaches; (1) Media as Shapers; (2) Media as a Mirror; (3) Media as Packaging/Representation; (4) Media as Teacher (5) Media as Rituals; and (6) Media as "God" (Lin & Chen, 2015).

(1) Media as Shapers

This approach views the media as constructors/shapers. This perspective focuses on the ways in which the media influence viewers, because it is believed that media content has the power to influence the future of society. This approach then gave birth to various studies that emphasized the effects of the media and their impact on various aspects of life. For example, many depictions of sex and vulgar violence. This allows its influence on the viewer in real life as it is formed in the media. Growing stereotypes & marginalization of certain groups in society. For example, the depiction of a "household assistant" in soap operas refers to a certain ethnicity/ethnicity.

(2) Media as a Mirror

This approach views the media as a mirror, that is, a reflector or mirror of society. This perspective sees the role of the media in reflecting back (events, behavior, identity, social relations/values) of society. "Media follows changes in society, rather than the way the media causes changes in society". This approach then encourages research on changes in structure, cultural norms or politics that actually look at media content. If the above shows that sex and violence are forms of the media, then this perspective argues that the media only reflects sexual and violent behavior that already exists in the real world.

(3) Media as Packaging/Representation

This approach sees the circular relationship between media as shapers and mirrors. Media content does not reflect the reality of society in a neutral and perfect way. Previously the media would select and present messages in various ways/specific forms so that they would have appeal or be dramatic. So, the media does not present to the viewer a complete mirror, but an arrangement of representations of the world that has been selected and packaged in such a way.

(4) Media as Teacher

This approach looks at the content of the media with its role as an educator, which is also aligned with the function of the mass media to educate (to educate) the public. This perspective opens up a view of how the media is seen as a means/tool to learn various aspects of the world, either by us directly as viewers or through other people who learn from the media.

(5) Media as Rituals

Media is a “civil religion” with its rituals. This approach sees the rhythm of the media in reporting, presenting, displaying media products as a kind of ritual. The media has determined the schedule and made it in such a way that the audience will be eagerly awaited. It's the same as waiting for religious rituals or beliefs that are always carried out routinely. Media ritualism is considered to be society's new religious ritualism (consumption of media content and various popular cultural products). Such as drama shows, live music, infotainment, football matches and others, are expected to be “worshiped & celebrated” by the audience. As a result, many complain, when the time for teaching/Sunday school worship/children's prayers is replaced by time for watching cartoons.

(6) Media as “God”

This approach sees the media as replacing the role of “God” in the traditional sense, whether it is seen as “second God” or even “first God”. The media has given and commanded the path of goodness, the solution to fight evil based on its own version. Then who are the "gods

of media"? Stars, idols, artists (popular culture packaging figures) These figures preach certain values & lifestyles that must be followed by the audience, if they want to achieve the hope of happiness as the figures do. So, it can be said, the media also sells hopes & dreams. For example, TV has succeeded in attracting and offering consumer culture & lifestyle advertisements. In order to be "happy" as offered by the "gods" earlier, the public must obey & buy that consumer product.

Mass media is an institution that connects all elements of society to one another through the mass media products they produce (Christians et al., 2009). As for the characteristics of the media as a channel for production & distribution of symbolic content, public institutions that work according to the rules, voluntary participation (sender or recipient), work professionally and bureaucratically and the media as a combination between freedom and power. Mass media products are called mass efforts or cultural works (Lin & Chen, 2015). The examples of mass media products include; soap operas, movies, news, news articles, family programs, quizzes, music shows, reality shows, advertisements and more.

When the Mass Media performs its role in fulfilling the needs of a heterogeneous wide audience, there are other factors that contribute and can ultimately influence the results of media work. These factors are economic interests (McLeod et al., 2010). Remember that the mass media is an institution that has a complex system, many elements/aspects/parties involved in it. Therefore, to fulfill the interests of all elements in the media system, it is not uncommon for the mass media to turn into commercial media. This means an industry that requires a lot of funds. This is reasonable because basically the cost of mass media production is high. However, it becomes different when the main prospect of the mass media turns only to seek profit.

The demands of industry and the overpowering of the masses shape and cause mass culture. Popular culture is (1) a culture that is built on the basis of pleasure and differentiates from work boredom, (2) a culture that destroys traditional cultural values, (3) culture becomes a problem in Marx's economic view, and (4) a culture that hatches from above (Macdonald, 2015).

