



Article Info/Makale Bilgisi

Received/Geliş: 01.07.2024 Accepted/Kabul: 04.11.2024

DOI: 10.30794/pausbed.1508772

Research Article/Araştırma Makalesi

Saraç, H. (2024). "What Skills Do Employers Want From Recent College Graduates?", *Pamukkale University Journal of Social Sciences Institute*, issue 65, pp. 109-143.

WHAT SKILLS DO EMPLOYERS WANT FROM RECENT COLLEGE GRADUATES?

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Abstract

Currently, it is not enough for university graduates to acquire only occupation-specific academic knowledge to find a job. Graduates are also expected to possess an additional set of skills called employability skills. In this study, job vacancies were analyzed to determine the skills employers want from new graduates. In this study, 178 job posts for new graduates on an online job search platform (Kariyer.net) were analyzed using content analysis. According to the findings of the study, fewer hard skills and more soft skills were demanded by recent university graduates. The most demanded skills for both associate degree and bachelor's degree graduates were skills in social and communication groups. When examined in detail, the highest-demanded soft skills include "strong communication skills," "predisposition to teamwork," "planning and organization skills," "effective written and oral communication skills." In addition, "mastery of MS Office applications, knowledge of foreign languages and "knowledge of computer programs related to the field" are among the technical skills that graduates require. This research is expected to guide new graduates in terms of which skills they should develop and educational institutions in terms of updating their curricula in line with the demand for skills.

Keywords: *Soft Skills, Hard Skills, Youth Employment, Youth Unemployment, University Graduate.*

İŞLETMELER ÜNİVERSİTEDEN YENİ MEZUN OLANLARDAN HANGİ BECERİLERİ İSTİYOR?

Öz

Günümüzde üniversiteden yeni mezunların sadece mesleğe özgü akademik bilgileri kazanmaları iş bulmaları için yeterli olmamaktadır. Mezunlardan bunların yanı sıra istihdam edilebilirlik becerileri olarak adlandırılan ek bir dizi becerilere sahip olmaları beklenmektedir. Bu çalışmada işverenlerin yeni mezunlardan hangi becerileri istediğini tespit etmek amacıyla açık iş ilanları analiz edilmiştir. Çalışmada çevrimiçi iş arama platformu (kariyer.net) üzerinden yeni mezunlara yönelik 178 açık iş ilanı içerik analizi ile incelenmiştir. Çalışmanın bulgularına göre üniversiteden yeni mezun olanlardan daha az sert beceri ve daha fazla yumuşak beceri talep edildiği tespit edilmiştir. Hem ön lisans hem de lisans düzeyindeki mezunlar için en fazla talep edilen beceriler sosyal ve iletişim grubunda yer alan becerilerdir. Ayrıntılı olarak incelendiğinde en yüksek talep edilen yumuşak beceriler arasında "güçlü iletişim becerisi", "takım çalışmasına yatkınlık", "planlama ve organizasyon becerisi", "etkili yazılı ve sözlü iletişim becerisi" yer almaktadır. Ayrıca mezunlardan talep edilen teknik beceriler arasında "MS Office uygulamalarına hâkim olma", "yabancı dil bilgisine sahip olma", "alanıyla ilişkili bilgisayar programı bilme becerisi" talep edilmektedir. Araştırma yeni mezunların hangi becerilerini geliştirmesi gerektiği noktasında, eğitim kurumlarına ise becerileri talebi doğrultusunda eğitim müfredatını güncellemesi açısından yol gösterici olması beklenmektedir.

Anahtar kelimeler: *Yumuşak Beceriler, Sert Beceriler, Genç İstihdamı, Genç İşsizliği, Üniversite Mezunları.*

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1. INTRODUCTION

Today, competition in the labor market is increasing. To increase competitiveness, firms are attempting to fill job vacancies with qualified university graduates. Surveys conducted with employers show that the occupation-specific skills acquired by new graduates are no longer sufficient to meet the needs of the labor market (OECD, 2013:246). At this point, graduates' employability is becoming a serious issue for higher education institutions. Today, increased competition has raised concerns regarding graduates' employability. Therefore, the problems experienced in the employability of graduates make universities the center of discussion. Understanding what skills employers demand can facilitate the employment of new graduates. Understanding the skills required by graduates can enable universities to achieve their goals by providing education accordingly (McMurray, 2016:112). The reasons for the inability of higher education institutions to provide employability skills are stated to be poor due to learning environment, lack of personnel with industrial experience and over-reliance on theoretical learning (Okolie et al., 2020:294).

