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A Measure Against Unemployment Problem Expected to Occur by Industry 4.0: Cittaslow

Endüstri 4.0 Nedeniyle Oluşması Beklenen İşsizlik Sorununa Karşı Bir Önlem: Cittaslow

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Abstract

Industry 4.0, or with the other name the 4th industrial revolution, is composed of integratedly with components like data exchange and related manufacturing technology thanks to automatic control systems and internet. Due to Industry 4.0, it is expected that smart factories where productivity is at the top and each data can be viewed simultaneously will become popular. Smart factories are becoming current issues as activities where machine-robots do almost impeccable manufacturing and the human factor is minimized in production. Due to the increase in the number of smart factories in the forthcoming period, it is thought that unskilled labourers will be unemployed. At this point, Cittaslow may be one of solutions to reduce unemployment as a local development model. This study has been conducted for emphasizing that, local production, sales and other similar activitities can create employment opportunities for women and unskilled labor in cittaslow cities. This study was prepared by using the literature review of qualitative research methods and some concepts in tourism literature were explained and the concepts such as Industry 4.0, unemployment and employment were emphasized. Within the scope of Cittaslow, a number of interviews were held with the authorities of the municipalities of cities with slow cities. Therefore, interview method was also used. In the conclusion of the study, the activities of Cittaslow led to an increase in employment and public income, and in the recommendations section the activities that Cittaslow cities could implement for employment and income growth.

Key Words: Industry 4.0, Employment, Unemployment, Cittaslow.

Öz

Endüstri 4.0 veya diğer bir ifadeyle 4. sanayi devrimi; otomasyon sistemleri ve internet sayesinde veri alışverişi ve buna bağlı üretim teknolojileri gibi bileşenlerin entegre şekilde çalıştırılmasıyla oluşmaktadır. Endüstri 4.0 sayesinde her bir verinin eş zamanlı izlenebileceği, verimliliğin en üst seviyeye çıktığı akıllı fabrikaların yaygınlaşması beklenmektedir. Akıllı fabrikalar üretimde insan faktörünün en aza indirildiği, makine-robotların neredeyse hatasız üretim gerçekleştirdiği organizasyonlar olarak gündeme gelmektedir. Önümüzdeki dönemde akıllı fabrikaların artması nedeniyle ilk etapta özellikle niteliksiz iş görenlerin işsiz kalması öngörülmektedir. Bu noktada yerel bir kalkınma modeli olan Cittaslow işsizliğin azaltılmasına yönelik önlemlerden biri olarak karşımıza çıkmaktadır. Araştırma Cittaslow kentlerindeki yerel üretim, satış vb. faaliyetlerin kadın ve niteliksiz iş gücüne istihdam yaratabileceğini vurgulama amacı ile yapılmıştır. Çalışma, nitel araştırma yöntemlerinden alan yazın taraması kullanılarak hazırlanmış, turizm yazınındaki bazı kavramlar açıklanarak, Endüstri 4.0, işsizlik ve istihdam gibi kavramlara vurgu yapılmıştır. Cittaslow kapsamında yavaş şehir olan şehirlerin belediyelerindeki yetkili kişilerle birtakım görüşmeler yapılmıştır. Dolayısıyla mülakat yöntemi de kullanılmıştır. Çalışmanın sonuç bölümünde Cittaslow faaliyetlerinin istihdam ve halkın gelir düzeyinde artışa yol açtığı, öneriler bölümünde ise Cittaslow kentlerinin istihdam ve gelir artışı için uygulayabilecekleri etkinliklere yer verilmiştir.

Anahtar Kelimeler: Endüstri 4.0, İstihdam, İşsizlik, Cittaslow

1. Introduction

The fast living and fast consumption habits which are results of globalization, have an impact all over the world. Businesses compete with each other and try to obtain the highest market share in target markets by eliminating the endless needs of people at the most cost-effective way. The efficiency provided by technological developments raises enterprises to the front row in the competition. Industry 4.0 (4th Industrial Revolution) is a technological revolution that both countries and businesses want to catch. Industry 4.0 foresees the use of data exchange and associated production technologies in an integrated manner thanks to the automation systems and internet. Industry 4.0 means that production is at the highest level in intelligent factories by means of machine-robots. In this way, waste of resources will be minimum, unqualified staff will not be employed, production losses due to mistakes caused by people will be prevented.

Futurist Ufuk Tarhan states that (2017) increasing the robots usage rate and number with Industry 4.0 will not cause the educated and qualified labor force to be unemployed. People who are unemployed due to Industry 4.0 will be able to be employed in new occupations that will be needed after receiving the necessary training. According to experts, it is foreseen that unemployment rates will increase due to the usage of robot-machines, which is expected to increase with Industry 4.0, since it will reduce the need for people as a labor force. It is expected that the unemployment will be formed by the adaptation of the enterprises to the industry is more likely to occur in unskilled workers and women workers. The creation of jobs for unqualified labor force which is expected to be unemployed in the years ahead is seen as one of the important issues that countries should find solution. At this point, Cittaslow's activities appear to be a solution for employment creation especially for women and unskilled labor. As a local and sustainable development model in small cities, Cittaslow aims to increase employment and increase the income level of the city while preserving the original structure, historical, cultural and natural resources of the city.