(1) Culture based on fun

According to Richard Dyer (1992), popular culture shows more of the entertainment side and is more consumptive. When someone runs away from work boredom, he will look for a hobby/fun. If it has become a hobby, then whatever the cost will definitely be incurred. This is what then causes the consumptive attitude to emerge (Dyer, 1992).

(2) Culture that destroys the value of Traditional Culture

Culture formed in the mass media is the result of cultural reproduction. For example, there is already a culture in society that cheating is forbidden, but when TV dramas frame/shape infidelity in such a way which is then shown to a wider audience, the understanding of the concept/culture of infidelity changes. The concept has changed, which initially violated cultural values (religion, custom), to become something ordinary, commonplace, normal, and many people end up doing this action.

(3) Culture becomes a problem in Marx's economic view (Marx, 1859)

As explained above, the mass media transformed from public media into commercial media. Economically, the mass media is defined as a capitalist industry that can generate profit coffers from the content/programs created. In addition, popular culture is also born because of the hegemony of the mass media in public cultural spaces. Hegemony is a theory put forward by Antonio Gramsci, referring to class influence/power (economic, social, political, & ideological) (Bates, 1975). As well as his ability to persuade other classes to see the world in a perspective that supports his rule. This means that in the formation of mass media content/messages, it cannot be separated from the influence of who is the communicator and who controls the mass media. There is one economic concept, but it is relevant to describe the condition of the media in Indonesia today. The concept is Commodification, namely the process of changing goods & services that are valued by their uses into commodities that are valued because of what they will provide in the market. The question is what is commodified, and what does it have to do with the formation of popular culture? The commodification of the Mass Communication process, from the beginning how the message was formed and packaged, by

whose influence, who is the target and for what purpose. There is one study from Merlyna Lim regarding media mapping in Indonesia. This becomes interesting when you see who is behind the media and their background (Agarwal & Lim, 2014).

(4) The culture that hatched from above

This means that what is liked by people in the upper class (excellent in the economy), then that is what many people imitate.

Media culture and popular culture cannot be separated from technology. Technology is an intermediary for cultural communication between one group and another (Toomey & Chung, 2015). Phenomena capable of forming global cultural networks, and the spread of global cultural ideologies. Globalism is one of the implications of the birth of mass culture and popular culture. That is what is meant by the concept of Global Village (McLuhan, 1994).

Telematic Development and Social Change (The Impact of Information Technology on Life)

Social Change: Development and Modernization

As we have understood from the start, change is a process, namely the process of changing from something that did not exist before to exist, or from something that was already there to change into something new. This process of change also takes time, sometimes it even takes quite a long time (see the theory of linear change, evolution & revolution). Furthermore, it can also be seen how the change is going, is it changing towards a good (progressive) situation or is it towards a bad (regressive) situation? Then the question is what has changed?

Before we look at the level of social change in the field of information and communication technology, let's first understand the concept of development and modernization. Talking about change cannot be separated from talking about development and modernization. This is based on the concept of development at the political level (Surbakti, 1992), that development and political modernization are political changes and not the other way around. Why is that?

Development

Development is a business process of creating something from nothing into a concrete object. To make it easier, let's imagine/illustrate building a house. The construction of the house, the process of how the house was originally planned (how was it formed, how much was the budget, who was the architect, the builders), then the house was started to be formed by making the base/foundation with the aim that the house would be sturdy. Furthermore, fences/walls were made, from shorter and higher, and so on until the house was in the physical form of a complete house. From this illustration we can imagine the meaning of the concept of development, namely as a planning effort, having clear goals with a gradual process by the subject matter and how the development reaches its peak (finishing).

Modernization

Modernization is a process of change to create conditions that enable people to live according to the dynamics of the times. Modernization is related to changes in the social system. In sociology it is explained how humans change and experience a period of sociological transition, from primitive times, to now at the peak of the transition there is the postmodern period. So, the change also includes the characteristics of development and modernization (Tasruddin et al., 2021).