Graduate employability is an important indicator for higher education. Higher education institutions play a vital role in social and cultural development. They also play important roles in economic growth. Thus, higher education institutions provide significant private and public benefits (HEFCE, 2011:4). To increase this benefit, it is important to ensure university-industry cooperation. Increasing the competitiveness of businesses can be achieved by training talented and competent graduates in the skills demanded by the labor market (Pank et al., 2019:63). Today, it is not sufficient for graduates to have only a good diploma. Graduates also need to have the skill sets demanded by the labor market (Okolie et al., 2020:295). In recent years, there has been concern that graduates with good academic qualifications do not have the right combination of skills and personality traits that employers demand. Graduates who do not have the right combination of skills cannot be employed, leading to an increase in the number of unemployed graduates (Daud et al., 2011:549).

Employers' preferences for graduates are related to their possession of certain skills. These include the ability to cope with uncertainty, work under stress, planning skills, communication skills, teamwork, IT skills, readiness to explore and create opportunities, networking, self-management skills and willingness to learn. In addition, employers prefer people who can contribute to a firm's success (Raybould and Sheedy, 2005:259).

With routine work being done by computers, the types of skills demanded by workers in the US economy have changed. Qualifications such as physical strength and machine mastery have lost their importance. Businesses have started to demand technical skills, such as computer and Internet use. Non-technical skills include problem solving, being part of a team, taking responsibility, communicating effectively with customers and creative thinking. Businesses assume that they develop these skills by increasing their educational levels. Companies that cannot find qualified employees rely on education to fill this skills gap. However, the inability to reduce the gap between the skills demanded and the skills available reduces the ability of US companies to compete. Since not all skills demanded by employers require university education, the skills gap is tried to be met through courses, training programs developed by companies and apprenticeship programs (Noe and Hollenbeck, 2007: 33-34).

Employers are arguably the primary sources for determining the competencies that are most needed in the workplace. Consulting employers' views can help universities formulate strategies for developing students and increasing their employability (Pank et al., 2019:60).

Today, the youth unemployment rate (17.4%) is nearly double that of the overall rate (9.4%). The unemployment rate among young university graduates (25.1%) constitutes the highest unemployment rate (TÜİK, 2023). A decline in the unemployment rate of university graduates is expected to contribute significantly to the decline in the overall unemployment rate. In addition, young university graduates are very important to the human capital of the country. Acquiring skills demanded by employers can contribute to a decrease in the unemployment rate among young university graduates. Academic studies conducted for this purpose are important. Currently, there are limited studies on the skills demanded by some occupational groups. However, the lack of academic studies on the Turkish labor market covering all young university graduates constitutes the originality of this study.

This study aimed to determine the skills required by employers for the recruitment of new graduates. It is important for new university graduates to know the skills demanded by employers in order to close the skills gap. In addition, determining the skills demanded by employers will also guide educational institutions in organizing their curricula.

This study seeks answers to the following questions:

- 1) What are the hard skills demanded of young university graduates?
- 2) What soft skills are demanded from young people fresh out of university?
- 3) What is the distribution of hard and soft skills demanded from young people who have recently graduated from university?
- 4) Do the skills demanded differ between the educational levels of university graduates?

2. LITERATURE REVIEW

Since the 1990s, the role of human resources has increased and this trend continues. Organizations cannot achieve the desired results with old strategies and face the need to change their strategies rapidly. Today, businesses take a strategic approach to human resources to gain competitive advantage. Businesses no longer consider human resources a cost element. In addition, it is stated that the period when only administrative activities were dealt with, various documents were prepared and a payroll was made. Businesses adopt strategic human resource management approaches, such as selective recruitment, training, motivating employees and involving them in decision-making processes, teamwork and performance-oriented rewards (Anca-loana, 2013:1520). Human resource management is designed to maximize organizational integration, employee commitment, flexibility and job quality (Guest, 1987:503). Human resource management is important for businesses to be successful and sustain their existence. In addition, it plays an important role in determining the skills to be demanded in open job positions, selecting appropriate candidates, ensuring equal employment opportunities, complying with legislation and preventing discriminatory practices (Vasile and Zhan, 2020:34).

