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A FIELD STUDY OF CHALLENGES FACED BY AGING WORKFORCE

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ABSTRACT

Over the next years and decades, both aging of population and workforce will be seen in developing and developed countries. Especially improvements in health care services and social services, increasing of life expectancy and decreasing the rates of infant mortality are the main reasons of population and workforce aging. Together with these developments, both governments and businesses will face challenges which are needed to overcome in the years ahead. In this study after a literature review on aging workforce, the survey, which was done in Yalova city, is studied in order to understand the approach of aging workforce. The survey was focused on the aging workforce's challenges such as new technologies and in improvement of the skills. Although there is no much difference in the approaches between young and aging workers, the lack of conscious toward technological developments and improvements of skills for state-of-the-art developments of aging workforce is striking and needs to be more examined.

Key Words: *Aging Population, Aging Workforce, New Technologies, Skills*

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INTRODUCTION

During industrial society, industrialized countries were producing for all over the world. The manufacturers of the countries were recruiting their workers from rural areas since they didn't need much skilled and experienced workforce. With Taylorism, the production phases were divided into the smallest process in order to use cheap and unskilled labor, produce much more than before, decrease the cost of production and finally be able to compete with rivals. Also socio and demographic developments such as high level young population, the supply of cheap labor from suburbs and industrialization were supporting the era of industrial society. Especially, World War I and II and diseases and high level infant mortality rates decreased the young population of the industrialized world. After 1940s countries' governments encouraged their people to have babies in order to meet the worker requirements of both private and state companies and increase consumption of goods and services. With welfare state policies, states increased employment opportunities and spread health and social services for all citizens. The services of welfare state resulted in increasing life expectancy and decreasing infant mortality rates as well as encouragement of having a baby which are called baby boomers raised the population and aging of workforce. The emerging new technologies and globalization, aging of workforce and increasing competition changed the nature of industries and jobs and the approaches of governments and businesses toward workers.

Aging of workforce requires two sided approach. On the one side, there are macro level issues such as social security, employment, unemployment, social services and policies which are regulated by governments. On the other side, there are micro level issues such as retention, improvement of skills in accordance with new knowledge and technology and changing needs of aging workforce in workplace. This study focuses on much more micro level issues than macro level. In this work, general definitions of aging workforce as well as demographic challenges in the world are given in the first part. Then, some developments that aging workforce is faced are explained. In the last part of study, the survey is investigated and evaluated with the support of statistical tables.

1- Aging Workforce

One of the most significant future trends societies facing in general and employers in particular is the increasing life expectancy. As a result of increases in life expectancy, declines in birthrates, and trends toward longer and healthier lives, world population is getting older (Toossi, 2009, 49). The ramifications of this trend will affect government programs, businesses, economy, cultures and individual families in unparalleled ways. In the workplace, the impact of the aging population will be both powerful and positive. Companies looking to succeed in the future will learn how to harness this power and the positive benefits of employing experienced, skilled, loyal older workers (Hankin, 2005: 10).

Populations age as the result of either an increase in their life expectancies or a decrease in their fertility rates. However, the aging of the population will have a significant impact on the workforce and its growth. The age of the workforce and that of the population can be measured by various ways. The median

age, an index that summarizes age distributions, is one way by which the ages of both the population and the workforce can be measured. The other measure is the relative shares of younger workers (16 to 24 years) and older workers (55 years and older) in the workforce. Both measures indicate that the workforce will be aging quite rapidly from 2006 to 2016 in developed countries (Toossi, 2007, 48).

1.1. The Concept and Definition of Aging Workforce

Aging is not only related to individual but also related to occupations. In this mean, a 30 year-old sportsman may already be considered as too old; as trainer he would be considered as very young and the young sportsman may become a successful trainer. This illustrates that the performance patterns of individuals change throughout the entire course of their working life according to their current jobs (Krenn, 2001: 6). In this context, aging is not only defined with ages (years) but also with professions that workers are already doing.

The “aging workforce” have generally defined as working individuals who are 40 years of age or older. It is recently argued that the definition of “aging” should be expanded to include two components: chronology and knowledge currency. Therefore, employees are encouraged to maintain and grow their level of knowledge and expertise and support the workplace environment by employers (Bockman, 2010, 129). Throughout most of the 20th century, the typical job required physical strength and practical knowledge. Once a person’s physical abilities faded, the worker was being displaced. However, the 21st century professions demand more practical knowledge than physical abilities. In today’s world, a growing number of post modern occupations require the worker to have the sophisticated technical knowledge often associated with state-of-the-art knowledge and practices. The exponential advancements in technology, which now define the modern world, are creating new realities and facilitating work processes for the workforce and businesses. In this context, even though chronological age is still an important subject in the studies, the lack of state-of-the-art in knowledge is also becoming a major determinant of who should be considered to be “aging” (Bockman, 2010, 130).

