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◆ *Research Article*

Functional Perception of Artificial Intelligence and Robot Technology

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A B S T R A C T

Today, beyond being just technological objects, artificial intelligence and robots create a multidimensional relationship network within the social structure. This multidimensional network of relationships includes human actors such as mathematicians, engineers, bankers, doctors, soldiers, students, and teachers and non-human smart actors such as chatbots, virtual assistants, autonomous vehicles, translation programs, CCTV systems, drones, humanoid robots, and smart home robots. This study is aimed to determine the perception of function towards artificial intelligence and robots of individuals who use the said technology and follow the developments and whether this perception changes according to some variables. Some data on the perception of function towards artificial intelligence and robots are handled in line with Merton's functionality perspective. Qualitative and quantitative methods obtained the data, and it was observed that the perception of function towards the technology in question differs according to the people's expectations, needs, and positions. It is thought that the data obtained will be useful to the literature and the experts on the subject.

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1 Introduction

Today, after the first, second and the third industrial revolutions, the Fourth Industrial Revolution is taking place, in which artificial intelligence and robots are used (Schwab, 2016). It is predicted that the Fourth Industrial Revolution will spread very quickly compared to the previous ones and its effects will be very different. Because while it took almost 120 years for the 1st Industrial Revolution to spread outside of Europe, it took less than 10 years for the Internet to spread worldwide (Effoduh, 2016, p.78). It is predicted that machines with human intelligence or intelligence superior to humans will greatly impact the future course of civilizations and daily life (Russell & Norving 1995, p.3). It is stated that societies faced with the rapid rise of this technology (Unesco & Comest, 2019, p.3) will experience both positive and negative effects of this technology (Anderson, Rainie, & Luchsinger, 2018; Frank et al., 2019). As artificial intelligence and robots, which are described as non-human smart actors, are increasingly becoming a part of society, it is seen that the technology in question has begun to raise social issues such as whether it can be held responsible for results contrary to ethical principles and whether it will endanger employment (Mlynar, Alavi, Verma, & Cantoni, 2018). Considering that the social effects of the technology in question will increase in the coming years, sociological research on artificial intelligence and robots can contribute to the positive development of the effects of this technology on individuals and societies.

Artificial intelligence and robotics, which have man-made mental abilities (Harris, 2002), are machines that can perform tasks such as thinking, multitasking and fine motor skills and start to replace humans in some tasks (World Economic Forum [WEF], 2017). Artificial intelligence is based on machine learning, which improves the ability of machines to learn by themselves like humans by processing data and artificial intelligence has abilities such as reasoning, using language and generating original ideas (Harris, 2002). In other words, AI is a collective term that includes machine systems that can perceive, think, and sometimes learn and act in line with their goals (Price waterhouse Coopers [PWC], 2018). Robots embody artificial intelligence applications (Say, 2020, p.120). Artificial intelligence systems, which are candidates to be successful in many jobs done by humans, are used in disease diagnosis, translation processes, customer service and many other areas, and this rate is increasing day by day (Wilson & Daugherty, 2018). Artificial intelligence systems which are advising medical doctors, scientists and judges, play an increasingly important role in the analysis and interpretation of data in scientific research (Unesco & Comest, 2019, p.3). Similarly, robots left the industry sector and started to work as soldiers, journalists, car drivers, doctors, bankers, nurses and lawyers in service areas. In short, it has begun to be found in all areas of life (Oberson, 2017, p.247).

The artificial intelligence system has also started to be effective in the selection of the information and news people read, the music people listen to, and the decisions people make (Unesco & Comest, 2019, p.3). The aforementioned technology has begun to affect all subjects such as the work people do, who they are, their understanding of privacy, how they consume, their leisure time, the time allocated to work, and how skills are developed (Schwab, 2016). This situation reveals the necessity of considering these smart machines, which take their place in society like an actor, from a sociological perspective. It is known that different perspectives have been developed to examine the interactions between people and technology, and the relationship between technical and social dimensions is examined (Cresswell, Wort, & Sheik, 2010). One of the different theoretical perspectives towards technology is the functionalist approach. This approach focuses on whether technology contributes to the smooth functioning of society or whether it responds to society and individual needs. In other words, functionalism addresses technology's contributions to society's stability, from facilitating leisure time to increasing productivity (Openstax, 2021). In this context, on the basis of functional theory, it is desired to determine the perception of the function of the open functions of the technology in question. The data were obtained by qualitative and quantitative methods and were handled with Merton's functionalist perspective.

2 Conceptual Framework

2.1 Functionalist Theory

Functionalism, also called structural-functional theory, sees society as a structure consisting of interrelated modules designed to meet the biological and social needs of the individuals that make

up that society (OpenStax, 2012, p.18). One of the contributors to the development of this theory, A. Comte, accepted societies as interconnected social systems and laid the foundations of functionality by arguing that the most appropriate way to study this subject should be the use of natural sciences (Gönç -Şavran, 2011a, p.9). H. Spencer contributed to this theory by stating that just as organs work together to ensure the functioning of the body, various parts of society also work together to maintain the functioning of society (OpenStax, 2017, p.15). In this context, as in the living system, the change in one of the social systems also affects the other parts (Poloma, 1996, p.31). In other words, societies are a system consisting of interconnected elements, parts or institutions, and the parts or elements in the system gain value according to the functions they provide to the system (Swingewood, 1998, p.272-273). The relationship of the part to the whole is functional when the parts of the society meet the needs and provide continuity (Gönç-Şavran, 2011a, p.6).

Robert Merton identified the shortcomings of the aforementioned theory and contributed to eliminating its flaws (Aslantürk& Amman, 2008, p.431). Merton crossed the boundaries of traditional functionality and criticized the assumptions of functional unity, functional universality and indispensability (Chaudhry&Venugopal, 2004, p.57). Functional unity is when a social function has a kind of unity and all parts of the social system work together in harmony (Chaudhry&Venugopal, 2004, p.57). In other words, functional unity argues that standardized social and cultural beliefs or practices are functional for all individuals in society (Ritzer, 2011, p.252). However, Merton argues that functional unity can be valid in relatively homogeneous, primitive societies and cannot be extended to modern and complex societies (Ritzer, 2011; Chaudhry & Venugopal, 2004, p.57). Merton stated that society is divided into groups and subgroups. He argued that what is functional for one group may be dysfunctional for another. It was stated that nothing is indispensable and that functional alternatives and their equivalents can always be found (Chaudhry & Venugopal, 2004, p.57). Merton first questioned whether any culturally standardized practice or belief is functional for society as a whole. Afterwards, he reminded that social uses or beliefs may be functional for some groups in the same society and dysfunctional for others (Chaudhry & Venugopal, 2004, p.57). Merton criticizes the logic that standardized cultural practices are functional for everyone, and questions for whom that functionality is. For example, while the patriarchal system is functional for men, it does not have the same function for women (Cuff et al., 1989; cited in Gönç-Şavran, 2011b, p.32). Merton, emphasizing that functional integrity is contrary to reality, stated that what is functional for one group may be dysfunctional for another group, and what is functional for one group will not be functional for the whole (Poloma, 1996, p.39). The universal functionalism assumption accepts that all social or cultural forms have positive functions (Chaudhry & Venugopal, 2004, p.57; Ritzer, 2011, p.252). This situation is different from, in other words, contradictory to what is encountered in the real world, Merton emphasizes that not every structure, tradition, idea or belief has positive functions (Ritzer, 2011, p.252). An element in society, of a development or each item cannot have a positive function; It was stated by Merton that some items may be dysfunctional and some nonfunctional (Merton, 1968). Social processes that have undesirable consequences for the functioning of society are called dysfunctions. Examples of educational dysfunction include getting bad grades, dropping out of school, not graduating, and not being able to find a suitable job (OpenStax, 2012, p.18). While religion has an integrative effect on the one hand, it can also cause conflicts or groupings (Adak, 2018, p.25, 26). Being non-function is different from dysfunctional function, and according to Merton, it indicates that a structure can continue to exist even though it has a dysfunctional or non-function for the system as a whole (Ritzer, 2011, p.257). On the other hand, although some elements in society have a dysfunctional function, they somehow contribute to the survival of society (Newman, 2016, p.21).