One of the indispensable functions of human resource management is the recruitment and selection processes (Karim et al., 2021:18). Recruitment and selection processes are very important for businesses, as they help find the most suitable candidates for open job positions in an organization. With the recruitment and selection processes, it becomes easier for businesses to achieve their strategic goals and objectives by making the most accurate use of the workforce (Gomathy et al., 2022:1). It is possible for an organization to achieve its goals, create a healthy working environment and be sustainable with the correct operation of recruitment processes. This process ensures coordination between the human resources department and managers for each position. Today, an increase in competition leads to the necessity of meeting individuals with the skills demanded by businesses as soon as possible. At this point, the survival and development of businesses is possible by placing the right people in the right positions (Simion et al., 2021:25). Improving an organization's recruitment and selection procedures and hiring the right candidates will increase employee satisfaction and productivity (Stephen et al., 2019:188).

In the 1990s, the field of human resource management was criticized for lacking a coherent theoretical framework. To fill this gap, Wright and McMahan first examined the theoretical foundations of this field. Wright and McMahan mentioned the existence of six theories (behavioral perspective, cybernetic models, agency/transaction cost theory, resource-based view of the firm, power/resource dependency models and institutional theory) to understand the determinants of strategic and non-strategic human resource management (1992:295). In the following years, the dominant theories in the field have changed. In the 1990s, sociology-based organizational theories influenced the field. In the 2000s, the dominant theories in the field were human capital theory from the economics discipline and the resource-based view from the strategic management discipline. The most influential theories in the field of HRM are the resource-based view and human capital theory (Bağış et al., 2019:803). Although strategic human resource management does not arise directly from the resource-based view, it has a significant impact on development. In the strategy literature, it is stated that the resource-based

view shifts the emphasis from external resources to internal resources (Wright et al., 2001:702). In almost all strategic HRM studies, the resource-based view is considered the main paradigm (Nyberg et al., 2014:319). According to the resource-based view, firms do not only consist of equipment and stock. In fact, it states that human resources are the most important asset and provide a competitive advantage to the firm (O'Driscoll et al., 2000:188). According to the resource-based view, resources include capabilities, knowledge, processes and values. These resources are assets of firms and are difficult to imitate. Differences in firms' resources explain differences in firm performance (Barney, 1991, 1995). It has been determined that the resource-based view theory is the most widely used theory in studies on skills (Marin-Zapata et al., 2022:978).

Employability skills are defined as the ability to access and sustain a job (Harvey, 2001). While the concept of employability was vague before the 2000s, in recent years it has been frequently used in studies in many disciplines. Today, employability has become so important that it is one of the four elements of the European Employment Strategy (Llinares et al., 2016:961). Numerous skill clusters related to employability (general skills, vocational skills, qualifications, etc.) have been established in the literature (Tymon, 2013, p.843). Although there is no clear consensus on skill classification, several studies have been conducted on this subject. Becker conducted the first study to distinguish skill types. In this study, skills were divided into two classes: general and special (Becker, 1964). According to the Secretary's Commission on Acquiring Necessary Skills (SCANS) report, three basic skill sets were identified. These are basic abilities (reading, writing and verbal skills), cognitive abilities (problem solving, reasoning and innovation) and personal characteristics (ethics, accountability and self-worth). The five competencies are resource management, interpersonal skills, knowledge, system understanding and technology (SCANS, 1991). Abraham and Karns (2009) identified the top 10 competencies most demanded by US businesses. These are communication skills, problem solving, result orientation, interpersonal skills, leadership skills, customer orientation, flexible/adaptability, teamwork, reliability and quality orientation. Andrews and Higson (2008) evaluated the employability skills of graduates in three skill classes: hard skills, soft skills and work experience. Rosenberg et al. (2012) categorized basic employability skills into eight classes. These are basic literacy and numeracy skills, critical thinking skills, management skills, leadership skills, interpersonal skills, information technology skills, work ethics disposition and systematic thinking skills. Olivier et al. (2014) categorize the skills needed by employers into six classes. These include basic skills, adaptability, teamwork, interpersonal skills, IT skills, employability skills and technical domain-specific skills. Suleman (2018) stated that there is consensus in the literature that the employability skill set includes relational skills (communication, teamwork), technical skills and cognitive skills (analytical, critical and learning skills). Colombo et al. (2019) divided the skill classification into two classes: hard and soft. Hard skills are grouped into two classes: digital and nondigital. Soft skills were grouped into four classes: cognitive skills, thinking skills, social skills, attitudes and values towards work. ESCO provides a comprehensive list of knowledge, skills and competencies relevant to the European labor market. In a significant number of studies on skill classification, skills are divided into two classes: soft and hard (Carvalho and Rabechini Junior, 2015; Hendarman and Cantner, 2018; Osagie et al., 2019; Wu et al., 2015). As can be seen, skill classification is defined in different ways in various academic studies.