In this study, the industry 4.0, employment, unemployment, Cittaslow’s concepts, robot use, Cittaslow cities in Turkey and samples from the world are examined; then the contribution to employment, the growth of the Cittaslow activities, creating 4.0 industry of Cittaslow activities are explained in the evaluation part, and expected unemployment solution is emphasized. In the conclusion and suggestion part it is conducted that Cittaslow activities should be done especially for unskilled labor and women's employment, and what needs to be done by local Goverments of Cittaslow Cities to increase employment. It is not found in any studies that include working together to increase the employment problem created by Cittaslow activities and the unemployment problem that is expected to be created by industry 4.0. For this reason, it can be stated that the study is different and new in terms of content and original.

2. Literature Review

2.1. Industrial 4.0 Concept

Today, production is realized by computer technologies, multi-axis manufacturing robots and internet infrastructure. In the future, unmanned production is aimed. Unmanned production will be provided by smart machines. In this new period, unmanned production will be carried out in smart factories. The extraordinary development of computer technologies is one of the biggest factors in the beginning of

the smart factory period. This period is named as Industry 4.0. Industry 4.0 is the name of the period during which the production bases of each component communicate with each other, which make decisions and supervise themselves (Halıcı, 2016: 24).

"The current globalization is faced by the challenge to meet the continuously growing worldwide demand for capital and consumer goods by simultaneously ensuring a sustainable evolvement of human existence in its social, environmental and economic dimensions. In order to cope with this challenge, industrial value creation must be geared towards sustainability (Stock and Seliger, 2016: 536). With ever-increasing market competition and advances in technology, more and more countries are prioritizing advanced manufacturing technology as their top priority for economic growth (Chen, 2017: 588). Recent advances in manufacturing industry has paved way for a systematical deployment of Cyber-Physical Systems (CPS), within which information from all related perspectives is closely monitored and synchronized between the physical factory floor and the cyber computational space" (Lee et al., 2015: 18).

The concept of cyber-physical systems refers to the whole of industry 4.0 technologies and value chain organizations, which are based on the internet of objects, the Internet and services (Endustri 4.0 Platformu, 2018). Industry 4.0, products, production stages their delivery to the final consumer and it is expressed as the "intelligence" of all the stages up to its recovery. This process has the potential to change products and services incredibly (Acar, 2016: 23). Industry 4.0 system production machines are in synchronous communication with products (Endustri 4.0 Platformu, 2018). The terms used in defining Industry 4.0 are given in Table 1 (Fırat and Fırat, 2017: 6).

Table 1: Terms Used in Defining Industry 4.0

No	Terms
1	Cyber-Physical Systems
2	Internet of Things
3	Smart Factory
4	Internet of Services
5	Smart Product
6	Machine-to-Machine
7	Big Data
8	Cloud Technologies

Source: Fırat, S., Ü. and Fırat, O., Z. (2017). "Sanayi 4.0 Devrimi Üzerine Karşılaştırmalı Bir İnceleme: Kavramlar, Küresel Gelişmeler ve Türkiye", *Toprak İşveren Dergisi*, 114: 10-23.

The world, industry 4.0, nanotechnology and biotechnology, including information technology (ICT) and material technology-science has started a whole new process. Industry 4.0 is not the emergence of a new sector. Thanks to the rising processor capacity, it is the intelligence of all processes, goods and services (Acar, 2016: 23). In 2010, production systems with artificial intelligence, expressed as cyber physical systems and expressed as Internet of Things, started to come up in the USA. Since 2012, it has been transformed into a state policy in Germany (Halıcı, 2016: 24). Germany announced the Industry 4.0 strategy in 2013 (Chen, 2017: 588). The industry was introduced as a new concept at the Hannover Industrial Fair in Germany, and was developed to provide the needs of the sectors in a fast, secure and innovative way (Rojko, 2017: 80).

Industry 4.0 started with the German government's project of integrating the traditional manufacturing industry with the advanced technology. The purpose of this is to be able to realize completely independent, efficient, ergonomic and qualified production. Industry 4.0 determines a historical process in terms of the effect of development in technology on production (Halıcı, 2016: 24). The German industry initially aimed at identifying the priorities of a coherent policy framework with industry 4.0 to define technological changes in production and maintain global competitiveness. The revolution is a logical continuation of the previous three industrial cycles. The title of 4.0 indicates that industry 4.0 is accepted as the fourth industry (Kusmin, 2018).

Industry 4.0 is focused on creating processes, procedures and intelligent products. At the smart factory, workers, machines and resources can easily communicate. Industry 4.0, the essence of the industry vision, is the collaboration of objects, services, the Internet, machines, people, products, means of transportation and everything for a more efficient production (Crnjac at al., 2017: 22).

"Our next generation of industry—Industry 4.0—holds the promise of increased flexibility in manufacturing, along with mass customization, better quality, and improved productivity. It thus enables companies to cope with the challenges of producing increasingly individualized products with a short lead-time to market and higher quality. Intelligent manufacturing plays an important role in Industry 4.0" (Zhong et al., 2017: 616).