1.2. The Aging Workforce and Demographic Challenges in Countries

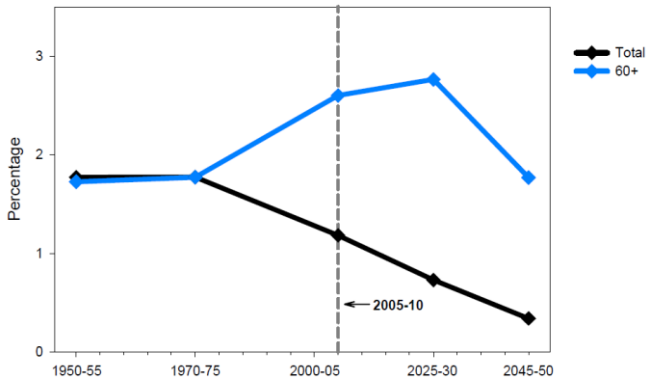
Demographic changes and globalization are among the most important challenges of today and the next future. Especially, the world is facing some demographic difficulties at the crossroads of history of human being. The aging of the population (or aging society) impacts significantly on the workforce, where the number of aging workers could in the near future rapidly outnumber that of younger workers. The younger and middle-aged populations of developed societies decrease, whereas the older population increases in size (Leibold, 2006, 7). In this sense, for the first time ever, individuals over the age of 55 will represent progressively larger proportions of the global workforce in the industrialized world. Until the Industrial Revolution, population growth was the only determinant of economic growth. The increasing number of population was indicating new creative forces and expanding consumer markets. In the early decades of the 21st century, economic

growth is influenced by a number of global forces, especially the revolution in information communications technologies, globalization and networking, the increasing demand for high skilled labor (white and gold collar workers) and the aging of the world's population.

The phenomenon of aging of the industrialized world is driven by three demographic realities and three attitudinal shifts in society. These three demographic realities are: the baby boom generation (born between 1946 and 1964) reaching retirement age; increasing human longevity; and declining birthrates. The changing demographic structure triggers these three attitudinal shifts in societies: the attitudes of workers towards work, the attitudes of employers towards age and the attitudes of people towards life in general (Leibold, 2006, 36). One of the main results of these attitudinal changes is a skills shortage entailing a global 'war for talents' in a business world primarily characterized by a concurrent cost, productivity, and quality pressures (Leibold, 2006, 7). These challenges are being faced not only developed countries but also developing ones. However, the challenges of developed countries in aging workforce is becoming much more than developing world.

By 2030, 55 countries are expected to see their 65 and older populations at least 20 percent of their total (Transgenerational, 2011: 3). In 2005-2010, the growth rate of the older population, at 2.6 % annually, is more than twice that of the total population (1.2 %). Over the mid-term future, the difference between those two growth rates is expected to increase as the baby boom generation reaches age 60 in developed parts of the world. By 2025-2030, projections indicate that the population aged 60 or over will be growing about 4 times as rapidly as the total population, at an annual growth rate of 2.8 % compared to 0.7 % for the total population (figure 1). Although the growth rate of the population aged 60 or over is expected to decline to 1.8 % in 2045-2050, it will still be more than 5 times the growth rate of the total population at that time (0.3 per cent) (United Nations, 2009: 11).

Figure 1: Average annual growth rate of total population and population aged 60 or over: world, 1950-2050



Source: United Nations, **World Population Ageing 2009,** United Nations Department of Economic and Social Affairs/Population Division, 2009, p. 11

Many countries in the world, including Germany, Japan, the U.S. and even China, have been facing a crisis during the first decade of the 21st century and beyond. The aging of their populations due to declining birthrates, longer life-spans of people, the retirement wave of baby boomers are reaching age 60 from 2006

onward and the demands of the global economy for creative human resources for innovation is becoming an important issue to cope up with global competition.

Within the next decade, the workforce within the United States will experience a major demographic shift. By the year 2010, the proportion of employees ages 55 and older will increase from 12.9% to 16.9%. The share of the labor force aged 55 and older is rising rapidly, a direct result of increases in life expectancies and decreases in fertility rates of the U.S. population. By 2020, the share of the labor force held by those 55 years and older is projected to be nearly 24 % (Toossi, 2006, 21). In the USA, the 55- and-older age group, which made up 13 % of the labor force in 2000, is projected to increase to 20 % by 2020. It is anticipated that, by 2050, the group will make up 19 percent of the labor force (Toossi, 2002, 15).