Merton underlined that, unlike functionalists who analyze society as a whole, the analysis should be done based on organization, institution or group (Ritzer, 2011, p.256). It has been underlined that social structures or institutions may contribute to the protection of the system as well as have negative consequences (Ritzer, 2011, p.253). The functionality of the slavery system differs according to black families, white families, black political organizations and white political organizations. Merton explains whether something is functional or dysfunctional with the concept of net balance, which emerges when analyzed in different situations. In terms of net balance, slavery is probably more functional for certain social units, while it is more dysfunctional for other social units. For example, slavery in the South of the United States positively affected white southerners by providing cheap labor, support for the cotton economy, and social status (Ritzer, 2011, p.256).

Merton stated that the functional consequences of social practices or cultural elements should be considered according to the net balance obtained by considering both positive (positive) and negative (negative) functions (Poloma, 1996, p.40). Merton also pointed out that social processes often have multiple functions. While manifest functions result from a sought or anticipated social process, hidden functions are the unexpected results of a social process (OpenStax, 2017, p.15; Hammond, 2010, p.22). Merton made a distinction between the manifest function and the latent function and stated that the participants were aware of the overt function but were not aware of the latent function. The latent function is neither intended nor known (Chaudhry & Venugopal, 2004, p.55). For example, a manifest function of university education includes acquiring knowledge, preparing for a career, and finding a good job using that education. The latent functions of university education include meeting new people, participating in extracurricular activities, and even finding a partner. Another hidden function of education is to create an employment hierarchy based on the level of education achieved. Latent functions can be useful, neutral or harmful (OpenStax, 2012, p.18).

2.2 Functional Evaluation of Artificial Intelligence - Robotic Technology

It has been seen since ancient times that technology has the function of changing and transforming societies, institutions, people's lifestyles, and people's social relations (Buduklu & Şeker, 2020, p.246). It is known that technological advances are beneficial for the development of societies as well as providing personal benefits by improving the living conditions of individuals (Perşembe, 1991, p.177). For example, in the historical process, people have invented machines to make their work easier. These machines, computers, or robots have done things humans never wanted. Thus, the functionality of machines has increased by allowing people to cooperate with machines (Epstein, 2015, p.44). In this context, artificial intelligence and robot technology have started to move out of the industrial field and into daily life, just like the spread of computers to the home (Harris, 2002). They are becoming much cheaper and more accessible as other technological devices day by day (Cincioğlu, Şişman & Yaman, 2015, p.43). Robots, which are used in health, education and business areas, have also started to be used in homes. This shows that the aforementioned technology has grown dramatically (Calderon, Mohan, & Sin Ng, 2015, p.102). Robots help people in their daily lives by building machines, packing food and washing cars (Hockstein, Gourin, Faust & Terris, 2007, p.113). Robots that can interact with humans have been developed in the 21st century (Woods, Dautenhahn & Schulz, 2005, p.126). These robots support people by helping people. Therefore, it is stated that the 21st century will be the age of digital creatures (Fujita, 2001, p.781). When the relations of AI and robot technology with different elements in the social structure are examined, it is predictable that they will have manifest and positive functions for the individual and social dimensions. This technology offers important opportunities in every field, from health to education, from industry to entertainment, and from agriculture to defense and space studies (Erdinç, 2014, p.15; Diehl et al. , 2014, p.249; Solis & Takanishi, 2012, p.130; Kececi, 2012, p.176). For example, leading tech firms have launched Earth AI to tackle sustainability challenges such as agriculture, water, biodiversity and climate change (Heiner & Nguyen, 2018). It is stated that smart machines can save hundreds of thousands of lives worldwide each year and increase mobility for the elderly and disabled. It is also stated that with smart buildings, energy savings can be achieved and carbon emissions can be reduced, in short, the quality of life can be increased. Intelligent government systems can serve citizens more quickly and precisely, better protect those at risk and save money. It is stated that with artificial intelligence-supported education, teachers can help each child to have safe and satisfactory education (Executive Office of the President, 2016, p.5).

2.1.1 Functional Perception

Perception is expressed as the process of giving meaning to objects or events in the environment by individuals (Şimşek et al., 2007, p.93). There are various factors affecting the perception process, and this is based on the individual's unique characteristics. In the face of the same situation, people interpret the event in different ways. This varies according to the knowledge, expectations, wishes, needs and feelings of the person perceiving the situation. In other words, the perception process can change according to the knowledge, motivation and mood of the perceiver (Şimşek et al., 2007, p.94). Utilitarian (functional) value perception is a functional state and includes cognitive evaluation. For example, elements of a product such as saving and providing comfort are considered as utilitarian values (Külter-Demirgüneş, 2016, p.249). In other words, this type of perception covers the functional benefits that the product or service provides or will provide (Kaya & Özen, 2012, p.15).

With artificial intelligence and robot technology being involved in people's lives, it is necessary to meet the needs and expectations of people for this technology to be functionally evaluated or accepted by them. If the expectation is not met, Adaptation Gap occurs. AG emerges from the difference between function and expectation on users' impressions of artificial agents (such as artificial intelligence, robots, machines, etc.) (Komatsu & Yamada, 2011, p.67; Komatsu, Kurosawa, & Yamada, 2011, p.2). AG<0; the negative adaptation gap occurs when the artificial agents do not perform the expected function, and in this case, the user is disappointed and rejects the robot's output by not believing it. AG>0; A positive adaptation gap occurs when the user exceeds the function expected from artificial mediators or, in other words, exceeds the perceived function. The user believes and accepts the outputs of the robot because he is not disappointed. AG=0; when the function expected of the user from artificial agents and the work done is equal, there is no adaptation gap and the robot is only considered as a tool for the users (Komatsu & Yamada, 2011, p.67; Komatsu et al.,vd., 2011, p.2). For example, when the user encounters a human-like robot, he expects such a robot to have humanoid features and behave in a human-like manner. When the user encounters a dog-like robot, he expects it to show dog-like behavior and naturally communicate with him using commands such as "sit-stand-go-reach-fetch" and other words for a real dog. The robot must meet the expectations of those who use it. Otherwise, the user will be disappointed and will not be willing to use the robot (Scopelliti, Giuliani, D'Amico, & Fornara, 2004, p.126).

3 Methodology

3.1 Purpose of Research

In this study, it is aimed to determine whether people's perception of function towards artificial intelligence and robot technology differs according to gender, age, education level, occupation, economic situation and urban variables, and to determine the views of human actors about the functions of the technology in question. For this purpose, the research problems are as follows:

1. Do people's perceptions of artificial intelligence and robot technology function differ according to gender, age, education level, occupation, economic situation and urban variables?

2. What are people's opinions about the functions of artificial

3.2 Rationale and Importance of the Research

The diversification of artificial intelligence and robot technology day by day and their inclusion in life have revealed the need for research on their effects on individuals. When the literature is scanned, it is seen that there are very limited studies on the determination of the opinions of individuals who have started to experience the technology in question. The fact that there is no study on the perception of the function of artificial intelligence and robot technology is thought to make this research important, and it is predicted that this study will fill one of the gaps in the field.

3.3 Rationale and Importance of the Research

This study used a mixed research method, in which qualitative and quantitative methods are used together. The rationale for using mixed methods research in this study is to expand the research boundaries by using multiple research components and different methods, in other words, to increase the scope of the research. While quantitative data reflect numerical data and statistical analysis, qualitative data reflect in-depth information through narratives (Fraenkel, Wallen, & Hyun, 2012, p.557). One of the most important purposes of a qualitative study is to reveal the perceptions and experiences of the individuals included in the research. The researcher interviews individuals to understand how they perceive or interpret the outside world. The descriptive data obtained from the interviews form the basis of the analyzes to be made later (Yıldırım & Şimşek, 2006, p.45). The correlational research method was applied in the quantitative step of the study. The relationship screening method is used to determine the relationship between variables. In other words, it is done to determine the relationships between two or more variables and explain what kind of relationship exists. With the relational method, it is tried to find out to what extent some relationship type or types exist (Büyüköztürk, Kılıç-Çakmak, Akgün, Karadeniz, & Demirel, 2012, p.15). In this research, the "Artificial Intelligence and Robot Technology Perception Scale", developed within the scope of the quantitative study, was applied and IBM SPSS Statistics v26.0 was used in the statistical analysis of the data. The semi-structured interview technique was used within the scope of the qualitative

study, and the data obtained from the interviews as a result of the qualitative study were analyzed with the descriptive analysis method.