Today, we can see that the transformations affecting global industries affect mostly the employment of countries. Many of these transformations include creating important jobs, laying off jobs, increasing labor productivity, expanding employee knowledge and skills gaps, and so on. It is possible to say that it has a grave effect on employment in a wide range and will continue to exist. Perhaps the starting point of industrial revolutions or transformations is the search for technological contribution to the solution of problems in employment and productivity. Industry 4.0 or 4th Industrial Revolution is a collective term that includes many modern automation systems, data exchanges and production technologies. This revolution is a set of values consisting of the Internet of objects, services of the internet and cyber-physical systems. At the same time, this structure plays an important role in the formation of an intelligent factory system. This revolution will allow more efficient business models to be created in the production environment, as each data will be collected and well monitored and analyzed. Industry 4.0 consists of 3 structures in general terms (Endustri 4.0 Platformu, 2018):

1. Internet of Things,
2. Internet of Services,
3. Cyber-Physical Systems.

Feature of Industry 4.0; machines, people and services to create synchronous connections and definitions, with the maximum degree of flexibility in the form of customer-demanded and digitalized intelligent manufacturing model is developed. The origin of this model; goods and services production from centralization to localization, the transition of goods and services, not a single type, is transformed into a personalized form (Fırat and Fırat, 2017: 10-11).

There is a 4-layer hierarchical structure in the process and automation systems used in industry. Industry 4.0 brings this conventional hierarchical production automation scheme to the upper level of the hierarchy, which conforms to the system

of cyber-physical systems. In this way, the upper floors are open to synchronous communication between both human and machines, and the whole system can be carried out in an unmanned manner when needed. The positive aspects of this system can be summarized as follows: At all levels of the process, durability and accuracy are increased, flexibility is ensured, maintenance and repair time is shortened, safety and reliability increased, and production errors resulting from machinery and equipment are reduced (Şişbot, 2016: 25). Industry 4.0 is based on the following principles (Endüstri 4.0 Platformu, 2018):

1. Interoperability: By the capability of cyber physical systems (eg, assembly terminals, workpiece carriers and products), it means that smart factories and people communicate synchronous with each other using the Internet of services and objects.

2. Virtualization: It is a structure similar to smart factories in a virtual environment. The system consists of connecting the data obtained from the sensors with virtual plant and simulation models.

3. Autonomous management: The ability of the cyber-physical systems to make spontaneous decisions within smart factories.

4. Real-Time Capability: Ability to collect and analyze data. This allows the system to operate quickly.

5. Service Orientation: Consistent delivery of services to the smart factory, people and cyberphysical systems through the Internet.

6. Modularity: Providing flexible adaptation system to intelligent factories for changing requirements of individual modules.

It is expected that this revolution will directly affect the economy, the environment, employment and all segments of society as well as changes in production technologies. The intelligent machines on which Industry 4.0 is built to communicate with each other will result in a significant increase in mass production and the subsequent production of individualized production. Production and delivery can be controlled from one place (Saka, 2016: 20). Industry 4.0 is expected to have a positive impact on the production sector. However, in order to see the positive effects, production processes must be transformed into intelligent processes. New investment is needed for this. If necessary investments can be made, industrialist will not have to experience bottlenecks in their production processes, they will be able to balance production optimally, excessive dependence on human beings will be eliminated in production, capacity utilization will be maximized and the time spent for preventive maintenance will be shortened. Supply chain, goods and services market will be better monitored and accurate estimates can be made (Şişbot, 2016: 25). By analyzing the data obtained in this process, it will be possible to reach maximum efficiency in production and even production of goods and services which are close to perfect. In this way, the quality of production, delivery and after-sales services will be increased. With these developments, it is expected that there will be major changes in the short and medium term in the world economy. For instance, it should not be underestimated that the economies of developed countries can make their own country production of goods and services, which are built in low-cost regions of the world in a period of 4-8 years (Saka, 2016: 20).

2.2. Industry 4.0, Robot Use and Employment

As it is seen in Figure 1, the first industrial revolution began in 1760 with the invention of the steam engine. The steam engine enabled the transition from farming and feudal society to the new manufacturing process. This transition included the use of coal as the main energy as trains were the basic means of transportation. The second industrial revolution began in 1900 with the invention of the internal combustion engine. This allowed to an period of rapid industrialization using oil and electricity to power mass production. The third industrial revolution began in 1960 and was characterized with the implementation of electronics and information technology to automate production. The fourth industrial revolution what is called the "smart factory" (Dutton, 2014) now include computer generated product design and digitalization, internet of things (IoT) and smart knowledge and systems (Prisecaru, 57-62).