The median age of the labor force was at a peak level in 1962 at 40.5 years. As the baby-boom generation entered the labor force, the median age of the labor force decreased steadily until 1980; since then, as the baby boomers have aged, so has the labor force. With both the population and the labor force aging, the median age of the labor force in 2012 is projected to exceed the level reached in 1962. The following Table shows median ages for the civilian non-institutional population and labor force aged 16 years and older.

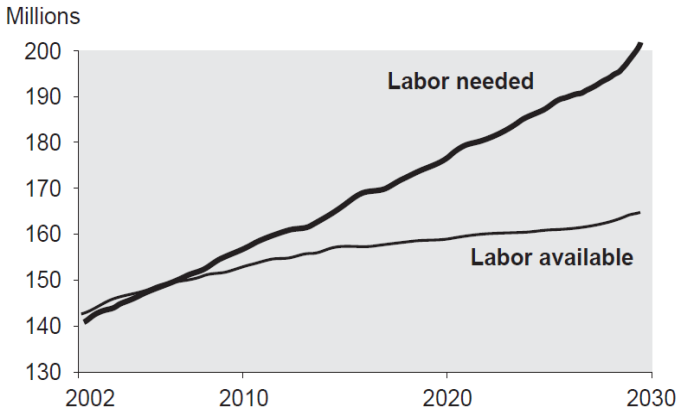
Table 1: The Increase of Median Ages in the USA

	1992	2002	2012
Population	40.1	40.3	45.3
Labor force	36.6	40.0	41.4
Difference	3.5	.3	3.9

Source: Toossi, Mitra, "Labor force projections to 2012: the graying of the U.S. workforce", Labor Force Projections, Employment outlook: 2002–12, **Monthly Labor Review** February 2004.

There are a variety of factors that account for this demographic shift in the age of workers. First, because of a shortage of younger aged workers, the average mean age of workers will shift upward. In the next 15 to 20 years, employers will be hiring one out of every four workers older than the age of 55. This is in contrast to the one out of every five workers hired presently who are older than the age of 55 (Ford, 2005, 142).

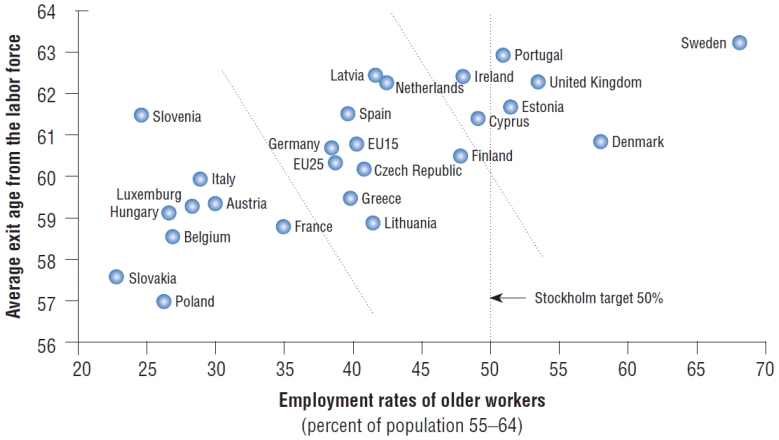
Figure 2: How labor demand will outstrip supply up to 2030



Source: BLS, Bureau of labor Statistics, Employment Policy Foundation analysis and projections of Census/BLS and BEA data, American Workplace Report 2002

European Union's projections offer an insight into the possible future population development in individual member states, taking into account socio-economic and cultural differences among them. The main finding of the projection is that without the assumed net migration inflow, Europe's population would start shrinking from 2012 onwards (European Commission, 2009, p. 70). Especially, many European Countries are facing some challenges related to the aging of their populations. While countries worldwide face this situation, generous state pensions and steadily declining birthrates have further exacerbated this issue in many European nations (Lesser, 2005, 1). Present demographic trends show that in the next few decades the older population will substantially grow, partially reinforced by the ageing of the generation of baby-boomers, and while at the same time the number of young people and adults are expected to fall in European Countries. Over the next 30 years people aged over 60 will grow by 50 % and the number of adults between 20 and 59 will fall by 6%. In particular, the numbers of those aged 20-29 will fall by 9 million. These figures indicate a constant decrease of the working population and a continuous ageing of the workforce (Krenn, 2001: 3). European Union (EU) member countries set two goals to encourage member countries to focus on challenges from the aging workforce. Following Figure 3 shows that achieving a 50 % employment rate for workers 55 to 64 years and raising the exit ages of older workers by five years for each EU country by 2010.