Before moving on to the concepts of soft and hard skills, it is appropriate to define the concept of skill. The level of competence of individuals in fulfilling a certain task is called a skill. This can also be expressed as the ability to perform a job well (Daud et al., 2011:550). According to another definition, skill is "the ability to use one's knowledge effectively and easily in practice or performance" (Merriam Webster n.d.). Skills develop through training, techniques and experiences. Skill involves a combination of cognitive and behavioral components that interact to effectively complete a given task (Lamri and Lubart, 2023:3). Skills can be divided into two classes: hard and soft (Colombo et al. 2019).

Hard skills refer to performing a specific job using equipment, such as driving a car, programming a computer and welding. This skill refers to technical, concrete and measurable abilities (Lyu and Liu, 2021). Soft skills are defined using more than 119 labels (Marle et al., 2022). Despite these different labels, there is a general consensus that soft skills are multidimensional (Ahmad et al., 2021). Stewart et al. (2016) define soft skills as "non-technical competencies associated with one's personality, attitude and ability to interact effectively with others (i.e., to be optimally employable)". Emotional intelligence, communication, teamwork, creativity, problem solving and stress management are examples of soft skills (Martins et al., 2020).

Hard skills (accounting, foreign language skills, etc.) can be trained and measured relatively easily as they are closely related to knowledge. Soft skills, however, are defined as 'a stable, long-term, learned predisposition to respond to certain things in a certain way' (Statt, 1998:10). Unlike hard skills, soft skills are difficult to measure. This is due to the fact that there is no objective way to test the skills themselves. The measurement of soft skills is an interactive process that depends on the context. The difficulty in measuring soft skills stems from the lack of a measurement tool that objectively assesses workplace behavior. Observation was the most appropriate method for this task. However, this method is too expensive to be applied on large samples (Balcar, 2016: 454-456).

With technological advances, hard skills are predicted to be more likely to lose relevance than soft skills. While hard skills tend to fade over time, soft skills tend to maintain their values (Deming and Noray, 2020). The demand for soft skills in the US labor market is increasing daily. Between 1980 and 2012, the share of soft skill-intensive occupations increased by 11.8%. In addition, wages in soft-skill-intensive occupations have increased. On the other hand, employment in occupations that require high math skills but low soft skills has decreased (Deming, 2017:1599). Employees with high soft skills are expected to require little or no training to maintain these skills. These employees can utilize this time by adding new skills to their portfolios and increasing their productivity (Schultheiss and Backes-Gellner, 2023:258).

One reason for the growing importance of soft skills in the labor market is that computers are still insufficient to replace human interaction. Reading and reacting to others' signals are unconscious processes. These skills have been developed in humans over thousands of years. Through the interaction of people in the workplace, employees can capitalize on each other's strengths, flexibly adapt to changing conditions and work as teams. Such non-routine interactions give people an advantage over machines (Deming, 2017:1634). However, it is currently difficult to automate social interaction (Autor, 2015).

Today, individuals need a range of skill sets to be successful. The ability of individuals to discover and develop and use their skills is considered an important part of their careers. Career success is associated with the acquisition and maintenance of soft and hard skills. Employers prefer candidates with the right combination of these two skill sets (Lamri and Lubart, 2023:1).

3. METHOD

In this section, the data collection, classification and demographic information are presented. Data obtained from open job posts on online job search sites (Kariyer.net) in Türkiye were used in this study. Content analysis was conducted to evaluate the data collected in this study. Content analysis is a systematic quantification of text expressions to make them measurable (Wimmer and Dominick, 2000:135-136). Content analysis is a flexible research method used in library and information science studies, with varying research goals and objectives. Content analysis can be applied in qualitative, quantitative and sometimes mixed-methods research frameworks. It uses a variety of analytical techniques to draw conclusions and contextualize them (White and Marsh, 2006:22). Content analysis is a research tool that identifies specific words and concepts in texts and makes inferences about the messages, target audience and culture and time that are part of them. Content analysis can be used in both quantitative and qualitative research (Zavyalova, 2022).

The study population was a set of bounded and accessible phenomena that met certain criteria to form the sample in a study (Arias-Gómez et al., 2016:201). Sampling is the selection of a subset of a target population. Since it was not possible for the entire population to participate in the research, a smaller group was systematically selected for data collection. In this way, data can be collected faster and at a lower cost, without reaching every member of the population (Turner, 2020:8). The chosen sampling method is of great importance for the reliability of the research results (Hossan et al., 2023:209). Sampling methods were divided into two groups. The first is probability or random sampling and the second is nonprobability sampling. The difference between these two is due to the statistical methods used to select the subjects (Arias-Gómez et al., 2016:201).