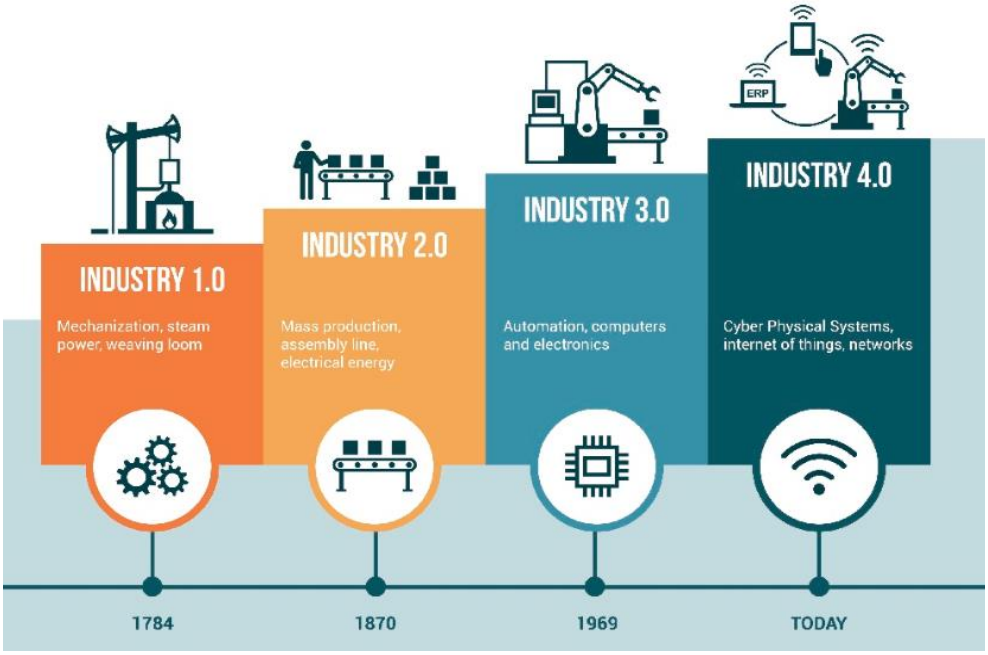

Figure 1: Thorough the Industrial Revolutions

Technology has created new business lines as well as destroying existing works. In the study on the future of employment at Oxford University, it is emphasized that only 0.5% of the workforce in sector in United States was created since 2000 (Fırat and Fırat, 2017: 15). Industry 4.0 (4th Industrial Revolution) and the internet of objects were considered as the most advanced use of internet infrastructure, in recent years, finance, production, health, transportation, agriculture, energy management, automation, etc. are applied in many sectors (Doyduk and Tiftik, 2017: 127).

Robots can perform their tasks more efficiently than normal people in any environment without the need for light, motivation and extra power and many people in the production area become unemployed. However, programming of robots, technical support etc. The employment of trained people will be increased. In the coming period, technology engineering, electronics engineering, software expertise and so on. The employment of people trained in the branches seems likely to increase. Thanks to Industry 4.0, the need for trained human brain has increased. The well-trained,

qualified personnel are needed for the robotic systems to be processed and kept in operation.

The biggest challenge in the implementation of Industry 4.0 will be the lack of qualified labor force. With the knowledge of Industry 4.0, a large workforce with the ability to analyze the data generated in these production technologies, which are highly developed, capable of supervising and managing intelligent machines, will lead to the existence of a large workforce. However, the world still does not have the talented human supply to meet this demand. In addition to firms, countries need to have similar vision. There are important tasks for high schools and universities for qualified personnel training (Saka, 2016: 20). Unemployment is one of the important problems. In order to solve this problem, the public, academic staff, free market players and the government must cooperate. Businesses that are expected to gain importance with Industry 4.0 are as follows (Şener and Belevli, 2017: 25-33), industrial software development, information systems, solutions to the problems of the Internet of objects, industrial data analysis expertise, robot coordinator, programmer and technical service, production technology expertise, smart city planning, product is a manufacturer with designers.

Industry 4.0 is seen as a great opportunity in terms of qualified labor. It is foreseen that you will need technical personnel in the future. In general, it is seen that the industry 4.0 has a structure that requires skilled workforce and encourages the improvement of the employees' qualifications. In recent years, it is observed that the sectors where unqualified labor force will work decrease. Therefore, it is necessary to give importance to the training of qualified labor force (Şişbot, 2016: 25). In Table 2, some occupations can be done by robots.

Table 2: The Role of Some Occupations by Robots

Profession name	The rate made by robots
Credid officer	98
Receptionist	96
Clerkship	94
Reatil sale	92
Chauffeur	89
Security Guard	84
Cooking	81
Bartending	77
Financial consultant	58
Journalist	11
Musicianship	7,4

Source: Dünya.com, 2016

The report titled “The Future of Works” prepared by the World Economic Forum mentioned the following points in relation to its employment (Fırat and Fırat, 2017: 18-22). In future years, destructive changes in business models are expected to have a profound impact on employment. Today, the transformation that affects lots of driving forces within the global industries are expected to have a severe impact on employment in a wide range, from creating important jobs to dismissals and from increasing labor productivity to the expansion of skill gaps. In most countries, the most demanded jobs were not available five or ten years ago. This situation shows how fast

the change in this area has been. According to a popular estimate, 65% of children who start primary school today will start working in completely new business types that are not yet available in the coming years.

In this rapidly developing form, to anticipate the skills needs, job content and total impact in employment in the future; For businesses, governments and individuals, it is becoming increasingly important to capture the chances offered by these trends and to ease the unintended consequences. In order to better manage the transformative impact of Industry 4.0 on education, skills and employment, it is expected that this knowledge / knowledge will promote and strengthen cooperation between education providers, educators, governments, employers and workers.

Even if the impact of current business interruptions on business models in the business world is very comprehensive, if all stakeholders are in a concerted effort, it will be possible to adapt quickly to new opportunities, even if they are compelling. Due to the inefficient use of labor and energy, the production of the products produced by traditional methods is expected to lose their competitive advantages. This situation leads to the risk of losing the sales chances of the products produced by traditional methods (Halıcı, 2016: 24).

In the future, it is clear that communication and informatics sectors will come to the forefront clearly. In recent years, all devices manufactured with advanced technology have been transformed into intelligent systems thanks to the use of embedded systems. In the process leading to Cyber Physical Systems, sensors (including nano and micro sensors, etc.), embedded system designs and interfaces providing communication are needed. It is expected that the program / software sector will have a high share of these developments due to the software it will need to communicate with one of the sensors and embedded systems. The software needed for a new and non-hierarchical factory automation will create an important part of the industry 4.0, the software needs that convert millions of raw data into information. The product and process development work that is based on equipment will continue to be done by developed countries, which are already doing this. Besides, it is expected that the production which has shifted to China and Far East with competitive advantage due to low cost will return to America and Europe again. In addition to the developed countries, it is expected to be effective in software in developing countries. As software development does not include a fixed workplace and business hours, it is expected that trained labor force in developing countries will participate in this process (Şişbot, 2016: 25). Turkey could not complete the transition to automation systems. Considering industry in Turkey, the percentage of medium and high level of value added in total value added of the industrial facilities in the technological structure is produced by only 25%. This reduces the competitiveness of Turkey. That's why, Turkey needs to do using high-tech production-oriented restructuring (Şişbot, 2016: 25).