Figure 3: Status of EU countries regarding progress toward targets for aging workers.



Source: Commission of the European Communities, "Increasing employment of older workers and delaying the exit from the labor market," Communication from the Commission to the Council, the European Parliament, The European Economic and Social Committee and the Committee of the Regions, March 3 2004, p. 3.

The seriousness of the aging workforce challenge is reflected in the fact by 2010. The number of 35 to 44 year olds will not grow but significantly decline – by 19 % in the U.S., 27 % in Germany, 19 % in the U.K., 9 % in Italy, and respectively 10 % and 8 % in Japan and China since demographic reasons. Conversely, the number of aging workers will increase substantially. As a result of these dramatic demographic changes, global competition for skilled workers and creative talent is gradually increasing (Leibold, 2006, 23). Many countries and companies are understood the changing value of their aging workers, and how to retain, nurture and rejuvenate the aging workforce in a rapidly changing world and sectors and workplaces.

2. Rapidly Changing Working Life and the Aging Workforce

Aging population and the increasing complexity of knowledge needed in technologically advanced societies are two major forces that are shaping the workplace (Delong, 2004: 12). As the world is increasingly changing into an information-dependent society, knowledge and technology has rapidly been becoming common elements in the workplace. More and more occupations are becoming information-based, opening new employment opportunities for many people, including the aging workforce. Workplace computing has expanded together with a variety of devices, applications and occupations in which intensive information technologies are used. These workplace computing and internet users, or information workers are active participants in the process of business information flow. Specific occupations range from air traffic controllers and financial analysts to front-line workers such as factory employees, field service representatives, rental car agents and delivery people who use wireless reporting and tracking devices (Leibold, 2006, 187). While technology is rapidly driving the change in every area, current working workforce is updating their skills as well. However, while new graduated workforce is having state of the art knowledge and skills, the aging workforce does not or can not improve the knowledge and skills in the rapidly changing world.

Carnoy mentions that new technology probably had little to do with the decline in the labor force participation of older workers. Most of the drop in the participation rates of older male workers in the United States, the United Kingdom, Sweden, Germany, and Japan took place in the early 1970s, before firms began using computers (Carnoy, 2002: 30). However, the issue of the new information technology that makes older workers obsolete is an important problem of today. Because information and communication technologies have been becoming an important and integral part of all industries, workers both young and older, in general, should increase and update their ICTs skills and knowledge.

Also, managing the knowledge of aging workforce is a major challenge, particularly to companies in some industries that requires state of the art knowledge and skills. Whenever an expert or manager retires or takes up a new position, there is the risk of losing his/her knowledge regarding what it really needs to fill his/her position. Apart from the risk of losing expert knowledge about administrative or technical issues, there is also the risk of losing distinct personal social networks, which are necessary for gathering information or for synchronizing with colleagues (Haarmann, 2009, 27). Besides, the aging workforce do not get access to appropriate training, which is reserved for younger workers, who are on average, better educated, especially with respect to the application of information and communication technologies. Consequently, older workers have fewer opportunities and are less willing to acquire new skills. However, workers, who do not upgrade their skills, reduce their ability to match the growing demands for handling new technologies, flexible working conditions and dealing with customers (Krenn, 2001: 4). That is, the aging workers who have fewer opportunities and less willing should keep up with new technologies and otherwise they can't find a place in job market.

One of the challenges of aging workforce is their health and the other one is education. The needs of workforce cannot only be met in workplaces, but also in the fields of education and health. Many of today industrial processes have been becoming much complex and their operations require employees to be in good physical, mental condition and more knowledgeable and skilled than they were before. In addition, the requirement of safe and efficient operation places high demands on memory, vision, range of motion, strength, decision making and reaction capabilities (Haight, 2003, 20). In this sense, by understanding the needs of aging workforce such as health and training, consideration can be given to tasks, work-hours, workspace design, performance expectations and the level of their knowledge and skills rather than the age level of workers.