3.4 Research Groups

In this study, data were collected from two different groups. In the quantitative stage of this research, statistical analysis was conducted to determine the relationship between gender, age, education level, occupation, economic status and urban variables of perception of function towards artificial intelligence and robot technology. In the research conducted to determine the relationships, the research group consisted of 491 people. In this context, the selection of individuals was made among the volunteer participants in the survey applied via Google Forms, using the appropriate sampling method. The participants included in the study were between the ages of 18-81 and the mean age was 42.24 (± 15.10). Details regarding the socio-demographic characteristics of the participants are given in Table 1.

Tablo 1. Findings Regarding the Socio-Demographic Characteristics of the Study Group to Determine the Relationships between the Variables

Variant	Groups	F	%
Gender	Woman	192	39.1
	Man	299	69.9
Birth year	1940-1959	82	16.7
	1960-1979	146	29.7
	1980-1994	187	38.1
	1995-2010	76	15.5
Education level‡	Literate	1	.2
	Illiterate	1	.2
	Primary school	3	.6
	Middle school	4	.8
	High school	34	6.9
	Licence	334	68.0
	Graduate	114	23.2
Job	Teacher	187	38.1
	Health employee	39	7.9
	Military-Security	30	6.1
	Employee	45	9.2
	Officer	44	9.0
	Academician	35	7.1
	Engineer	41	8.4
	Student	30	6.1
	Retired	40	8.1
Economical Situation	0-2500 TL	58	11.8
	2501-3500 TL	21	4.3
	3501-4500 TL	60	12.2
	4501-6000 TL	163	33.2
	6001-10500 TL	137	27.9
	10501 and above	52	10.6
Living Place	City	192	39.1
	Bigcity	299	69.9

‡These four groups were not included in the analysis of education level due to the insufficient number of participants who marked theireducation level as "illiterate", "literate", primary schooland "secondary school".

There are 15 people in the group that is the sample for the qualitative part of the study. Care was taken to ensure that these people had medium and high levels of knowledge about artificial intelligence and robotics. Using the snowball method, the first volunteer participant is the person who has knowledge about artificial intelligence and robot technology known to the researcher and follows the developments, and the other participants were reached through the first participant. The participants were first contacted by phone or e-mail and informed about the study, and then an appointment was made for the interview. Some descriptive information about the research group is summarized in Table 2.

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Table 2. Some Descriptive Information About the Interviewees

Participant	Gender	Age	Education Level	Job	Economical Situation	City	Living Place	Perceived Knowledge Level	The Level of Following the Developments
P1	Man	68	Licence	Retired	3.501-4.500	Trabzon	Bigcity	Mid	Often
P2	Man	54	Graduate	Soldier	10.501 ve	Ankara	Bigcity	Mid	Always
P3	Woman	36	Graduate	Academician	6.001-10.500	Trabzon	Bigcity	Mid	Often
P4	Man	25	Licence	Guidance and Psychological Counselor	4.501-6000	Rize	City	High	Always
P5	Woman	47	Licence	Guidance and Psychological Counselor	6.001-10.500	Rize	City	Mid	Often
P6	Woman	31	Graduate	Sociologist	6.001-10.500	Afyon	City	Mid	Often
P7	Man	45	Licence	Teacher	6.001-10.500	Karabük	City	Mid	Often
P8	Man	33	Graduate	Physicist	6.001-10.500	Artvin	City	Mid	Often
P9	Man	40	Graduate	Teacher	4.501-6000	Karabük	City	High	Often
P10	Man	35	Licence	Banker	6.001-10.500	Karabük	City	High	Often
P11	Man	50	Licence	Engineer	4.501-6000	Karabük	City	Mid	Often
P12	Woman	36	Graduate	Press and	2501-3500	Sivas	City	Mid	Often
P13	Man	38	Graduate	Soldier	6.001-10.500	Van	Bigcity	Mid	Often
P14	Woman	25	Graduate	Academician	6.001-10.500	Trabzon	Bigcity	Mid	Often
P15	Man	57	Graduate	Engineer	6.001-10.500	İstanbul	Bigcity	Mid	Often

Ethical Statement: Ethical permission was obtained from the Human Research Ethics Committee of Bolu Abant İzzet Baysal University on 29/04/2021 with the number 2021/159 in order to conduct the research and collect the data. The study was conducted with volunteer participants who agreed to answer the interview questions and gave their consent.

3.5 Data Colection Tools

In this study, the "Personal Information Form" created by the researcher, "Artificial Intelligence and Robot Technology Perception Scale", a semi-structured interview form was used to measure the function perception level of the participants toward artificial intelligence and robot technology.

Information Collection Form: In the information form created by the researcher to determine some demographic information about the sample groups participating in qualitative and quantitative

research, there are questions about age, gender, education level, income level, occupation and city of residence.

The artificial Intelligence and Robotics Perception Scale was used in the quantitative step of the research. The aforementioned scale was designed in a 5-point Likert type consisting of "Strongly disagree", "Disagree", "Undecided", "Agree" and "Strongly Agree" options. A rating was made between strongly disagree (5) and strongly agree (1). The scale consists of 26 items with four factors. Within the scope of this research, items from 1 to 12 on the scale to measure perception of function were used in data analysis. Within the scope of this research, the Cronbach Alpha Internal Consistency Coefficient technique was used in the reliability analysis. The Cronbach alpha internal consistency coefficient shows the total reliability of that scale and the general acceptance is that this value is .70 and higher (Kılıç, 2016, p.47). In this context, it is seen that the function perception items of the scale have a high level of reliability.

Table 3. Reliability Analysis Results of Artificial Intelligence and Robotics Perception Scale

Factor	**ItemNumber**	**InternalConsistency (Cronbach Alfa)**	
		EFA Group	**CFA Group**
Perception of SocialFunctioning	5	.80	.74
Perception of PersonalFunctioning	7	.87	.86
Total FunctionPerception	12	**.89**	**.89**

In the context of confirmatory factor analysis (CFA) performed to determine the construct validity of the scale, the acceptable and perfect fit values (Hu & Bentler, 1999) of the fit indices examined to determine the adequacy of the scale are shown in Table 4.

Table 4. Perfect and Acceptable Fit Values for Fit Indices Examined in the Study and Fit Index Values Obtained from CFA

Examined Fit Index	**Perfect Fit Standards**	**Acceptable Fit Standards**	**Obtained Fit Index**	**Result**
χ^2/sd	$0 \leq \chi^2/sd \leq 2$	$2 \leq \chi^2/sd \leq 3$	2.39	Acceptable Fit
GFI	.95 ≤GFI ≤ 1.00	.90 ≤GFI ≤ 95	.80	Close to Acceptable Fit Criterion
AGFI	.90 ≤AGFI≤ 1.00	.85 ≤AGFI≤ .90	.76	Close to Acceptable Fit Criterion
CFI	.95 ≤CFI ≤ 1.00	.90 ≤CFI ≤ .95	.95	Perfect Fit
NFI	.95 ≤NFI ≤ 1.00	.90 ≤NFI ≤ .95	.91	Acceptable Fit
NNFI	.95 ≤NNFI≤ 1.00	.90 ≤NNFI≤ .95	.94	Acceptable Fit
IFI	.95 ≤IFI ≤ 1.00	.90 ≤IFI ≤ .95	.95	Perfect Fit
RMSEA	.00 ≤RMSEA≤ .05	.05 ≤RMSEA≤ .08	.08	Acceptable Fit
SRMR	.00 ≤ SRMR ≤ .05	.05 ≤ SRMR ≤ .10	.07	Acceptable Fit
PNFI	.95 ≤PNFI ≤ 1.00	.50 ≤PNFI ≤ .95	.82	Acceptable Fit
PGFI	.95 ≤PGFI ≤ 1.00	.50 ≤PGFI ≤ .95	.66	Acceptable Fit

χ^2=694.14, *sd*=290

For the interview form, in the qualitative step of the research, the criterion of credibility (Robson, 1993) used in qualitative research was taken into account, instead of validity, which is the criterion in quantitative research and various strategies were used in this context (Lincoln & Guba, 1985; Shenton, 2004). First of all, the data collected after each question was summarized, and the accuracy of these was checked with the participants to see if there was anything else they wanted to add, and then the data were made ready for analysis. In addition, giving feedback on the collection and analysis of data and writing the results by an expert who has knowledge of the research is another way to ensure credibility.