Turkey's first humanoid robot Akınrobotics factory was opened in 2017. Ada GH5 series robots, which are one of the first products of the factory, have been designed to help the product promotion in the shopping centers, as brochure distribution in the fairs, guiding in the bus stations and airports, shopkeepers in the stores, nursing in hospitals and women's housework (Akın, 2017). According to the 2015 report generation robots IFR's market in Turkey it is growing rapidly. According to the report, in 2015, 1705 new robots were integrated into production areas. This number represents a 37% increase over the previous year. With a total number of 7900 robots at the end of 2015. Turkey has reached 17. integration of new robots, it

was ranked 22 in the total number of robots. 35% of the industrial robot in Turkey automotive, metal industry, 23%, 15% chemical and plastics, are used in the remainder of 27% to nearly 30 sectors, including agriculture. The use of robots per employee in Turkey (volume production), while 19 per 10,000 workers is 531 per 10,000 workers in South Korea. The average robot usage per worker in the world is 70 per 10,000 workers (Geturkiyeblog.com, 2018).

2.3. Cittaslow (Slow City) Approach

The Cittaslow stream should be regarded as a continuation of slow food (Nilsson et al., 2011: 373). Slow food, by using local seeds, makes use of traditional cooking techniques to prepare the delicious foods and beverages, and the production and consumption of beverages, food arak beverage culture to be transferred to the next generations (Schneider, 2008: 385). Slow food philosophy; It aims to produce food with the techniques that do not harm the people and the environment by taking advantage of local methods, and to protect the producer and consumer rights. Italians, who have a deep-rooted food and beverage culture, were uncomfortable with the opening of fast food restaurants in Italy, which they saw as contrary to their lifestyles, eating and drinking habits, and protested the opening by throwing dough at the opening of a fast food restaurant (Radstrom, 2011: 92). This protest is considered to be the first reactionary movement of slow food flow, which is a rebellion against uniform feeding and globalization. In this sense, slow food is a social rebellion initiated by the people of Italy against the fast food eating habits which is one of the benefits of globalization.

Paolo Saturnini is the former mayor of Chianti in Italy and a close friend of Carlo Petrini. During a meeting with Petrini, the founder of slow food in 1997, Saturnini shared his thoughts on the implementation of slow food practices in small cities that are aimed at development by preserving their local values. This idea was appreciated and supported by Petrini. This interview allowed the foundations of the Cittaslow stream to be laid. The cities that first adopted and implemented the Cittaslow idea were the municipalities of Chianti, Orvieto, Bra and Positano in Italy. The mayors of these four cities started to implement slow food criteria in their cities in 1999. For this reason, the beginning of Cittaslow Movement is accepted as 1999 (Petrini and Padovani, 2011: 156).

Globalization and business conditions lead to the migration and derogation of small cities. People prefer to live in big cities because education, health, social and economic conditions in small cities are insufficient compared to big cities (Semmens and Freeman, 2012: 353-354).

Turkey has acquainted with Cittaslow Seferihisar Cittaslow in 2009. After then, in 2011, Akyaka, Yenipazar, Gökçeada and Taraklı received the Cittaslow certificates too (Cittaslowturkiye, 2015). In 2012, Yalvaç, Vize and Perşembe joined the Cittaslow network in Turkey. Halfeti in 2013, Şavşat in 2015, Uzundere in 2016, Gerze, Göynük and Eğirdir in 2017 and Mudurnu received the Cittaslow certification in 2018 and the number of members of Turkey Cittaslow Network reached 15 cities. With the date of 30/09/2018 the number of members in Turkey Cittaslow network is 15.

The Cittaslow philosophy aims at sustainable socio-economic local development. In order to be a candidate, the population of the relevant cities should be below the limit of 50.000. Candidates are required to collect 50 points for the Cittaslow score. In order to obtain the Cittaslow certificate, 72 criteria must be fulfilled in 7 main headings. Criteria consist of mandatory and perspective (future commitments) criteria.

The candidate cities can earn 15 points per criterion in the case of the achievement of the perspective criteria. Each country has the right to set additional criteria up to 20% of the criteria for its candidates. Cittaslow network has not been determined an additional criterion for Turkey yet. (Cittaslowturkiye, 2018). A few studies about Industry 4.0 and cittaslow in literature are given in Table 3.