3. The Importance of the Experience and the Aging Workforce at Workplace

The aging workforce is an emerging issue both for governments and businesses (Piktialis, 2007, 81). The issue of aging workforce has more importance in terms of needed experiences in organizations rather than taking risks (Leibold, 2006, 187). The challenges of aging workforce are faced not only in education and health issues, but also organizational that is met by employers. Employers must be aware of the issues that are faced by older workers and how to accommodate them in the workplace. They should recognize older workers' importance in the workforce and workplace and their changing roles in industry (McMahan, 2006, 54). Today's organizations, which use high technology and skills, need much more experienced workforce and therefore

should develop or amend policies in order to retain the aging employees. In developed countries, significant numbers of the older age groups in the labor force will be retiring, resulting in a loss of much-needed skills and significant amounts of institutional knowledge (Toossi, 2006, 21). In this context, organizations might adopt a targeted approach, which must be in different dimensions, for training and retaining of experienced workers who are getting older. The first is to identify the 55-plus employees who have the skills and knowledge that the organization needs. The second dimension is to identify the 55-plus professionals with critical skills who would like to continue working. The third dimension is to tailor training products and techniques to allow for the learning styles and preferences of older employees (Koc, 2009: 335). Lesser and others recommend that companies consider the following six strategies for addressing the challenges of an aging workforce (Lesser, 2005: 4):

- Redirect recruiting and sourcing efforts to include mature workers
- Retain valued employees through developing alternative work arrangements
- Preserve critical knowledge before it walks out the door
- Provide opportunities for workers to continually update their skills
- Facilitate the coexistence of multiple generations in the workforce
- Help ensure that mature workers are able to use technology effectively in the workplace.

Many companies are finding it difficult to hire new employees within certain disciplines. Even if they can find qualified candidates, the firms must still invest in training to further increase their productivity (Lesser, 2005: 1). In this sense, companies look for solutions to retain older who are experienced and decrease costs with regard to recruitment and training. By giving importance to the aging workforce in workplaces, both employers will reap the benefits of the experienced workers who getting older and their motivation that makes them more productive will be increased. Therefore, it is important to realize that this is not a choice for organizations, but an absolute necessity for survival and competition (Leibold, 2006, 8). In a survey, employers who scored high that an increase in the average age of their employees will result in more know-how and experience, higher productivity, and fewer conflicts. It would appear that experience has a strong influence on the level of productivity (Remery, 2003, 31). Also job satisfaction of aging workforce is another issue. According to Hedge's investigation, there is a small positive correlation between chronological age and job satisfaction. The relation of age and job satisfaction for individuals in their early 30s and beyond is likely to be stronger than it is for those in their 20s. In this sense, as employees become older, their expectations about what a job should offer are reduced (Hedge, 2006, 64). Also, high level job satisfaction of the aging workforce brings about more positive attitude towards the organization and a strong work ethics (Koc, 2009: 336).

4. A Survey on the Aging Workforce

4.1. The Aim and Scope of the Survey

With the survey, the employees, who were selected randomly and are working in Yalova, are investigated with regard to the difficulties they face in workplace and out of workplace in part. The survey was conducted in Yalova and focused on employees who are above 25 years old. 227 surveys were evaluated of the 240 participants who joined to the survey. Each survey was done one on one and face to face with the participant. All the answers were compiled and evaluated on SPSS 17 statistic program.

4.2. The Evaluation of the Findings

Table 2: The Age Level of the Participants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	25-30	53	23,3	23,5	23,5
	31-35	35	15,4	15,5	38,9
	36-40	28	12,3	12,4	51,3
	41-45	22	9,7	9,7	61,1
	46-50	29	12,8	12,8	73,9
	51-55	25	11,0	11,1	85,0
	56-60	20	8,8	8,8	93,8
	61-more	14	6,2	6,2	100,0
	Total	226	99,6	100,0	
Missing	System	1	,4		
Total		227	100,0		

Number of participants who are between 25-30 years old is 53 which constitutes 23,3 % of total participant amount which is 226. Subsequent age that between 31-35 years old has 35 participants which constitutes 15,4 % of all. The participants who between 36-40 years old constitutes 12,3 % with 28 participants of all. Early middle age group which people are between 41-45 years old has a portion of 9,7 % with 22 people in all. And other middle aged people who are between 46-50 years old constitute 12,8 % of all with 29 participants. And while 51-55 years old people make up 11% of all with 25 people and 56-60 years old has 20 people which corresponds to 8,8 % of all and the number of participants who are older than 61 years is 14 which correspond to 6,2 % of all. In the study, people who are between 25-45 years old who constitute 61,1 % of all. And participants who are in 25-30 age interval which is called early years of employment or working and constitute approximately one fourth of total.