4 Results

4.1 Results Obtained Regarding the Artificial Intelligence and Robot Technology Function Perception of the Participants

Do the participants' perceptions of artificial intelligence and robot technology function differ according to gender, age, education level, occupation, economic situation and city variables? The details of the problem are shown in the tables below.

Table 5. Perception of Function – Gender

	Group	N	Rank Average	Rank Sum	U	p
Perception of Social Functioning	Women	192	248.69	47748.50	28187.50	.735
	Men	299	244.27	73037.50		
Perception of Personal Functioning	Women	192	274.57	52717.00	23219.00	.000*
	Men	299	227.66	68069.00		
Total Function Perception	Women	192	265.65	51005.50	24930.50	.014*
	Men	299	233.38	69780.50		

*p<.05

According to the results of the Mann-Whitney U test, which was conducted to determine whether there is a significant difference in the social function perception, personal function perception and general function perception scores of male and female participants; while no statistically significant difference was observed in the social functioning perception score (U=28187.50, p>.05), personal functioning perception (U=23219.00, p<.05) and general functioning perception (U=24930.50, p<.05) scores a significant difference was observed. Looking at the mean rank of this finding, it was concluded that women's perception of personal and general function was higher than that of men.

Table 6. Perception of Function – Birth Interval

	Groups	N	Rank Average	sd	χ^2	p	Significant Difference
Perception of Social Functioning	1940-1959 (1)	82	220.98	3	6.877	.076	meaningless
	1960-1979 (2)	146	236.44				
	1980-1994 (3)	187	265.56				
	1995-2010 (4)	76	243.22				
Perception of Personal Functioning	1940-1959 (1)	82	191.31	3	26.266	.000*	1-3 1-4 2-3 2-4
	1960-1979 (2)	146	225.06				
	1980-1994 (3)	187	273.55				
	1995-2010 (4)	76	277.45				
Total Function Perception	1940-1959 (1)	82	198.83	3	20.027	.000*	1-3 1-4 2-3
	1960-1979 (2)	146	227.32				
	1980-1994 (3)	187	273.45				
	1995-2010 (4)	76	265.24				

*p<.05

The Kruskal-Wallis test was used to determine whether there was a difference between participants with different birth years in social function perception, personal function perception and general function perception scores. According to the results of the analysis, the social function perception (χ2=6.877, p>.05) scores of the participants do not differ significantly according to the year of birth. On the other hand, a significant difference was observed in the scores of perception of personal function (χ2=26.266, p<.05) and perception of general function (χ2=20.027, p<.05). As a result of multiple comparisons made with the Mann-Whitney U test to determine the source of differentiation, this difference was found in the perception of personal function between 1940-1959 and 1980-1994, 1940-1959 with 1995-2010, 1960-1979 with 1980-1994, 1960-1979 with 1995- 2010 birth year ranges; in general function perception, it was determined that it was between 1940-1959 and 1980-1994, between 1940-1959 and 1995-2010, between 1960-1979 and 1980-1994 birth year. According to these results, when the mean rank is examined, it is seen that the perception of personal and general function of the participants born between 1980-1994 is higher than the participants

born between 1940-1959 and 1960-1979; The perception of personal and general function of the participants born between 1995-2010 is higher than the participants born between 1940-1959; It was observed that the perception of personal function of the participants born between 1995-2010 was higher than the participants born between 1960-1979.

Table 7. Perception of Function – Education Level

	Groups	**N**	**Rank Average**	**sd**	**χ^2**	**p**	**Significant Difference**
Perception of Social Functioning	High School (1)	34	172.84	2	11.442	.003*	1-2 1-3
	License (2)	334	240.73				
	Graduate (3)	114	264.23				
Perception of Personal Functioning	High School (1)	34	228.69	2	.316	.854	meaningless
	License (2)	334	242.75				
	Graduate (3)	114	241.65				
Total Function Perception	High School (1)	34	201.15	2	3.684	.158	meaningless
	License (2)	334	241.57				
	Graduate (3)	114	253.34				

*p<.05

The Kruskal-Wallis test was used to determine whether there was a difference between participants with different education levels in social function perception, personal function perception and general function perception scores. According to the analysis results, the personal function perception of the participants (χ2=.316, p>.05) and general function perception (χ2=3.684, p>.05) scores do not differ significantly according to education level. On the other hand, a significant difference was observed in the scores of perception of social function (χ2=11.442, p<.05). As a result of multiple comparisons made with the Mann-Whitney U test to determine the source of differentiation, it was determined that this difference was between high school and undergraduate education, high school and graduate education level. Based on these findings, when the mean rank is examined, it has been concluded that the social function perception of the participants with high school education level is lower than the participants with undergraduate and graduate education level.

Table 8. Perception of Function – Job

	Groups	**N**	**Rank Average**	**Sd**	**χ^2**	**p**	**Significant Difference**
Perception of Social Functioning	teacher (1)	187	256.35	8	33.440	.000*	1-4 4-6 1-6 4-7 1-9 4-9 2-4 5-6 2-9 6-8 3-4 6-9 4-5 7-9
	Health Worker (2)	39	280.27				
	Military-Security (3)	30	243.33				
	worker (4)	45	164.72				
	Officer (5)	44	240.07				
	Academic (6)	35	306.40				
	Engineer (7)	41	276.55				
	student (8)	30	234.13				
	Retired (9)	40	188.91				
Perception of Personal Functioning	teacher (1)	187	246.54	8	15.894	.044*	1-9 2-9 3-9 6-9 7-9 8-9
	Health Worker (2)	39	270.14				
	Military-Security (3)	30	262.28				
	worker (4)	45	230.11				
	Officer (5)	44	217.05				
	Academic (6)	35	273.44				
	Engineer (7)	41	270.77				
	student (8)	30	278.65				
	Retired (9)	40	183.55				
Total Function Perception	teacher (1)	187	250.48	8	23.952	.002*	1-4 4-7 1-9 4-9 2-4 5-6 2-9 6-9 3-4 7-9 3-9 8-9 4-6
	Health Worker (2)	39	277.60				
	Military-Security (3)	30	259.80				
	worker (4)	45	195.52				
	Officer (5)	44	224.99				
	Academic (6)	35	293.91				
	Engineer (7)	41	276.80				
	student (8)	30	259.67				
	Retired (9)	40	180.05				

*p<.05

The Kruskal-Wallis test was used to determine whether there was a difference between participants with different occupations in social function perception, personal function perception and general function perception scores. According to the analysis results, the participants' perceptions of social function (χ2=33.440, p<.05), personal function perception (χ2=15.894, p<.05) and general function perception (χ2=23,952, p<.05) scores differ significantly according to occupational groups. Mann-Whitney U test to determine the source of differentiation has been made. As a result of multiple comparisons, teacher and worker, teacher and academician, teacher and retired, health worker and worker, health worker and retired, military-security and worker, worker and civil servant, worker and academician, worker and engineer, worker and retired, civil servant and employee, academicians and students, academicians and retired, engineers and retired occupational groups have been determined that there is a difference in the perception of social function. Occupational groups in the perception of personal function include retired and teacher, retired and health worker, retired and military-security, retired and academician, retired and engineer, retired and student; in general function perception, teacher and worker, teacher and retired, health worker and worker, health worker and retired, military-security and worker, military-security and retired, worker and academician, worker and engineer, worker and retired, civil servant and academician, academician and retired, engineer and retired, student and retired occupational groups have been determined.