The population of the study consists of job advertisements published on online job search sites in Türkiye between 20.02.2024 and 26.04.2024, covering individuals who have recently graduated from university. Owing to the large number of online job search sites in Türkiye, time constraints and technical reasons (such as different

advertisement formats and inability to sort out advertisements that meet the desired criteria), it is not possible to reach all job openings. Owing to these limitations, only job advertisements published on a single online job search site (kariyer.net) were used as the basis. In this context, the study sample consisted of 178 job posts. In this study, all 178 job posts on the online job search site specified in the reference date range and in accordance with the specified criteria were subjected to content analysis. The study is limited to a single online job search site (kariyer.net) in terms of job search platform, 20.02.2024-26.04.2024 in terms of time, associate and bachelor's degree graduates in terms of education and those with no experience in terms of experience.

3.1.Data Collection

There are various methods for identifying the skills employers demand from new graduates. These can be categorized as determining recruitment criteria by asking questions to employers or graduates, determining employer perceptions, interviewing stakeholders about the quality of graduates and analyzing job advertisements (Suleman, 2018). In this study, data were collected through an analysis of job advertisements.

This study included a content analysis of 178 job advertisements in Kariyer. net database. The most important reason for choosing the Kariyer.net database is that it contains data on the limitations of the study. In addition, the job description information requested on the selected online job search site is included in detail. Another important reason is that this website had the highest number of job posts at the time of this study. However, the different formats of job postings on different online job search sites led to the use of a single online job search site. Job vacancies are likely to be published on more than one online platform. As it would be a lengthy process to check for duplicate posts and against the risk of error, a single online job platform (kariyer.net) was used. Job vacancies for new graduates cover various industries in various provinces. While selecting job advertisements, certain restrictions were imposed according to the purpose of the research. In the selected job posts, the position level was restricted to new starters, the working style was restricted to full time, the education level was restricted to higher education and the duration of experience was restricted to inexperienced postings. Thus, we aimed to obtain advertisements suitable for the purpose of this research. Repeated posts within the reference period, posts requiring high school education and above and internal posts were excluded from the study. Advertisements published in English were included in this study. The data obtained were coded individually according to systematization. The advertisements included those published between 20.02.2024 and 26.04.2024. Job vacancies are expected to increase by the end of the winter. To reach the maximum number of job vacancies, the data collection phase was timed to coincide with the end of the winter. The time interval was limited to 20.02.2024 and 26.04.2024 because of the repetition of the same vacancies during the time period after the reference interval.

Content analysis was conducted manually and no content analysis software was used. Each job advertisement was recorded using a reference number and filed under the relevant variable. Manual data processing is more laborious than software processing; however, it is expected to yield better results owing to more expert intervention.

3.2.Classification of Data

Although many studies have been conducted on the classification of skill groups, there is no universal consensus (Tymon, 2013:843). When classifying the skills demanded in job vacancies, they are divided into two categories: "soft skills" and "hard skills." Hard skills are divided into two classes, digital and non-digital, similar to the classification made by Colombo et al. (2019). The classification of soft skills is based on the ESCO's transversal skills and competency classification. According to ESCO v1.1.2. classification system, transversal skills and qualifications, were divided into six classes (ESCO, 2024). To align soft skills with the skills demanded by the labor market, the study grouped skills into three skill classes. These are self-management and intellectual, social and communication skills. In the ESCO classification, actions related to individuals' attitudes and behaviors (loyalty, reliability, confidentiality, etc.) are included in social and communication skills classes. In this study, similar to the ESCO classification, actions towards attitudes and behaviors were evaluated in social and communication skills classes. Figure 1 illustrates the skill groups used in this study.