Table 3: The Education Level of Participants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary	52	22,9	23,4	23,4
	Secondary	45	19,8	20,3	43,7
	High School	65	28,6	29,3	73,0
	Vocational High School	18	7,9	8,1	81,1
	University	36	15,9	16,2	97,3
	Master	6	2,6	2,7	100,0
	Total	222	97,8	100,0	
Missing	System	5	2,2		
Total		227	100,0		

The number of participants who have primary school degree is 52 that is 22,9 % of all of 227. Participants who are secondary school degree have a portion of 19,8 % with 45 people. Most crowded group that the participants whose amount is 65 people that constitute 28,6 % with high school degree. Vocational high school degree have a portion of 7,9 % with 18 people. And university degree which is called as an advantage for work life is 15,9% percent of all with 36 participant. Master degree has tiny amount with only 6 participant which constitute 2,6 % of all. While 222 participants share their education information, 5 people did not inform. It corresponds 2,2 % of all of 227 people.

Table 4: Descriptive Statistics

	N	Min.	Max.	Mean	Std. Dev.
Aging brings about both physical and mental deficiencies	225	1,00	5,00	2,3022	1,29465
Working power and energy decrease with aging	227	1,00	5,00	1,9427	1,10960
Age is a sign of knowledge and experience	222	1,00	5,00	2,0766	1,23248
Technological changes make me feel more lack	222	1,00	5,00	2,9234	1,35489
I improve my skills related to my job	218	1,00	5,00	1,9450	1,05459

Note: A five-point Likert scale was used: (1) strongly agree to (5) strongly disagree with the statement

The mean levels of descriptive statistics are shown in the **Table 4** and some of the meaningful questions and their values were taken to the table. The mean of explanation with regard to physical and mental deficiencies is near to the “agree” which means aging decreases physical and mental power. And also the mean of the other explanation related to working energy is much nearer to the “strongly agree” and this

supports first explanation's mean. To those who approve "age is a sign of knowledge and experience", the mean of descriptive statistics pretty near to the "agree". It is asked if technological change makes them feel more lack, the mean of the responses (2,9234) indicate that majority of them feel lacks with new technologies by saying "agree". It is tried to understand whether employees improve their knowledge and skills in order to reach state-of-the-art knowledge and information. The mean of the answers is striking and pretty near to the "strongly agree" which means the respondents do improve their skills as much as they can.

Table 5: Age and Working Energy

		Working energy decrease with aging					
		Strongly Agree	Agree	No Idea	Not Agree	Strongly Disagree	Total
Age	25-30	41,5%	47,2%	1,9%	7,5%	1,9%	100,0%
	31-35	48,6%	37,1%		14,3%		100,0%
	36-40	32,1%	64,3%		3,6%		100,0%
	41-45	31,8%	36,4%	4,5%	18,2%	9,1%	100,0%
	46-50	55,2%	27,6%		13,8%	3,4%	100,0%
	51-55	48,0%	36,0%	4,0%	12,0%		100,0%
	56-60	15,0%	55,0%	5,0%	20,0%	5,0%	100,0%
	61-above	57,1%	14,3%			28,6%	100,0%
	Total	41,6%	41,6%	1,8%	11,1%	4,0%	100,0%

Participants who are between 25-30 years old who are almost working for few years agree that working power and energy decrease with aging by 88,7%. While only 7,5 % of them do not agree and 1,9% strongly disagree this idea and 1,9% have no idea. 85,7 % of participants who are between 31-35 years old strongly agree and agree, and 14,3% of them do not agree. None of them have preferred stating no idea or strongly disagree. Participants who are between 36-40 years old are dominantly remarked that aging adversely affect working power and energy, by 96,4 %. And only 3,6 % of them do not agree this issue. 68,2 % of the participants thinks that aging affects working power and energy. While 4,5 % of participants have no idea, 27,3% of participants thinks that working power and energy is not related with aging.

Majority of 46-50 years old participants which constitute 82,8 % of them, accept the effect of aging on energy and working power. In this age interval while there is no any participant who have no idea, 17,2 % of participants do not agree and completely do not agree on the issue. Participants who are between 51-55 years old are dominantly remarked that aging affect on working power and energy by 84% which is sum of strongly agree and agree responses they gave. While there is no one who completely disagree, but 12% of them disagree this issue. And 4% of them have no idea of aging with energy and working power. For those who are 56-60 years old, a considerable amount which is 20% disagree and 5% completely disagree that working power and energy is affected by aging. On the other hand 55% and 15% of them agree and completely agree respectively. 5% of them have no idea about this issue. 71,4 % of participants who are more than 61 years old

completely agree and agree the idea. But there is a strong deviation for participants who are more than 61 years old. While there is no response for having no idea and disagreeing the issue, 28,6 % of them completely disagree that there is no relationship between aging and decrease of working power and energy. The expectations of the answer more stable and there is no much deviations between different level ages. In addition, some young participants much more agree than older participants on the issue.