Development of Information & Communication Technology

In a social system, humans need a social interaction which will later affect the entire system of social structure/social static society. As a unit, this system runs and develops side by side. So is the case when the social system changes, or so far, we have learned about social change. One of them is social change caused by the birth of information and communication technology. This technology was born of course to meet changing human needs according to the dynamics that occur. In the history of communication between humans: there are four (1) found language (verbal & non-verbal) as a means of interaction, (2) found art of writing/drawing as the art of speaking with language, (3) reproduction of written words, printing tools, encouraging the birth of mass communication, (4) electronic communications (Nordenstreng et al., 2016). From these determinants, it can describe how humans develop, starting from being able to create communication with other

creatures (using language and other visual symbols), interpreting the language (from the perception of himself and others), and how humans adjust to themselves with nature, and create and use tools/technology to overcome their environment.

At this time, a period of media convergence or new media is underway, namely the merging of several media into one. For example, smart phones (television, radio, internet, etc.), I-watch, and others. The period when a communication technology platform has been found, then all forms of communication technology will be simpler in one device. Humans in making life innovation decisions depend on the speed of time and the content of the innovation itself. Shorter time and more diverse innovation content will affect one's decision process. The problem of social change related to new media is closely related to these stages. For example, the use of shopping applications on the internet. When someone chooses to reject innovation in the form of online shopping, then the online shopping platform will also not be used (decision to refuse). However, due to pressure (natural phenomena, human needs, urgent time, rare goods, etc.), for example, inevitably the person has to use the online shopping innovation (decision to accept/adopt). This example also explains how individual society responds; each individual is different in responding to an innovation. In a society that is open to social changes such as postmodern society, innovation is a lifestyle (habit), whereas in modern society, innovation is viewed rationally. Transitional societies view innovation as something that must be tried and its benefits (profits and losses) proven, and traditional societies reject these innovations.

The social changes that have occurred due to the development of telematics have given rise to a cyber society or cybercommunity(Chairul et al., 2019). A social life that can be sensed as a real life, where social relations among members of the community are built through sensing and can be witnessed as they really are. While, cybercommunity or cybercommunity is the life of a group of humans who cannot be directly sensed through human sensing but can be felt and witnessed as a reality. A human fantasy about another world that is more advanced than the current world. This fantasy is a human hyper-reality about the value, image and meaning of human life as a symbol of human liberation from the power of matter and the universe. People who build social interactions and processes only on cognitive aspects through communication media.

Community to be cybercommunity. Information technology changes the shape of society and its civilization. The local world community becomes a community global world (the big village) as expressed (McLuhan, 1994). The presence of this new container develops space for a new life, that is, humans unknowingly live in two worlds, the life of real society and the life of cybercommunity. The question is, when and how did humans become cybercommunity?

When humans surf in cyberspace and to be able to enter that virtual world, humans need tools in the form of technology, such as hardware; computers, laptops, smartphones or other hardware and software; internet networks, applications, portals, web and others. We call these devices technology, and this technology is our bridge to the virtual island from the original destination of the real island. Some terms attached to cyber media include: virtual media, online media, new media, digital media, e-media and network media. These terms are some of the mentions that are often attached to this new technology, not only referring to the hardware, but also the software that is able to provide connected access (Nasrullah, 2012).

If we just know only one-to-many known communication patterns (from one source to many) such as books, radio, TV, and one-to-one communication patterns (from one source to one communicant) such as telephones and letters, so now there are new communication patterns, namely many-to-many and few-to-few. This communication shows how to work when connected to the network (online) without considering location restrictions, hardware, or programs/applications used (Roberts et al., 1984).

Entering the virtual world is the same as when we want to enter a house in the real world. Before entering the house, we will pass through a door or gate, in cyberspace this door is called a portal. Defines a portal as a door or gate to enter cyber/virtual space and surf further in this space. These portals are like a browser/browser (Internet Explorer, Mozilla Firefox, or Google Chrome), then enter the site address (web/homepages). Other portals that don't require a browser, such as the Yahoo! Messengers (Danuri et al., 2019).

Along with the times, information and communication technology is also increasingly variable or of many types according to the functions

and uses of the cyber media itself. According to Nasrullah (2012), there are several cyber media today, including:

(1) Site (Web Site)

Site is a page that is a single domain address that contains information, data, visuals, audio, loads applications, and contains links from other web pages. Example: www.uksw.edu

(2) E-mail

It called electronic mail. The existence of e-mail is also used as a marker as well as an identity prerequisite for the use of other types of cyber media. If in the real world such as Identity Card/Passport/License. Example: student e-mail in the university (students can only access the learning link by using their respective student e-mails).