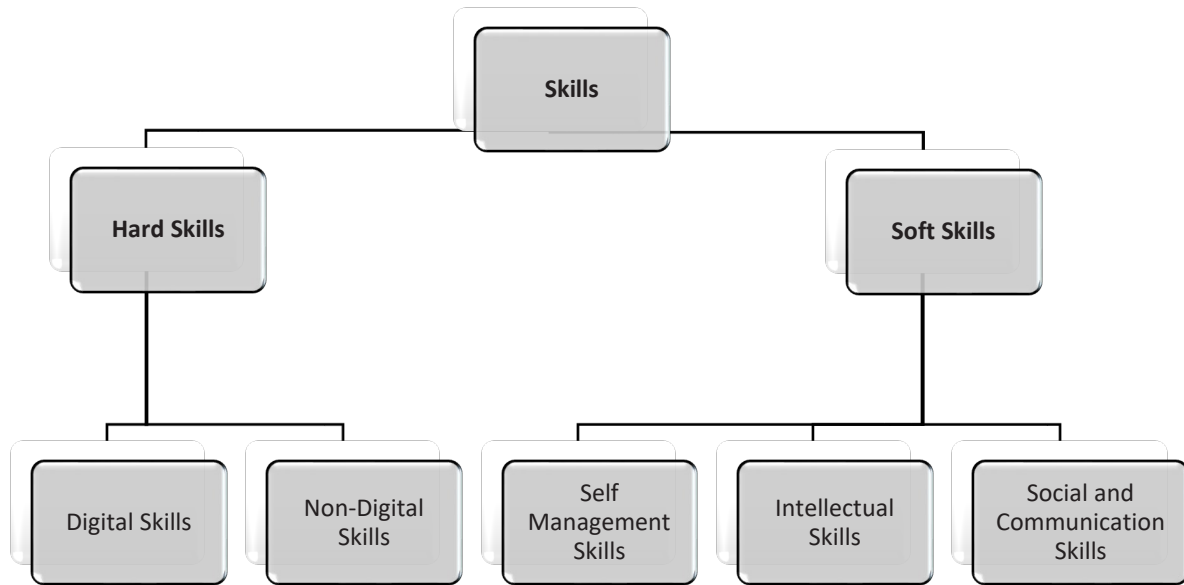


Figure 1: Skill Set Used in the Study

While classifying soft skills, the skills requested in job vacancies were grouped using the ESCO keyword classification as a reference. Table 1 shows the keyword groups for transversal skills and competencies, according to the ESCO dataset.

Table 1: Keywords for Cross-Skills and Competencies by ESCO v1.1.2. Dataset

Skill and Competency Classification	Subskill and Competency Classification	Examples of Skills and Competencies
Self-Management Skills	Working Efficiently	Paying attention to details, keeping your concentration for a long time, managing quality, managing time, fulfilling commitments, working efficiently, working independently
	Identifying a Proactive Approach	Feeling responsible, making decisions, managing personal professional development, showing commitment (enjoyment of work, motivation), showing determination, taking initiative
	Maintaining a Positive Attitude	Approaching challenges positively, coping with stress, dealing with uncertainty, managing frustration, giving confidence
	Demonstrating a Willingness to Learn	Accepting criticism, adapting to change, showing curiosity, showing willingness to learn, being open to new ideas
Intellectual Skills	Processing information, ideas and concepts	Memorizing information, thinking analytically, thinking critically, thinking holistically, thinking fast
	Planning and Organizing	Organize (information, objects and resources), plan
	Dealing with Problems	Defining problems, solving problems
	Thinking Creatively and Innovatively	Thinking Creatively and Innovatively

Social and Communication Skills	Communicating	Addressing an audience, managing a discussion, compromising and negotiating, promoting (ideas, products, services), communicating facts (advising, helping), resolving conflicts
	Supporting Others	Supporting Others
	Collaborating in Teams and Networks	Building networks (establishing collaborative relationships), demonstrating intercultural competence (establishing close relationships with people from different cultures, respecting cultural preferences, etc.), working in teams
	Leading Others	Building team spirit, delegating responsibilities (passing on verbal instructions), leading others, motivating others.
	Complying with the Code of Ethical Conduct	Comply with regulations, show loyalty, be trustworthy, respect the obligation of confidentiality

In this study, the soft skills requested for job vacancies were categorized using keywords. Technical skills are categorized into two categories as “digital skills” and “non-digital skills” according to whether digital skills are requested or not.

3.3.Data Information

The occupations demanded in the 178 job vacancies analyzed and the distribution of job vacancies by province are shown in Tables 2 and 3.

Table 2: Distribution of Open Jobs by Occupational Groups

Occupational Groups	Reviewed Job Postings	Distribution of Job Postings
STEM	58	32,6%
Business	41	23,0%
Sales and Marketing	61	34,3%
BIT	7	3,9%
Other (Health, Education, Translation)	11	6,2%
Total	178	100,0%

Of the job vacancies, 34.3% were in sales and marketing occupations and 32.6% were in Science, Technology, Engineering and Mathematics (STEM) occupations. These occupational groups were followed by business administration (23.0 %) and health, education and interpretation (6.2 %). The share of Information and Communication Technology (ICT)-related occupational groups was 3.9%.