Table 3: Industry 4.0 and Cittaslow Studies in the Literature

Authors	Subject
Lee et all (2015)	A Cyber-Physical Systems Architecture for Industry 4.0-Based Manufacturing Systems
Yazıcı and Düzkaya (2016)	Is Turkey Ready to Industry 4.0?
(Zhong et al. (2017)	Intelligent Manufacturing in the Context of Industry 4.0
Chen (2017)	Integrated and Intelligent Manufacturing: Perspectives and Enablers
Elçi and Vural (2017)	The Teaching Staff is Concentrated in the form of Industry 4.0.
Esen and Türkay (2017)	Big Data Applications in Tourism Industries
Mil and Dirican (2018)	Industry 4.0 Technologies and Their Effects on Tourism
Soylu (2018)	Industry 4.0 and Entrepreneurship
Özkan et al. (2018)	The Effects of the Fourth Industrial Revolution in Turkey
Özüdoğru et al. (2018)	How Industry 4.0 Changes Jobs?
Knox (2005); Pink (2008) Mayer and Knox (2010) Sezgin and Ünüvar (2011) Semmens and Freeman (2012) Üstündağlı et al. (2015)	Sustainable Urbanization and Development
Lowry and Lee (2011)	Slow Tourism
Grzelak Kostulska et al., (2011); Radstrom, (2011); Servon and Pink (2015)	Seem to Concentrate on the Interaction Between Globalization and Localization
Radstrom (2014)	Sustainability of Local and Urban Identity
Hatipoğlu (2015)	Quality of Life and Visitor Experiences.
Pajo and Uğurlu (2015)	The Importance of Slow Food Work
Sarıoğlan and Avcıkurt (2016)	Gastronomy Tourism
Donat and Yavuzçehre (2016)	Development in Turkey
Olcay et al. (2017)	Effects on Native Cuisine and Native People
Pajo (2017)	Cittaslow Cities in Turkey and 50.000 Population Criterion; The Risk of Lose of Calmness in Cittaslow Cities in Turkey
Yalım (2017)	City Branding And Urban Communication On The Axis Of The Slow City (Cittaslow) Movement: A Case Study On The Slow City Of "Vize" In Kırklareli
Akman vd. (2018)	The Satisfaction Level of Local Residents with the Activities of Seferihisar Municipality within the Framework of Cittaslow Criteria
Özmen and Can (2018)	The Urban Conservation Approach of Cittaslow Yalvaç; Cittaslow Movement from a Critical Point of View
Zengin and Genç (2018)	Slow Cities (Citta-Slow) Marketing: Göynük Example
Mil and Dirican (2018)	Industry 4.0 Technologies and Its Effects On Tourism Economics
Topsakal Y. (2018)	Disabled-Friendly Mobile Services in The Context of Smart Tourism: Recommendations for Turkey Tourism

2.4. Some Examples From Turkey

Seferihisar: It is the district of Izmir, that is 45 km away from İzmir. Located on the slope of the Kızıldağlar district to the west and south of the Aegean Sea, and Urla is located in the north. There are Sığacık, Akarca and Ürkmez beaches which have blue flag. The ancient city of Teos is located near the district. Seferihisar became Turkey's first Cittaslow in 2009 (www.seferihisar.bel.tr, 2014).

Akyaka: In the last census due to the population falling below 2000 people in the north of Akyaka which is a neighborhood of Urla, Sakartepe, Gokova Bay in the South and the Kadın azmağı in the east are located. It is located near the ancient city of Idyma. In 2011 he was admitted to the Cittaslow network. Water sports, diving spots, boat tours, Akyaka Beach and Women's Stamp are famous attractions (www.akyaka.bel.tr, 2014).

Yenipazar: Yenipazar is the district of Aydın. The distance to the city center is 40 km. It was founded on the slope of Mount Madran. It is famous for Pide and Yörük Ali Efe Museum. Near the town there is the ancient city of Orthosia. In 2011 he was admitted to the Cittaslow network (www.yenipazar.gov.tr, 2014).

Gökçeada: It is a district of Çanakkale. Gökçeada, located in the northern part of the Aegean Sea, has a coastline of 91 km. Gökçeada is the first island in Cittaslow with 16 nautical miles in length and 5 nautical miles in length. The beaches, surfing and diving center are famous for the production of organic grapes, olives and honey (Yurtseven, 2007, s. 39-44). In 2011 he was admitted to the Cittaslow network.

Taraklı: It is 74 km to the city center of Taraklı which is the district of Sakarya. Since it is located on the historical Silk Road, it is known to be one of the important accommodation points for caravans in ancient times. It was renowned for its boxwood comb, wooden spoon (Bilgi, 2013, s. 56) and three-storey wooden mansions from the time of the Ottoman Empire (www.tarakli.bel.tr, 2014). Awarded by 'Accessible Tourism Destinasyon which is the theme of 2013 European Destinations of Excellence (EDEN). In 2011 it was admitted to the Cittaslow network.

Mudurnu: Mudurnu is a district of Bolu. It is located 52 km from the city center. The traces of the first settlement in Mudurnu, which is at the junction of important commercial roads, point to the year 5000 BC. Phrygians, Lydians, Persians, Romans, Byzantines, Seljuks, Ottomans lived in the region. The city has been able to preserve its historical texture and identity (http://mudurnu.bel.tr, 2018). Turkey has been included in the Cittaslow network in 2018.

2.5. Best examples of Slow Cities from the World

Italy-Altomonte: Located in the south of Italy. In the 2014 census, 4.576 people lived in the town. The height of the town is 490 meters above sea level and 65.29 km2. Important events in the town; the festival is a great festival of bread and theater, a rock festival, a dance festival, a Mediterranean festival, a visual arts presentation, a jazz and wine festival, a traditional night of food and white dishes. Important historical works of the town; Feodal Castle, Paola St Francis Monastery, Constantine Belluscio, Santa Maria Della Teselli Church, Norman Tower, Dominican Monastery, St James Apostle Church, Scaramuzza Palace, Cappola Palace, Jakoben and Pancaro (Comune di Altomonte, 2014).