(3) Bulletin Boards

Mail List or mailing list facilities, a type of cyber media to communicate in a community that has the same interests or comes from the same place. Example: Google Group or Yahoo Group.

(4) Blog

At first, blogs were personal sites that contained links to other sites, but over time, blogs often contained journals or personal writings of the blog owner. In the blog there is also a comment column that can be filled in by visitors to the site. There are two types of web facilities, the first is personal homepages ___.com or ___.net, and the second is facilities that provide free web-blog pages, such as word press or blogpost.

(5) Wiki

Sites that collect articles and news according to a keyword or in the real world are often called dictionaries. In practice, every explanation contained in the wiki site is done by visitors, meaning that there is collaboration between visitors to fill in content on this site (filling in,

editing, editing, commenting). Therefore, wikis are also often referred to as massive encyclopedias.

(6) Messager Application

The initial form was in the form of SMS (short-message-service) offered by mobile phone number providers. Furthermore, it develops by utilizing software connected to the internet to communicate by sending short messages. For example: BBM, Line, Kakao talk, WhatsApp, and others.

(7) Internet Broadcasting

Cyber media capable of providing live television and radio broadcasts. Example: ___(radio)FM which can be accessed via the internet.

(8) Peer-to-peer

Just like SMS, which is a medium for communicating between internet users, such as conversations or data sharing. Example: Yahoo! Messenger, Google Talk.

(9) The RSS

Software to retrieve and collect news content according to the user's wishes. Just like search engines, RSS will display a full page of links on a special page. Usually, the blog service provider provides a link from the RSS. Another model by subscribing to RSS, by entering an email address.

(10) MUDs

A computer program that is arranged in such a way that it can be accessed by various users at the same time. There are two models of MUDs programs, adventure MUDs where each player must complete a specific task/mission, and social MUDs which only carry out social interactions. Example: Online games.

(11) Social Media

Media used to publish content such as user profiles, activities or opinions, communication space and interaction in social networks in cyberspace. Example: Facebook, Twitter, Instagram (Nasrullah, 2012).

The Other Side of Human Life: Cybercommunity

Basically, hyper-reality was born from a human imagination (Renwick, 2000). Imagination or fantasy about another world that is more advanced than today. Hyper-reality or fantasy that is imagined in the form of values, images, and the meaning of human life as a symbol of human liberation from the power of matter and the universe. Technology is present and manifests what was once a wishful thinking into something real. The cybercommunity is present, and uses all the methods of real people's lives as models that are developed into the lives of virtual communities.

(1)Social Process and Social Interaction of cybercommunity

Cybercommunity builds itself by fully relying on interactions and social processes in the life of intra-network groups and between fellow members of cybercommunity. Meanwhile, the nature of social processes and interactions is determined by the interests of community members in cyberspace (Walmsley, 2010). There are two characteristics, namely temporary and permanent. Temporary in nature means members of the public who are passing and only passing temporarily in cyberspace. Browsing, chat, search and then leave it. Sedentary means community members who live in cyberspace. In cyberspace, identity is shown by ownership of an email account, website or provider. Dissociative social processes occur because there is competition, conflict that occurs because of various backgrounds. For example: web wars, creating hoaxes, creating provocative messages. Associative social processes occur because there is cooperation. Furthermore, it produces a process of information accommodation and cultural assimilation. Example: music collaboration, online shopping & learning. The most important point is that the things above can happen only because social contact & communication occurs first in cyberspace (Evans, 2000).

Online social interaction is a characteristic of the Information Society. The information society is a society that in its daily life depends on information, where information affects various areas of people's lives. This community can access, utilize, and share information with others. The characteristics of the information society, including: people who are exposed to mass media and global communications, people who are aware of information and get enough information, make information a commodity of economic value, relate to other communities in global community system and access information superhighway (high speed). The information society is competing to fulfill knowledge with information (Alyusi, 2016).