Table 6: Age and Knowledge and Experience

		Age is a sign of knowledge and experience					
		Strongly Agree	Agree	No Idea	Not Agree	Strongly Disagree	Total
Age	25-30	32,7%	30,8%	3,8%	23,1%	9,6%	100,0%
	31-35	37,1%	40,0%	5,7%	11,4%	5,7%	100,0%
	36-40	50,0%	35,7%	3,6%	10,7%		100,0%
	41-45	40,0%	35,0%		20,0%	5,0%	100,0%
	46-50	40,7%	37,0%	3,7%	18,5%		100,0%
	51-55	40,0%	36,0%		24,0%		100,0%
	56-60	45,0%	45,0%		5,0%	5,0%	100,0%
	61-above	71,4%	14,3%			14,3%	100,0%
	Total	41,6%	34,8%	2,7%	15,8%	5,0%	100,0%

Participants who are between 25-30 years old, completely agree and agree by 32,7 % and 30,8% respectively that aging is an indicator of knowledge and experience. But a considerable amount which is 23,1 % of them do not agree and 9,6% completely disagree this idea. And 3,8 % of them have no idea. For 31-35 years old workers, participants who strongly agree and agree this issue is dominant by 37,1 % and 40 % respectively. On the other hand portion of responses of disagree and completely disagree are 11,4 % and 5,7 % respectively. 5,7 % of respondents have no idea. The participants who 36-40 years old has a dominant response for strongly agree and agree the idea by 50 % and 35,7 % respectively. While none of them completely disagree, 10,7 % is not agree. Only 3,6 % of them have no idea about this issue. It is observed that 75 % of participants who are between 41-45 years old, is strongly agree and agree responses respectively. For those, who are 46-50 years old, participants who strongly agree and agree constitute 40,7 % and 37 % respectively. It can be inferred that 51-55 years old participants have similar rates with 41-45 years old group. While they strongly agree and agree this idea with 40% and 36% respectively, 24% of them do not agree.

For 55-60 years old participants, it is inferred that majority of this group (90 %) strongly agree and agree 45% and 45% respectively. The others of this group are divided into 2 parts equally with 5 % by responding not agree and completely not agree. 7,4 % of participants who are older than 60 years old is strikingly completely agree on the explanation. With these shares, it is inferred that workers are agree that aging of workers brings about knowledge and experience. That is why, by giving the importance of retention of aging workers, both employees and employers will reap the benefits of the process.

Table 7: Age and Technological Change

		Technological changes make me feel more lack					
		Strongly Agree	Agree	No Idea	Not Agree	Strongly Disagree	Total
Age	25-30	5,7%	24,5%	7,5%	50,9%	11,3%	100,0%
	31-35	12,1%	27,3%	3,0%	39,4%	18,2%	100,0%
	36-40	21,4%	39,3%	3,6%	35,7%		100,0%
	41-45	15,0%	35,0%	5,0%	35,0%	10,0%	100,0%
	46-50	20,7%	41,4%		34,5%	3,4%	100,0%
	51-55	29,2%	33,3%	4,2%	25,0%	8,3%	100,0%
	56-60	20,0%	30,0%	5,0%	25,0%	20,0%	100,0%
	61-above	50,0%	7,1%		14,3%	28,6%	100,0%
	Total	18,1%	30,3%	4,1%	36,2%	11,3%	100,0%

The relation between age and new technologies is seen as it is expected. Especially, while young people can easily adopt new technologies, old ones can't. In this sense, older workers are going to feel more obsolete with regard to skills since they can't adopt easily and quickly new technologies. In **Table 7**, 30,2 % of the participants who are between 25 and 30 years old think that "Technological changes make them feel more lack" by saying completely agree and agree. Second group is between 31 and 35 years old completely agree and agree with 12,1 % and 27,3 % respectively. The other groups are (36-40), (41-45), (46-50), (51-55), (56-60) and (61 and above) completely agree with 21,4 %, 15 %, 20,7 %, 29,2 %, 20 % and 50 % respectively. Even though, there is no much stable change from young employees to older, the rate of workers who are older than 61 years is much striking with 50 %.