Table 9. Perception of Function – Income Level

	Groups	N	Rank Average	Sd	χ^2	p
Perception of Social Functioning	0-2500 TL	58	210.14	5	8.775	.118
	2501-3500 TL	21	208.79			
	3501-4500 TL	60	229.46			
	4501-6000 TL	163	251.97			
	6001-10500 TL	137	258.15			
	10501 and above	52	269.40			
Perception of Personal Functioning	0-2500 TL	58	256.86	5	3.324	.650
	2501-3500 TL	21	228.71			
	3501-4500 TL	60	220.14			
	4501-6000 TL	163	250.32			
	6001-10500 TL	137	244.93			
	10501 and above	52	259.98			
Total Function Perception	0-2500 TL	58	237.07	5	4.750	.447
	2501-3500 TL	21	217.90			
	3501-4500 TL	60	219.78			
	4501-6000 TL	163	251.66			
	6001-10500 TL	137	250.53			
	10501 and above	52	267.91			

The Kruskal-Wallis test was conducted to determine whether there was a difference between participants with different income levels in social function perception, personal function perception and general function perception scores. According to the analysis results, the participants' perceptions of social function (χ2=8.775, p>.05), personal function perception (χ2=3.324, p>.05) and general function perception (χ2=4.750, p>.05) scores do not differ significantly according to the year of birth.

Table 10. Perception of Function – Living Place

	Groups	N	Rank Average	Rank Sum	U	p
Perception of Social Functioning	City	192	249.10	47826.50	28109.50	.697
	Bigcity	299	244.01	72959.50		
Perception of Personal Functioning	City	192	251.84	48352.50	27583.50	.464
	Bigcity	299	242.25	72433.50		
Total Function Perception	City	192	250.41	48078.50	27857.50	.581
	Bigcity	299	243.17	72707.50		

According to the results of the Mann-Whitney U test, which was conducted to determine whether there is a significant difference in the social function perception, personal function perception and general function perception scores of the participants living in the city and the big city, social function perception (U=28109.50, p>.05), personal function perception No statistically significant difference was observed in the scores (U=27583.50, p>.05) and general perception of function (U=27857.50, p>.05).

4.2 Qualitative Findings Obtained from Semi-Structured Interviews

4.2.1 Service Areas in Which Participants Perceive AI and Robot Technology as Functional

It has been stated that the use of artificial intelligence and robot technology in service procurement will be functional. Health, construction and industry constitute the prominent socio-cultural service areas. Opinions on the technology in question are as follows:

> *"I think that the use of this technology in the field of health will be functional. It can provide diagnosis and treatment, and can be a supportive force when doctors are tired and sleepless…"(P1)*

> *"In an article I read, a doctor in America operated on a patient in a different part of the world using the facial system and robotic arms. I think that such developments will be very beneficial to health care. In addition, I would like the robot and the human doctor to intervene at the same time in a surgical intervention for me. The robot will do the fine work, but the doctor will also check it…"(P5)*

> *"It is very suitable for use in the healthcare field. The doctor is operating remotely, the man is operating from Canada to Istanbul, these are super developments. A doctor can reach everywhere from one point without going anywhere, and he gives everyone the chance to reach this opportunity…"(P15)*

> *"I think it will be useful because I think that AI and robots will do didactic work quickly in the construction field and such. I see it as an assistive technology in areas where a human touch is important in service areas such as education, elderly care and child care, that is, it will have a facilitating effect, but it cannot directly replace people…"(P3)*

> *"I think that the use of robots in chemical and health-hazardous factories and industries will be functional. In terms of human health, it can eliminate human deaths and serious health problems caused by working conditions. Because no matter how much security measures are taken in areas such as industry and construction, people experience serious health problems and deaths…" (P11)*

> *"The use of artificial and robotic technology in education services will be beneficial. Thanks to AI systems, I will be able to get training whenever and wherever I want, and I think everyone will benefit in this way…"(P10)*

In the interviews, it was determined that sociocultural environments such as hotels, shopping centers or museums are one of the service areas that artificial intelligence and robot technology see as functional. Some of the opinions of the participants on this subject are as follows:

> *"When I'm shopping, I get annoyed when staff comes to help me. I would like to wander by myself. I don't want anyone to guide me in shopping. It would be better for me if I was not bothered by a robot accompanying me…"(P2)*

> *"I think it would be beneficial to use artificial intelligence and robot technology in hotels and shopping centers. The use of robots will be better in this kind of service, especially in terms of cleaning, especially in today's world where human crowds increase and epidemic diseases are experienced. I would also like the robot to carry my luggage and show me my room at the hotel…" (P5)*

> *"I think this technology will be functional in hotel services. I think that it will perform tasks such as carrying suitcases, showing my room, making payments for hotel services more smoothly and with high quality. There is no need for emotion in such services and I would like the error to be zero…" (P13)*

In addition, the views that this technology will be functional in risky missions in military and security service areas and that its use in the military field will be dysfunctional are expressed as follows:

> *"Since individual and community safety is essential for me, I think it would be appropriate and functional to use it for both individual and community safety. It can be faster and more predictive in detecting crimes and criminals. In addition, I think that it will reduce the injury and death rates of human soldiers in the military field…"(P1)*

> *"It will be useful for security. Soldiers do not die while performing their duties using AI and robot technology…"(P5)*

"It should not be used in the field of defense very clearly, this technology is very open to use for war and violence..." (P2)

"I find its use in the military field risky in this respect. The military system can collapse in an instant, which will further increase the risk of confidential information being hacked and captured by other states..."(P6)

"I think it should not be used in the military arena. For example, you made a program that considers the plane of the state that will attack us as the enemy. When this AI-powered device is hacked, it can now see us as the enemy; that is, it can perceive the friend as the enemy and the enemy as the friend, and it is now easy to do this today..." (P7)

4.2.2 Functionally Perceived Position of AI and Robotics

The opinions of the participants about the functionally perceived position of the artificial intelligence supported robot in their personal lives are summarized below.

"I would like him to be in the assistant position in my life so that I can handle and finish my work better. While doing business, you may disagree with a person or slow down. A robot does not do this, it gives you speed and time ..."(K6)

"I would like an AI to be my assistant. If I have an assistant, it takes up my workload. Thus, more time is left for me to socialize for human values such as reading, thinking, traveling, having fun, and walking around. I do not want to be friends because the concept of friendship includes emotion. How can a robot perceive crying, sadness, joy, fear, excitement and how can these feelings be shared with him"... (P9)

"I would like to have an assistant, but I would like him to be in our lives as a friend, as I think it will be useful for lonely people in society. I think it will be useful for people who feel lonely, it will be something they can share their loneliness with. This position is very important, as I think it can reduce the loneliness phenomenon in people..." (P8)

4.2.3 Desired Tasks of AI and Robotics

During the interview, the opinions of the participants on the tasks that AI and robot technology are asked to do to make their lives easier are summarized below. It was seen that the majority of the participants wanted to do home-related chores.

"I want the house to meet all kinds of needs and inform me of the deficiencies. I want it to clean the house, do the ironing, that is, do my daily routine work. I want him to do things that take my time..." (P2)

"I want him to take the burden of my housework. Currently, there are robots that do house sweeping and wiping, I want them to do housework that requires such physical activities..." (P3)

"As someone who lives alone, my problem is cooking. I would like him to think about and handle my daily chores like this, to know the food I like and to order, in short, to take care of my daily chores..." (P4)

From their professional burdens, it is seen that participants especially want artificial intelligence and robot technology to take over the paperwork. Some of the opinions on the subject are as follows:

"Due to my job, I have to do intellectual work on the one hand, and on the other hand, I have to give lectures, consultancy, paperwork, and exams. I spend a lot of time on all of these. When I devote time to these, my intellectual development lags. Let artificial intelligence lighten my professional burden; let documents and exams follow this kind of work" (P6)...