Poland-Murowana-Goslina, Wielkopolska: Located in the central part of Poland. The town with a population of 10,296 has a surface area of 6,43 km2 and a height of 75 meters above sea level. The important historical monuments in the town are: St. Murowana Church of St. James the Apostle in Goslina, the Church of St. Magdalene in Goslina. Nature reserve and training area for students around Zielonka Forest and Lake Zielonka are located near the town. Near the town 190 km. Poznan- Owinska-Dabrowka Koscielna - Wagrowiec - Tarnowo - Lekno - Dabrowka Koscielna - Owinska - Poznan cycling route (Murowana-Goslina, 2014).

2.6. Cittaslow and Employment

For a city to be a member of the Cittaslow network; increasing brand recognition means becoming a preferred destination for visitors. The visitor increases are expected and desirable for the cities of Cittaslow. The increase in visitors leads to an increase in local product sales and, naturally, local production. Increased production due to demand increase leads to increased employment in the region. Each of our Cittaslow cities are important destinations with different characteristics. For example, Seferihisar is a coastal city with blue flag beaches, and comes to the forefront with tangerine production. Spores, olive, honey, olive oil, olive oil soap comes to the fore. Taraklı; The Ottomans are famous for the construction of three-storey houses, uhut dessert, wooden spoons and combs as handicrafts. Yenipazar; Yörük Ali Efe Museum is famous for its pita varieties. Akyaka; blue flag beach, houses with unique architecture, famous for the women's sting. The charms of our cities in Cittaslow are restoration of historical artifacts, markets where local products are sold, sales points. Thanks to the studies are increasing. Our Cittaslow cities welcome more visitors every day. After Cittaslow, the increase in the number of visitors increases. This increases the local production and thus increases the employment.

3. Methodology

The aim of the study is to emphasize that, local production, sales and other similar activitities can create employment opportunities for women and unskilled labor in cittaslow cities. Production in cittaslow cities is not suitable for production with robot and machinery according to cittaslow criteria. It is therefore suitable for the employment of unskilled labor and female employees. The qualitative research method was preferred in this study because of the fact that the selected subject could not be considered independently from the human and society and the research universe and the sample were 14 cittaslow cities. The researcher tries to find the information stored in this data based on the data collected from the research area (Özdemir, 2010: 328). According to Yıldırım and Şimşek (2005), qualitative data collection methods such as interview, observation, document analysis etc. can be used in qualitative researches. The question form of interview includes structured, unstructured or semi-structured questions and participant observation (Türnüklü, 2001: 8). The researcher attempts to identify, define and reach the unknown, and should collect the information that will be answered. The systematic way of doing research means forming the research design, collecting, interpreting, and reaching the results (Yıldırım, 1999: 7).

All slow cities in Turkey constitute the population of the study. The aim of this study is to reach the whole population. At the time of the study, Mudurnu was not yet a member of cittaslow. That’s why only Mudurnu had to be kept out of consideration. Turkey's cittaslow towns are Seferihisar, Akyaka, Yenipazar, Gökçeada, Taraklı, Yalvaç, Vize, Perşembe, Halfeti, Savsat, Uzundere, Gerze, Göynük and Eğirdir.

The whole universe of the research was reached. Data were obtained from 14 cittaslow centers forming the population. Interviews were held with the authorized persons in the municipalities in the centers in June 2018. In these interviews, open-ended questions and semi-structured questions were asked. Because it was meant to be an in-depth interview. Open-ended questions on relevant topics are obtained through in-depth interviewing only after obtaining in-depth information about a subject as a result of the question of semi-structured questions (Yıldırım & Şimşek, 2005).

4. Findings

The interviews conducted for this study were done by telephone due to the time and financial resource problem. Interviews were not recorded due to the limited number of questions posed during the interview. The interviews were made by the cittaslow representatives who are the members of Cittaslow Network of Turkey and asked the impact of employment in the cities and provinces. The results obtained from the interviews are included in Table 4. The expressions "+" means increase, "-" means decrease, and "0" expresses there is no change.

Table 4: The Effect of Cittaslow Activities on Employment

No	Cittaslow name	Exhibition/ Fairgrounds	Local Food Featured Restaurant	Local Seed Clearing Event	Local Product Market	The Effect of Cittaslow on Local Product Sales	The Contribution of Cittaslow to Employment
1	Seferihisar	+	+	+	+	+	+
2	Akyaka	-	-	-	+	0	0
3	Yenipazar	+	+	+	+	+	+
4	Gökçeada	+	+	-	+	0	0
5	Taraklı	+	+	-	+	+	+
6	Yalvaç	+	+	-	+	+	+
7	Vize	+	+	+	+	+	+
8	Perşembe	+	+	-	+	+	+
9	Halfeti	+	+	+	+	+	0
10	Şavşat	+	+	-	+	+	+
11	Uzundere	+	+	-	+	+	+
12	Gerze	+	+	+	+	+	+
13	Göynük	+	+	-	+	+	+
14	Eğirdir	+	+	+	+	+	+

According to the results obtained from interviews with participants, Table 4 shows that Seferihisar, Gökçeada, Uzundere, Yenipazar, Gerze, Taraklı, Yalvac, Vize, Perşembe, Egirdir, Şavşat, Gökçeada, Halfeti, Göynük districts are held in one of the fair / exhibition or fair events. These activities increase the number of visitors to the relevant cities. Seferihisar, Gökçeada, Uzundere, Yenipazar, Taraklı, Yalvaç, Vize, Perşembe, Eğirdir, Şavşat, Halfeti and Göynük districts where local food and beverages are served. Visitors to the city show interest in local delicacies. The supply and consumption of local foods and beverages increase the demand for products produced by local seeds. This situation is reflected on employment positively. The women and unqualified workforce are usually employed in the fields of handicrafts, agriculture and animal husbandry and they produce and sale honey, olive oil, hand-made tarhana soup, tomato, corn, mandarin and soap etc.