(2) Virtual Social Groups

There are two models of social group membership in cyberspace, namely intra group & inter group. Intra groups are called intranets, autonomously managing themselves, having their own interests, needs and internal rules. Example: a group intranet network at a university (library, faculty, central administration, etc.) where the central server that manages is the university's Information Center. Although in general, this intranet relationship only applies internally, basically an intranet at a university is one of the wider social virtual world systems, or we call it the internet. The nature of membership, free (free of charge) such as e-mail or chat services and member status on certain providers or websites. The larger the group (network) or people passing by, is a measure that the network has a marketable public quality. In addition, groups also have crowd characteristics, namely they gather for a while and then leave (Bungin, 2011).

(3)Cybercommunity Culture

One characteristic of society is creating culture. In cybercommunity the culture that is developed is a culture of imagery and a culture of exchanging meaning in the space of symbolic interaction. Universal culture in cybercommunity, as owned by real society, among others:

- Tools and Equipment life

Information technology such as computers, laptops, smartphones are tools of life for virtual communities.

- Livelihoods and Economic Systems

Selling services with a substitution economic system, meaning that if someone uses a provider's network or rents space on a website, then that person provides a fee substitution to the owner of the space. Space owners can also sell their website. This is also the same as placing an advertisement in the mass media. Another example is a YouTuber who has a YouTube account and a space filled with content. The more people see, give likes or dislikes, subscribers and even advertisements appear in the content, the more the YouTuber's income will be.

- Community System

The virtual social system is in the form of a network group system.

- Language

The language used in cybercommunity generally uses English. Furthermore, signs or symbols appear. In (Alyusi, 2016) it is explained that virtual body language describes the use of symbols in traditional text-based online communication to represent subtlety, emotion or depiction of expression. The "emoticons" symbol above is used to represent a person's state when interacting. This shows a picture of someone's expression in communicating. There are also terms "netspeak" and "netlingo". Netspeak is defined as a conversation as if it were writing. While netlingo is defined as writing text as if it were speaking. The next phenomenon that emerges as the language of cyber media is “slang language”. The word *alay* is popularly interpreted as the behavior of teenagers who make themselves feel cool, beautiful, great among others. However, the word *alay* also refers to the stigma of "plebeian". Both *alay* as behavior and as language, both are social constructions. Something that appears and develops in society at the same time, even though sometimes people with *alay* behavior do not speak *alay*, or ordinary people speak *alay* (Nasrullah, 2012).

- Masterpiece

Masterpiece in cybercommunity place art as a measure of imagery and meaning. For example, the more netters give likes to content on YouTube, it means that the work/art is considered good. And vice versa, the more dislike signs given by netters, the work/art

is considered ugly. But what's interesting is that because of the ease with which it is possible to give an assessment (like or dislike), it provides an opportunity for the creation of a low culture of virtual works. (See again high culture high culture material and low culture low culture).

- Knowledge System

A knowledge using direct notification and learning process by trial & error. Usually, this knowledge also goes on a rolling basis, meaning that every netter who gains knowledge will be distributed to other fellow members. In the cybercommunity's knowledge system, the highest award lies in how much they can overcome media technology cases faced by fellow community members. This also shows how the social status of cybercommunity, namely anyone who can solve technological problems, will be at the highest level. Example: School operators will have a higher position than ordinary teachers, even though they basically have the same profession as teachers, but when the OS has qualified technological capabilities, they will receive the highest award.

- Religious System

The belief of cybercommunity is time and belief that everything in this world can be solved when there is effort. The main feature of the virtual culture is its very dependent on the media. Culture is real in the media and in the cognitive minds of the human users.

(4)Social Institutions and Social Control Cybercommunity

Systems of social institutions and control in cybercommunity in general, such as logins, passwords, PIN numbers as keys to enter a website. If someone wants to enter this space without having a key, then he cannot enter, meaning he has not been accepted or joined as part of the space group. Example: must have a student identification number and password that has been registered as a student at a university to be able to access every learning system at that university. Even though the nature of cyberspace is public property that can access all information, the authority and access decisions also rest with the network owner.

In addition, general ethics in real society are also carried out in virtual life. This is like a social sanction given by the violator of ethics in cyberspace. In addition to the Law that regulates Information and Electronic Transactions in Indonesia. Then, what form of punishment? The punishment or sanction here can be in the form of imprisonment (real world) according to the level of virtual guilt. It can also be a "cyber prison", such as blocking an account or the general term "blacklist". Social Stratification, Power and Leadership of Cybercommunity (Chairul et al., 2019).