Table 3: Distribution of Open Jobs by Province

Cities	Number Of Vacancies	Vacancy Job Rate (%)	Cities	Number Of Vacancies	Vacancy Job Rate (%)	Cities	Number Of Vacancies	Vacancy Job Rate (%)
Istanbul	86	48,6%	Adana	2	1,1%	Elazığ	1	0,6%
Bursa	11	6,2%	Konya	2	1,1%	Eskişehir	1	0,6%
Ankara	10	5,6%	Kütahya	2	1,1%	Isparta	1	0,6%
Antalya	10	5,6%	Mersin	2	1,1%	Malatya	1	0,6%
Kocaeli	9	5,1%	Samsun	2	1,1%	Manisa	1	0,6%
Gaziantep	6	3,4%	Tekirdağ	2	1,1%	Nevşehir	1	0,6%
Izmir	7	4,0%	Afyon	1	0,6%	Ordu	1	0,6%
Muğla	5	2,8%	Aydın	1	0,6%	Rize	1	0,6%
Kayseri	4	2,3%	Bilecik	1	0,6%	Şanlıurfa	1	0,6%
Diyarbakır	3	1,7%	Burdur	1	0,6%	Van	1	0,6%

Approximately half (48.6%) of the job advertisements analyzed were located in Istanbul. Bursa (6.2 %), followed by Ankara and Antalya (5.6 %). According to statistics on the number of enterprises announced by TurkStat, the highest number was in Istanbul (24.7%). This was followed by Ankara (7.3%), Izmir (6.0%), Antalya (4.3%) and Bursa (3.9%) (TÜİK, 2022). The presence of large-scale firms in these regions causes a concentration of open jobs in these regions.

4.RESULTS

4.1.Findings Related to Hard and Soft Skills

In this study, the hard skills demanded in open jobs were categorized into two classes: digital and nondigital skills. Information on the digital skills required for an open job is presented in Table 4.

Table 4: Digital Skills Demanded in Open Jobs

Digital Skills	Frequency of Job Advertisements	Rate of Demand for the Skills Specified in Job Postings (%)
Proficient in MS Office applications	96	%64
Knowing other computer programs related to the field	54	%36
<ul style="list-style-type: none"> • Autocad, Solidworks, 3dsMAX, CAD • To be able to install, maintain and support Microsoft and Lunix operating systems • To have knowledge about network management (Wan, Lan, TCP/IP, DHCP) • Provide application support to devices running on Windows CE, Android, IOS operating systems • Nebim V3, ERP, SAP, LOGO • Google Looker Studio, Powel BI, MS SQL • Other 	16 6 6 5 5 4 12	%11 %4 %4 %3 %3 %3 %8
Number and Rate of Digital Skills Demand	150	%84,3

As shown in Table 4, 150 digital skills were required for 178 job vacancies. The rate of digital skills demanded by job vacancies is 84.3%. In addition, in approximately half of the vacancies (53.9%), the ability to master MS Office programmes was requested. While 64% of the vacancies demanding digital skills demand MS Office Programs, 36% demand other computer programs related to the field. Among other computer programs related to the field, knowing Autocad, Solidworks, 3dsMAX and CAD programs ranked first with 11%. This is followed by knowledge about network management (Wan, Lan, TCP/IP, DHCP) with 4% and the ability to install, maintain and support Microsoft and Lunix operating systems with 4%.

With the widespread use of computers in the workplace, the demand for labor with computer skills has increased (Dickerson and Green, 2004). Progress in information technology (IT) has led to the creation of new job fields in both IT- and IT-using jobs. In addition to creating new job fields, existing jobs are redesigned by utilizing the power of IT. On the other hand, an analysis of 100 million online job posts worldwide since 2007 shows that approximately 80% of jobs require specific computer skills. It was also found that occupations with intensive computer use are growing faster (Peng, 2017:27).

Today, access to computers and the Internet is easier than ever before. Easier access to these technologies leads to the false perception that computer skills have become commonplace. It is accepted that the new generation, which is intertwined with technology, has mastered information technology and computer skills. However, studies have shown that this is not true (Hargittai, 2010:109). Easy access to computers and the internet does not mean that individuals have computer skills. These skills are usually acquired through intensive training (Yi and Davis, 2003:161).

Information on the non-digital skills demanded in open jobs is presented in Table 5.