"I would like him to follow up on the documents related to my profession; on which date what letter will be answered, and send it to me on my behalf. Let him prepare a prescription for my projects; they really take time..."(P7)

"I want him to do my paperwork. Thus, I could have spent more time on teaching with my job..."(P9)

Other opinions on the subject are as follows:

"I would like robots to track my banking transactions. I have to go to all kinds of banks and wait at the counters, without the need for this, I want the system to handle all my work and just submit a report to me. In addition, I would like him to analyze my stock market transactions and give guidance on papers that will gain value and lose value..."(P1)

"I want him to do my financial transactions; I want him to follow up on my money; I trust these transactions to make money. I am trying to make statistics for myself in financial transactions; let him do it for me…" (P13)

"I want it to drive my car and I want everyone to head to it. Thus, I think that transportation will be more regular and systematic…" (P8)

"First of all, I would like to make my life easier by using my vehicle. Because I want to take time for myself on the road. Due to my job, my workplace is far away and I always drive. I spend most of the day driving. If I do not use the vehicle in that process, I could do different things …" (P11)

"When I have a legal problem, I would like to have a robot lawyer as my advisor. The human will be more useful than the lawyer. Because a human will have much more data than a lawyer. Thus, it will synthesize better and find a more suitable solution for me. Plus, I don't have to go to a lawyer and pay money." (P4)

4.2.4 Views on the Effects of AI and Robot Technology on Business Life

Participants were asked to evaluate how artificial intelligence and robotics would affect their work lives. Participants expressed their views on the effects on business life as follows:

"It is said that some professions are over and will be replaced by AI and robots. Especially for the healthcare and banking sectors. I do not see this as possible for fields such as education, academics, and psychological counseling. I think it will make my work life easier. I don't know how far it will go, but I don't think it will take my job away in the short term…"(P3)

"I think it will affect my job positively; I don't think it will take my job away from me. I think this is difficult in the field of education. Because emotions are involved. As a guidance and psychological counselor, I don't think it will have a negative effect in the short term. This technology can conduct certain sessions, preliminary sessions…" (P4)

"I think it will affect my business life positively. Namely, now I am getting rid of writing pages by using systems such as WhatsApp's voice recognition feature. It may be enough for me to just say what I want to write out loud…"(P9)

"It will make my business life easier as an employer. I will have robots that work 24 hours a day without getting tired; this will save me from the burden of many human employees and risks related to occupational safety. It will increase my productivity and quality of work and reduce my costs. However, it will be negative for the workers…" (P11)

"As a construction engineer, that is, as a practitioner in the field, the robot that makes plaster, the robot that builds walls, makes my job easier. And they will help me uncover fewer faulty structures. No one will be able to steal from iron or cement. I already know that such robots have been developed…"(P15)

"It will negatively affect my profession as a banker because we are more interested in statistical calculations and more technical stuff. I think this technology will end the banking profession in the near future after 2030…" (P10)

4.2.5 The ımpact of AI and Robotics on Community Welfare

The participants' opinions on the impact of artificial intelligence and robot technology on the welfare of society are summarized below. It is seen that the participants were evaluated in two different ways. While some of them said that it would have a direct positive contribution to the welfare of society, others stated that it could make a positive contribution according to the usage situation.

"I think it will contribute positively to the welfare of society. It will provide more effective functioning in a shorter time at the point of social service. In the simplest terms, there will be no situations such as waiting in line and not getting service; problems caused by human errors will be prevented.It is also easier to train artificial intelligence than humans.We complain about not being able to train qualified people, especially in services that spread to the community. When AI is programmed very quickly and used here, it will contribute to the welfare of society.In other words, people will receive service in the field they want, when they want, with the quality they want… " (P3)

"It can take heavy burdens and obligations from people. It can contribute to the welfare of societies by excluding all the negativities that cause physical and mental fatigue in daily life…" (P4)

"I think it will improve the service provided in different service areas such as health, education and transportation. I think that the number of people piling up will decrease due to the slowness of the work in different service procurements..."(P 7)

"Considering that AI and robots will be equipped with superior learning and academic skills, things will progress faster and people will receive quality services..."(P15)

"As long as it is controllable, I think it will contribute to the prevention of loneliness, one of the socio-psychological problems in societies. It will also be effective in solving most of the diseases. Thus, I think that it will enable the formation of physically healthier human communities..."(P8)

"I would like to give a conditional answer to this question. If we have control, it will contribute positively to the welfare and peace of society. It will contribute in many areas, such as speeding up production, doing jobs that human power cannot afford, speeding up communication, and facilitating transportation. For example, great strides are being made in agriculture thanks to robots. Productivity in agriculture will increase, and it will provide the opportunity to get rid of chemicals in agricultural products. It will allow us to get more products from less agricultural land. Thus, it will allow food prices to fall and everyone to buy every product in equal amounts...(K9)"

4.2.6 The Impact of AI and Robotics on Community Welfare

If artificial intelligence and robots do all the work, it was seen that the participants' views on functionality were divided into three categories. Some stated that it would be good for them to have all the work done. Others stated that it would be beneficial only when they did the work they determined. Others have expressed that they do not want him to do all the work in any way. The opinions of the participants on the subject are summarized below.

"If this technology is going to do all the work for me, I want it like everyone else. I will not think of anything. Robots will do everything for me. He will plan and execute when the time comes. I would like such a convenience..." (P1)

"I want them to do all the work because it allows me to be on my own and do the things I want. It's okay if I can live comfortably while doing my job, they can do all the work..." (P4)

I don't want them to do all my work. I just want him to do some of my work by helping. Thus, I can spend most of my time doing the things I want. In fact, the current system does not allow all the work to be done by them. Because there is a need for human activation in terms of production-consumption balance..." (K6)

"I want artificial intelligence and robots to do all my work on the weekends; I can program them for those days. Because if I or we live the same way all the time, it will cause both physical and mental problems. Let it stay at a certain level..." (P7)

"I would like him to help me with my work, not to do all my work. For example, people spend 9 hours out of 24 working. I would like the robot to do this for 4 hours. In this period of time, I will have plenty of time for social activities such as art, music, science, and meeting with friends. I think everyone needs it, and it should be like this..." (P9)

"When they do all the work, I feel like the work I've been busy with in life has been taken away from me. Then I fall into a void. Therefore, I don't want all the work done by them..." (P8)

"I don't want all the work done by them. In such a situation, I begin to question the reason for my existence..." (P10)

"What will I do if artificial intelligence and robots do everything? What will I do to fill in the gaps in my life? My work schedule is very busy, and I can spare little time for sleep. How will I spend my time in this situation? What am I going to spend that much time doing? I have hobbies, yes. But how far? I can get bored after a certain time..." (P11)

"Obviously, I don't want anything like that. I ask myself, "What will I do if artificial intelligence and robots do everything?" Maybe I can take up new hobbies for myself, but how long will it take? I will get bored after a while..." (P12)

5 Discussion

This research aims to determine whether the participants' perceptions of artificial intelligence and robot technology differ in terms of some demographic variables. In addition, it is aimed to determine

the participants' perceptions of function towards this technology. For this purpose, statistical and descriptive analyzes were made on the data obtained. In this section, the findings are discussed and some explanations are given.

5.1 Discussing the Findings Obtained on whether Artificial Intelligence and Robot Technology Functional Perceptions Differ According to Gender, Age, Education Level, Occupation, Economic Status and City Variables

When the participants' perceptions of artificial intelligence and robot technology differed according to gender, it was concluded that women's personal and general function perceptions were higher than men's. The higher perception of women's personal function and general function perception can be explained by the fact that women traditionally responsible for housework (Arras &Cerqui, 2005) see this technology as a technology that will facilitate their daily work. The technology in question arises from the thought that it will save women from very laborious work and increase their productivity and comfort. Briefly, it can be explained that women see this technology as assistive.

Moreover, when we look at the items of "Personal Function Perception" ("I think artificial intelligence and robot technology will make my daily life easier"; "I think I will spare more time for myself thanks to artificial intelligence and robot technology"; "I would like an AI-powered robot to do my daily work at home"), it can be said that women are more sensitive than men to the benefits of artificial intelligence and robot technology.