Table 8: Working Type and Technological Change

			Technological changes make me feel more lack					
			Strongly Agree	Agree	No Idea	Not Agree	Strongly Disagree	Total
Working Type	Full Time Contract	Count	13	39	5	46	15	118
		% in Working Type	11,0%	33,1%	4,2%	39,0%	12,7%	100,0%
	Certain Time w/ Contract	Count	2	2	1	7	2	14
		% in Working Type	14,3%	14,3%	7,1%	50,0%	14,3%	100,0%
	Temporary or Seasonal	Count	1	1	0	3	0	5
		% in Working Type	20,0%	20,0%	,0%	60,0%	,0%	100,0%
	Part Time	Count	0	0	1	3	0	4
		% in Working Type	,0%	,0%	25,0%	75,0%	,0%	100,0%
	Daily Wage	Count	3	2	0	3	1	9
		% in Working Type	33,3%	22,2%	,0%	33,3%	11,1%	100,0%
	Per Piece	Count	1	0	0	0	1	2
		% in Working Type	50,0%	,0%	,0%	,0%	50,0%	100,0%
	Independent Worker	Count	19	20	3	16	6	64
		% in Working Type	29,7%	31,2%	4,7%	25,0%	9,4%	100,0%
	Total	Count	39	64	10	78	25	216
		% in Working Type	18,1%	29,6%	4,6%	36,1%	11,6%	100,0%

Table 8 shows the cross relations between the participants' working types and their attitudes and feelings toward technological changes. More than 50 % of all participants are working full time. While 44,1 % of full time workers think that "Technological changes make them feel more lack" by saying strongly agree (11 %) and agree (33,1 %), 51,7 % of these participants say not agree and strongly disagree. However, 33,75 % of all participants is independent workers and more than 60 % of this group has conscious that technological change makes them feel more obsolete. One of the reasons is the responsibility of independent workers. Otherwise independent workers can't get by of working and living requirements. Because, full time job workers are more secure in terms of employment than independent workers, they don't feel more lack of technology as much as independent workers feel.

Table 9: Age and Improvement of Skills

		I improve my skills related to my job					
		Strongly Agree	Agree	No Idea	Not Agree	Strongly Disagree	Total
Age	25-30	26,9%	63,5%	1,9%	5,8%	1,9%	100,0%
	31-35	38,2%	38,2%	5,9%	14,7%	2,9%	100,0%
	36-40	25,9%	59,3%	3,7%	7,4%	3,7%	100,0%
	41-45	45,0%	45,0%		5,0%	5,0%	100,0%
	46-50	28,6%	53,6%		10,7%	7,1%	100,0%
	51-55	50,0%	45,8%			4,2%	100,0%
	56-60	47,4%	31,6%	5,3%	10,5%	5,3%	100,0%
	61-above	69,2%	7,7%	7,7%		15,4%	100,0%
	Total	37,3%	47,9%	2,8%	7,4%	4,6%	100,0%

Today's industries and businesses require more complicated skills and knowledge than they needed in the past. With information society approach everything from social and cultural environment to business life has been changing. In this context, current workers should keep up with state-of-the-art improvements in technologic and skills. As it is seen in **Table 9**, in sum more than 85 % of participants say that they improve the skills related to their jobs. There is no much considerable difference between young and old workers' approach toward improvement their job skills. Nevertheless, after 46 years old there is a stable increase and 15,4 % of participants who are 61 years old and above strongly disagree on the explanation. It is inferred that as workforce getting older, their willingness and hopes to improve their skills decrease. And also, with the increasing retirement age levels, companies and governments should focus on aging workforce and produce plans in order to make them more skilled.

Conclusion

The last decades, developed societies have been facing an era of major demographic changes and challenges. Especially, today's rapidly changing technologies are triggering elements of cultural, social and working life. An aging workforce is a reflection of these changes and it is not only a matter of aging workers but also it needs to be focused and regulated under the heel of governments and businesses. While governments are regulating on macro level issues such as employment and retirement, businesses should focus on micro level requirements such as retraining, working conditions and improvement of skills of aging workforce. In this context, aspects of the ageing process should be integrated into company strategies and these have to be realized by appropriate procedures and methodologies in a changing environment and company culture. Otherwise, as the workforce ages, companies will face difficulties associated with losing expertise, incurring higher recruiting and training costs, and managing intergenerational concerns. In the process of aging, workers

are decreasing their expectations such as career and new goals for the future. It is seen in the survey, aging workforce has a conscious that they must improve their knowledge and skills with regard to new technologies.

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