The formation of social stratification is determined by how much network ownership and information can be accessed from it. Likewise, the rate of entry and exit of website visitors. In cybercommunity, it is not automatically that the group in the upper stratification is the upper class. Popularity is a measure of determining social class in cybercommunity. Its formation was also based on the needs of the community, such as educational sites, Google became very popular. If it is associated with power, then the top stratified members are still in the lead. So, every member who wants to become a member of the virtual community must pass through them.

(5)Social Change in a Cybercommunity

Changes in cybercommunity are known by two concepts, physical and social changes. Physical changes are referred to as upgrades related to meeting the ever-changing needs of cybercommunity. Meanwhile, the social changes, namely the various problems of cybercommunity arise because of the reflection of the reality of real society.

Cybercommunity cannot be separated from reality. Just like Auguste Comte's opinion, that studying society means seeing two inseparable systems, namely the social statics and social dynamics of that society. It's the same with cyber society. The explanation above is the embodiment of the two community-forming systems into cyber society. Social Statics namely the social structure of society in the form of groups, social institutions, layers, and power. Social Dynamic (social change), namely the functions of society involved in processes, changes, social interactions (Martineau, 2000).

Hyper-Reality: The other side of Cybercommunity

Hyper-reality is an electronic media technology capability that allows designers of media setting agendas to create reality by using a production model called simulation, namely the creation of real models without origin or initial reality(Barney, 2004). Through the simulation model, humans are trapped in one space, which they realize is real, even though in fact it is pseudo, virtual or imaginary. Pseudo reality space can be described through the analogy of a map. If in a real space, a map is a representation of a territory, then in a simulation model, the map precedes the territory. Social (territorial) reality, culture or politics, is now being built based on fantasy models (maps) offered by the information media. For example, the depiction of beauty is like "idol" on TV or on YouTube. Other examples of "prank" actions are fun, laughter, humor, and this becomes natural, even though in reality sometimes real actions "that make laugh" make other people suffer. Therefore, the difference between real and fantasy or true and false becomes very thin. Humans live in a virtual and imaginary world. Living in a world full of information and communication technology tools requires people to be able to master the telematics technology. This is important so that he can build a new life and civilization for mankind.

The growing trend of “e -... “in the cyber world

The concept of "e" that is embedded in front of the word activity is a concept that indicates that the activity only occurs through internet applications. Almost and even much of the current activities that are headquarters occur in cyberspace(Barnatt, 2017). The ability of internet technology to build intra and inter-server networks is used to build other facilities that can help. For example, the idea of e-government (running the government). Ideas are not a virtual illusion whether you want it or not, people are heading there and are a reality that is truly real.

The concept of "e" that is developing in Indonesia:

- Government to Government (G to G)
- Government to Business (G to B)
- Government to Community (G to C)
- Business to Business (B to B)
- Government to Business to Community (G to B to C) (Hwang et al., 2004)

These concepts allow for two-way or three-way communication. Thus transparency, efficiency and supervision between them can be carried out properly. That is the idea that is being built from e-government activities. Media hyper-reality creates a condition so sophisticated that in it everything is considered to be more real than reality. Falsehood is considered truer than truth. Issues are more reliable than information (Antony & Tramboo, 2020). Rumors are considered truer than the truth. Media hyper-reality has created several forms of sociocultural impact, including:

- Disinformation

What is given by the media is believed to be a truth and fact. Without cross-checking, this information can become disinformation-information that deviates from the truth (Hernon, 1995).

- Depoliticization

Making audiences indifferent to political life, politically illiterate and unaware of their rights and obligations in political life (Mutz, 1992).

- Information Banalization

Banal information, garbage, contains waste. The content or message conveyed is not of good quality.

- Information Fatalities

Information in the form of content/messages that can lead audiences towards danger/disaster.

- Schizophrenia

Refers to the meaning of mental disorders, hallucinations, confusion, confusion, confusion. A lot of information/content/messages gave birth to various interpretations and caused confused and panicked audiences. It can also be interpreted that in terms of the impact of the use of cyber media, it will affect the psychological side of virtual society who live in hyper-reality

- Hyper-morality

The audience can no longer distinguish between what is right and wrong, good and bad, what is permissible and what is not allowed, what is commanded and what is forbidden, what is lawful and what is unlawful, what is genuine and what is fake, what is honest and what is dishonest.

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