As a result of the analyses, it was determined that there was a significant difference between the participants' perception of social, personal, and general function towards artificial intelligence and robot technology and the perception of personal and general function according to birth year intervals. While determining the age ranges used within the scope of our research, baby boomers (81-62); X (61-42); Y(41-27); the birth year ranges of the Z (26-11) generations (McKinsey & Company, 2018) were taken as references. It has been seen that the perception of personal and general function among the participants in the Y generation is higher than that of the baby boomers and the X generation. It has been seen that the perception of personal and general function of the participants in the Z generation is higher than that of the baby boomers and the X generation. As can be seen, the Y and Z generations, which include the 41-27 and 26-11 age groups, find the artificial intelligence robot technology most functional. The Y and Z generations are more optimistic than the baby boomers and X generations about artificial intelligence and robot technology providing personal and social benefits. The Y and Z generations see this technology as having the potential to meet their needs and make their lives easier.

When the relationship dimension between the perception of artificial intelligence and robot technology function of the participants and the level of education grouped as high school, undergraduate and graduate is examined, it is seen that the perception of personal and general function does not differ at the level of education, but the perception of social function does. It was determined that the social function perception of the participants with high school education levels was lower than that of those with undergraduate and graduate degrees. As they pass from postgraduate education to high school, they have a decreasing positive opinion that artificial intelligence and robotics are technologies that have the potential to benefit society.

According to the analysis of whether the perception of the function of artificial intelligence and robot technology differs according to occupational groups, it has been observed that social function perception, personal function perception and general function perception differ significantly according to occupational groups. When the numerical ratios in Table 8 are examined, it is seen that the group with the highest perception of social function is the academicians and the lowest ones are the workers. Due to their profession, academics conduct research for the benefit of society and its development. Therefore, when this technology is put to the service of society, they have a high awareness of what kind of benefits or what kind of function it will have in the social dimension. In other words, academicians can analyze better than other occupational groups when making social-based inferences.

When the difference in personal function perception according to occupational groups is examined, it is seen that the group with the highest personal perception is students, while the group with the lowest personal function perception is retirees. It is seen that this situation is consistent with the result of birth year interval-personal function perception in Table 5. Looking at the mean rank, it is

seen that those in the 26–11 age group have the highest perception of personal function, while those in the 81–62 age group have the lowest perception of personal function. Considering that retired participants are also in these age groups, they may underestimate the potential of artificial intelligence and robotics to be functional in their personal lives for two reasons: first, they think they will have problems using and understanding this technology, and second, they do not trust the work that this technology will do in their living spaces. The interview with participant K1 (68 years old, retired) within the scope of the qualitative study stated: "The generation, like me, cannot keep up with technology, and they continue their old behavior. But there is a new generation dependent on technology. This generation is faced with completely new technologies. The new technology has become the friend of the new generation…" The expressions used in the form support the discussion on the subject. The fact that student participants also have a high perception of personal function can be explained by the opposite situation for retired participants. In other words, students started life while smartphones were used. Therefore, it can be explained by the fact that this generation can adapt more easily to the opportunities offered by artificial intelligence and robots, they can learn this technology more easily and they trust this technology.

Functional perception findings for artificial intelligence and robotics can be analyzed in line with Merton's functional unity assumption. According to this assumption, society consists of groups with different characteristics, which indicates that what is functional for one group in society may not be functional for another group (Poloma, 1996; Ritzer, 2011; Chaudhry & Venugopal, 2004). When we look at the results of our research, while men, baby boomers, and the X generation, individuals with only high school education level, the functionality of artificial intelligence and robot technology is evaluated as low; women, the Y and Z generations, and individuals with undergraduate and graduate education levels were evaluated as high. In addition, when Table 8 is examined, it is seen that the perception of personal, social and general function differs in different occupational groups such as teachers, workers, academics, retired people, students, civil servants, military-security personnel, and health workers. For example, an application considered functional for a civil servant may not be considered functional for a worker, or an application considered useful for an engineer may not be beneficial for a retired person. It is seen that the way men and women, working and retired, young and old, react to or perceive the same situation changes.

5.2 Rationale and Importance of the Research

It is seen that the functional perceptions of the participants from the social service areas related to AI and robot technology are mostly concentrated in the field of health care. According to this view, temporal and spatial barriers will be eliminated while people receive health services, and everyone will be able to access better quality health care equally. In addition, the participants think that errors caused by human doctors, nurses or other health workers can be reduced and that artificial intelligence and robots can make more accurate analyzes, especially at the point of diagnosis and treatment. Previous studies showed that AI systems achieved 99% success in diagnosis and treatment and saved patients from diagnostic operations (Ford, 2020; Bioethics, 2018). Participants see the technology in question as a helper for human workers in health care. In addition, it should be used as an assistive technology where a human touch is important, and this technology will be more functional when it cooperates with humans. When evaluated within the scope of social function perception, it could eliminate the time and place limit in health care, reduce errors caused by healthcare workers, and make more accurate determinations at the point of diagnosis and treatment. And explains why the use of this technology in these areas is perceived as functional.

According to other findings obtained from the interviews, it was seen that it was perceived as functional in service areas such as construction, industry and military. The basis of such evaluation is that it will save people from environments that threaten human health and life safety, in other words, it will reduce the loss of life. In addition, it will eliminate the risks arising from the working conditions in such service environments and create more humane working environments for people. Another finding is the thought that AI and robots will be functional in socio-cultural environments. The basis of this idea is that there will be no human-induced problems and that more hygienic, better quality and faster service will be provided. Since AI and robot technology will provide faster, more effective and quality service compared to humans, it is perceived as functional in many service areas. This detection is consistent with research findings (Arras & Cerqui, 2005) that robots are expected to do the job efficiently and reliably.

It was concluded that the participants wanted this technology to be included in their lives as an assistant rather than a friend. In the assistant position, it is expected that this technology will perform the tasks that individuals set themselves, both in business life and in daily life. Participants believe that AI and robots would be more beneficial when under their control. It is desired to be responsible for people's decisions and to see artificial intelligence as a technology that will help them (Özdemir, 2019) and robots are wanted to be seen as a tool rather than a friend (Arras & Cerqui, 2005; de Graaf & Allouch, 2016; Dautenhahn et al., 2005) which is consistent with research results. Some of the participants do not want to share such a situation with robots because artificial intelligence and robot technology will be insufficient to meet social and emotional needs. Participants thought that artificial intelligence and robots would be beneficial when they performed certain tasks efficiently and reliably, like tools. In addition, this technology's functionality varies according to individuals' needs and expectations. It is seen that some of the participants evaluate it as functional when artificial intelligence and robots are in the friend position, as it will reduce loneliness in society. There is information in the literature (Reppou & Karagiannis, 2015; Broadbent, Stafford, & MacDonald, 2009) that digital technologies such as humanoid-looking robots provide a feeling of friendship and reduce loneliness.

The participants perceive it as functional because they think that AI and robotic technology will make individuals' lives easier. According to this view, it has been determined that when artificial intelligence and robot technology do financial, housework and official correspondence, it is thought to make people's lives easier. A study conducted in the literature (Bugmann & Copleston, 2011) determined that robots that save people from laborious work were accepted at a rate of 71%, and the result obtained here supports this finding. Participants think that artificial intelligence is useful in tracking investments and similar transactions. This shows that the participants trust AI and robotic systems in this field. It has been determined that robot lawyers will be preferred to human lawyers in legal proceedings because they will be able to get information from robot lawyers whenever they want and they will not have to pay for it. In the literature (Epstein, 2015), it is seen that robot lawyers are used to help individuals with limited financial means, gaining popularity in this sense. In addition, artificial intelligence systems are perceived as functional because it is thought that the robot lawyer will find solutions to legal problems faster and more accurately than the human lawyer. In the literature (LawGeex, 2018) in this regard, it has been experienced that artificial intelligence makes very fast and highly accurate decisions in legal business and transactions. In addition, it has been determined that the participants have to deal with paperwork for a large part of their working lives and therefore spend less time on intellectual work related to their profession. The said technology is demanded, especially to do the paperwork. Thus, people will be able to take time for themselves. In addition, it has been determined that the time they spend on paperwork is considered functional as it will allow them to focus on academic studies related to their profession. In this case, when AI and robot technology take the unnecessary workload off individuals, it will save them time and allow them to develop professionally.