In the districts of Seferihisar, Yenipazar, Gerze, Vize, Eğirdir and Halfeti, a local seed exchange festival is organized. This activity causes an increase in the number of visitors to the city. Network members are established in all of Turkey Cittaslow local product markets. Local product market provides an increase in the number of visitors, product sales and thus local production. In Seferihisar, Uzundere, Yenipazar, Gerze, Taraklı, Yalvaç, Vize, Perşembe, Eğirdir, Şavşat, Halfeti and in Göynük local product sales increased after Cittaslow declaration. Akyaka and Gökçeada were not affected much by local product sales. Because of the fact that these are already well-known and preferred destinations and touristic places, it is stated that there has been a great interest to the region and local products before Cittaslow current and this interest continued after. There is a positive increase in employment after Cittaslow applications in Seferihisar, Gökçeada, Uzundere, Yenipazar, Gerze, Taraklı, Yalvaç, Vize, Perşembe, Eğirdir, Şavşat and Göynük districts. However, there is no increase in employment in the Akyaka, Gökçeada and Halfeti districts. This is due to the fact that these three districts should already be tourist destinations. There is a regular level of employment. There is a busy tourist stream. Therefore, the effect of cittaslow on employment in these three centers is not measurable.

5. Conclusion and Suggestions

Industry 4.0 is a revolution developed by countries such as Germany and the United States against the low-cost production advantage of the Far East due to cheap labor. Countries targeting the highest ranking in the world economy must adapt to Industry 4.0. In the transition to Industry 4.0, the remaining countries will lose their competitive advantage. In the future production will be carried out in smart factories. Production in intelligent factories will be made possible by robots who adapt to the learning environment. Robots of people; nonconformity to work environment, dislike of discretion, distraction, late work, loss, steal, harm to work place, provoke other employees against work place, stress and so on. The company saves businesses from production losses and costs. With robots, production costs will decrease and productivity and efficiency will be increased. Thanks to the production with robots, production losses caused by people and work accidents are reduced. Robot use not only in production but also in logistics, sales, marketing, medicine etc. Areas are used instead of people. Increasing the use of robots will cause the unemployed people to be unemployed in the first place. Industry 4.0 trained workforce, software, technical service etc. will increase employment in areas. Especially in the case of computer software, the countries in the future will be advantageous.

Cittaslow in the period following the increase in employment was observed in the majority of Cittaslow in Turkey. This is due to the fulfillment of the Cittaslow criteria and

the organization of events. The fulfillment of the Cittaslow criteria made the city a more decent and livable place, and the events organized attracted the attention of the people and increased the number of visitors to the city. The increase in the number of visitors increased the demand for local products. This has led to an increase in the number of local production, local product sales points, restaurants offering local products, or increased number of beds in the accommodation facilities. Cittaslow positively affects the image of the cities and increases its awareness and thus increases the number of visitors. Visits to the cities of Cittaslow are mostly seen as school trips, individual visitors, researchers, touristic tours. Cittaslow cities have original structures, restored historical monuments, local products, hospitable people, unspoiled nature and so on. The reason is the focus of attention and happiness for the visitors. Visitors to the cities of Cittaslow also have positive returns and new visitors. In the light of all these developments, the mobility experienced in Cittaslow leads to an increase in employment.

Regarding the transition to Industry 4.0 measures can be taken. Accordingly, the country should take measures to open the appropriate departments in universities for the young population to receive education in accordance with industry 4.0. Countries should encourage young people to read and improve themselves. The budget allocated to education of developing countries should be increased. In order to prepare for and adapt to Industry 4.0, it is necessary for the country administration, public institutions, enterprises, entrepreneurs, capital owners, fund managers, NGOs, people to act together. Businesses should allocate more from R & D to their budgets and countries should take measures to encourage R & D. Smart factories works will be the places of production of smart machines. First, unqualified workers will lose their jobs. It is possible for the workers who are not qualified against it to be educated in the required fields and to be evaluated on technical services. In the coming years, it is possible to raise awareness about the education of young people in the education age, computer software and technical works.

The measures to be taken to protect the cities of Cittaslow and to increase employment in these areas can be summarized as follows: By the Central Government; technical support can be provided for member cities to fulfill the Cittaslow criteria as soon as possible. Member cities can be protected by law and additional resources can be allocated to meet the criteria. In order to increase the number of visitors to the cities of Cittaslow; agreements can be organized with tour companies, guides can be trained in the region, sales points can be kept under control to avoid deceiving the visitors, fair / exhibition / fair / seed exchange / local product sales points can be increased and advertised. Local product market can be expanded. Capacity of accommodation facilities can be increased. Suitable and safe parking spaces can be created for nursing areas and incoming visitors. The number of visitors to Cittaslow can be increased if necessary precautions are taken. This increase will increase demand for local products. Increased demand will create new production and employment growth. Unemployed workers who are expected to be unemployed due to Industry 4.0 can be assessed in the areas of service, production and sales in the cities of Cittaslow.

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