Within the scope of the research, it was seen that the participants had the idea that artificial intelligence and robot technology would not adversely affect their business lives; on the contrary, they would allow people to develop themselves professionally. The technology in question is perceived as functional, as it will reduce the loss of time and money in business life and eliminate the limitations of space and time. In addition, the participants stated that since artificial intelligence systems are programmed, they can make the controls in business life easier thanks to the technology in question. It is thought that when there is a missing or wrong situation related to their work, they will be warned by the system, which will allow them to do better quality work. In addition, it was determined that the participants wanted this technology to be in a supporting role while they were doing their jobs. It has also been determined that they do not want the said technology to be at the forefront of their work. Participants work in occupations where human interaction is high. Therefore, they stated that AI and robot systems cannot establish this interaction. However, in studies (Smith & Neupane, 2018), it has been pointed out that its deep learning and natural language processing features will cause job losses in many professions, including teaching.

It has been determined that a participant in the employer position thinks that this technology will be positive for him and negative for the employee regarding the effect of this technology on business life. In addition, it was observed that one of the participants, who was a banker, thought that it would

negatively affect their business life. Based on the findings, it is seen that there is a thought that people in technical or financial affairs will negatively affect their profession and that it will positively affect professions where social relations are predominant. At this point, it has been determined that people differ in opinion according to the position they are in; in other words, the participants' perceptions of function differ. This finding clarifies the conclusion that the perception of function, which emerged in the quantitative findings of the research, differs according to variables such as gender, age, education level, and occupation.

It has been concluded that the participants have a two-dimensional view that this technology will directly contribute to the welfare of societies and will have a positive contribution when used correctly. Regarding its positive contribution to the welfare of society, it is thought that it will provide quality service, especially with the spread of social services and the institutions where these services are provided. In addition, it will contribute to everyone getting the same service by avoiding the obstacles experienced in some cases in service procurement. Quality and a fast turnaround will likely be made according to everyone's needs. In this respect, it was seen that the participants had a positive perception of function. In addition, it detected that the participants thought this technology would increase the quality of human life and allow people to live like masters. The main issue here is that the participants perceive this technology as a system that serves them. It has been determined that they do not see it as a system that competes with itself. Again, in this context, it was seen that some of the participants thought that artificial intelligence and robot systems would reduce some psychological diseases in society. In other words, these systems will eliminate some psychological problems in society and create a mentally healthier society. It is perceived as functional because it will contribute to the solution of diseases in a short time and thus create a physically healthier society. One of the participants stated that when used in agriculture, it will make a positive contribution to welfare as it will allow healthier products to be purchased and everyone to have access to all kinds of food. Looking at the relevant literature (OECD, 2019), it is seen that these systems will contribute to the welfare of societies from health to agriculture, and for this purpose, they are used in line with the goal of sustainable development.

It was observed that some of the participants positively welcomed artificial intelligence and robots to do all the work if there would be no financial loss, as it would allow them to devote more time to themselves. It was seen that the majority of the participants perceived this technology as functional when it did some but not all the work. In such a situation, they stated that they would find themselves in a necessary state of development so that these systems would not overtake them. In addition, in such a situation, the participants stated that they could spare time for themselves and spend more time with their family and friends. It has been observed that they are thought to be able to devote time to their favorite activities. It is concluded that the commonality between those who want artificial intelligence and robots to do all the work and those who want to do some of the work will allow them to devote more time to themselves and their activities. Some participants completely reject such a situation and it is seen that they think that mental and physical health problems may arise if all the work is done. Their justification is that their purpose in life will be taken away, they will fall into a gap, they will begin to question their reasons for being, and their lives will become routine. They stated that even if they spare time for themselves, they do not know how or with what to fill this time. They stated that doing the things they love all the time would bore them after a while. It is seen that while one group perceives the same situation as having a positive function, the other group perceives it as dysfunctional. In other words, it has been determined that there is a difference in the perception of function.

In the qualitative stage of the study, it is seen that the participants with different demographic characteristics perceive the technology as functional, but their functional perceptions also differ in some cases; in other words, the function perceptions of the participants differ according to some variables. Some of the participants stated that the use of artificial intelligence and robot technology in the military and security fields will have a positive function, while others stated that it will have a negative function. The reasons given by those who state that it has a positive function are that it can be more effective in the defense of the country, detect criminals immediately, and reduce the loss of military life. The reasons given by those who state that they have a negative function were that the defense system can be destroyed by a cyber attack, it has the potential to increase war and violence, and it can be used for mass deaths. A participant working in the military field stated that the use of

this technology in the field of defense would be risky, while a retired participant stated that it would be useful in the defense of the country. It clarifies the finding that the perception of social function, which was revealed in the quantitative part of the research, differs according to the occupational variable. Another finding in this context is that different evaluations were made on the effects of artificial intelligence and robots on participants' working lives. A banker participant stated that artificial intelligence would negatively affect his business life and cause him to be unemployed, while a teacher participant stated that it would affect her business life positively. This finding in the study can be explained by Merton's findings, which do not agree with the assumption of universal functionalism (Chaudhry & Venugopal, 2004), that some elements or structures in society may not always have a positive function and some may have dysfunction (Merton, 1968). Similarly, when the answers given to the other questions asked to reveal the perception of function in the qualitative study are examined, some state that this technology would be functional in the assistant position, while others state that it would be functional in the friend position. Participants with different characteristics stated that their personal lives would be easier when legal, financial, health, paperwork and household tasks were done by this technology. Therefore, it was observed that they had a positive perception of function. At this point, the differences in the jobs that tire people out in their lives and that they do not want to do affect their perceptions of function and cause different answers to the same question. In summary, the data obtained in the qualitative and quantitative studies (results on differences in functional perception among the participants) can be evaluated according to Merton's functional integrity assumption. In this context, it is consistent with the determination that what is functional for a group cannot be functional for the whole (Poloma, 1996).

6 Conclusion and Recommendations

The use of artificial intelligence and robots to respond to the needs or expectations of individuals and society and be thought to be useful is defined as a positive perception of function. It is seen that the function perceptions of the participants towards this technology are the same in some subjects and differ in others. The obvious functions of artificial intelligence and robotics have positive functions for some but are dysfunctional for others. In other words, there have been differences in the perception of positive functions and dysfunctions. The differences in the opinions of the participants about artificial intelligence and robot technology are because this subject is handled in different ways in their minds. It should be noted that the perception of function analyzed here is discussed only in line with the answers given by the participants. With the findings obtained in the qualitative and quantitative studies, the limitations of the scope of the research have been tried to be expanded. In this context, the results obtained from the data are summarized below:

1. Subjective reality emerged in the participants' perceptions of artificial intelligence and robot technology.
2. According to the position, expectations and needs of the participants, their functional perception towards artificial intelligence and robot technology differ.
3. The positive functional perceptions of the participants towards artificial intelligence and robot technology show the acceptance areas of this technology.
4. Functional perception variables of participants towards artificial intelligence and robotics are the fact that they do certain difficult tasks and cause loss of time in daily life and business life, which allows them to spare time and makes life easier for them.
5. Participants perceive the technology in question more as a tool that does some work safely and efficiently or as an assistant.
6. It is perceived as a useful technology in terms of reducing the mental and physical burden of home management or household chores.
7. The functional perceptions of the participants, among the service areas related to artificial intelligence and robot technology, are mostly concentrated in the field of health care.
8. Participants think that artificial intelligence and robot technology will provide faster, more effective and quality services in many service areas compared to humans.

6.1 Rationale and Importance of the Research

1. The use of this technology can be expanded in the fields of health and socio-cultural services, which are more functional. Thus, responding to the people's expectations should ensure that the adaptation gap is not experienced and that their positive perceptions towards this technology should be increased.
2. Since people want artificial intelligence and robot systems to be assistive technologies that do not prevent the human factor, care should be taken to integrate them into life as assistive technologies that cooperate with humans and to expand their use in this way.
3. Importance should be given to the development of artificial intelligence and robot technology in line with the needs and expectations of people.

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