Table 5: Non-Digital Skills Demanded in Open Jobs

Non-Digital Skills	Frequency of Job Advertisements	Rate of Demand for the Skills Specified in Job Postings (%)
Knowledge of Foreign Languages (75 English 3 Other languages)	78	53,1%
Knowledge of technical issues	24	16,3%
Having a certificate	23	15,6%
Having a Driver’s License	22	15,0%
Number and Rate of Non-Digital Skills Requested	147	%82,5

As seen in Table 5, 147 out of 178 vacancies demanded nondigital skills. The demand for nondigital skills in open jobs was 82.5%. The most demanded non-digital skills were foreign language skills (53.1 %). Foreign language skills are required in approximately one of every two job vacancies. It can be said that the demand for having a driver’s license, certificate, and knowledge of technical issues are close to each other.

A study conducted by the Malaysian employment agency on the reasons for not hiring graduates found that the reasons for not being hired included lack of foreign language skills (56%), poor social and etiquette skills (36%), high wage demand (32%), having qualifications unrelated to the job (30%), and being picky about the job (23%) (Daud et al., 2011:546). At this point, it can be said that foreign languages are among the most demanded non-digital technical skills.

Table 6 shows the ranking of skills demanded in open jobs according to the education level.

Table 6: Ranking of Skills Demanded in Open Jobs by Education Level

	Soft Skills	Associate’s	Bachelor’s
Social and Communication Skills (SCS)	Strong communication skills	1	1
	Teamwork aptitude	2	2
	Effective written and oral communication skills	3	10
	Compliance with flexible working hours	5	4
	Keeping up with the busy work schedule	15	5
	Customer-oriented	16	12
	Ability to persuade	17	13
	High representation skills	23	24
Intellectual Skills (IS)	Complying with ethical behavior and rules	26	18
	Ability to plan and organize	4	3
	Problem solving skills	6	11
	Analytical thinking skills	8	7
	Having creative and innovative thinking skills	10	25
	Having the ability to follow up work	14	6
	Having the ability to analyze	18	20
Research skills	22	*	

Self-Management Skills (SMS)	Being open to learning	7	15
	Being responsible	9	14
	Ability to work in a disciplined manner	11	16
	Attention to detail	12	9
	Result-oriented work	13	8
	Maintain concentration for a long time	19	21
	Having a career goal in the related field	20	22
	Maintaining a Positive Attitude	21	19
	Being friendly	24	23
	Ability to use time effectively	25	17

As can be seen in Table 6, the most important skills required at both associate's and bachelor's levels were strong communication skills and predisposition to teamwork, respectively. While the third most desired skill is effective written and oral communication at the associate's and bachelor's levels, planning and organizing skills come to the forefront at the bachelor's level. At both the associate and undergraduate levels, "Social and Communication Skills (SCS)" come to the forefront. This skill group was followed by "Intellectual Skills (IS)" and "Self-Management Skills (SMS)" groups.

While technical skills continue to underpin strong academic education, the development of soft skills is important for student employability. Employers have identified strong communication skills, working in teams, and having work experience as key soft skills needed to strengthen graduates' employability (McMurray, 2016:124). When graduates finish university education without the skills and qualifications employers expect, this creates an 'expectation gap.' As technical skills are mostly learned on the job, employers expect fewer technical skills from graduates. It is claimed that the main expectation gap occurs in non-technical skills (soft skills) (Low et al., 2016:36-38).

Archer and Davison found that communication was the main skill required by employers. However, employers' satisfaction with the quality of communication skills of graduates ranked sixteenth. The second and third most important skills for employers are teamwork and honesty, respectively. Employers' satisfaction with their graduates' teamwork and honesty skills ranked seventh and ninth, respectively. In a world where customer-oriented demand is increasing daily, graduates cannot meet employer expectations in terms of soft skills (Archer and Davison, 2008:8).

In the 178 open jobs, occupations were grouped into five occupational groups. Table 7 shows the occupational groups and skill rankings demanded in open jobs according to the occupational groups.

Table 7: Ranking of Skills Demanded in Open Jobs by Occupational Group

	Soft Skills	Total	Business	Sales and Marketing	IT	STEM	Other
Social and Communication Skills (SCS)	Strong communication skills	1	1	1	7	2	1
	Teamwork aptitude	2	3	2	6	1	2
	Reporting, effective written and verbal communication skills	4	5	4	3	6	5
	Compliance with flexible working hours	5	6	9	2	3	11
	Keeping up with the busy work schedule	9	15	8	12	9	10
	Customer-oriented	15	16	7	-	24	4
	Ability to persuade	16	17	12	-	14	20
	Having the ability to represent	23	20	23	16	23	9
	Complying with ethical behavior and rules	25	23	19	-	25	23
Intellectual Skills (IS)	Ability to plan and organize	3	2	3	8	4	18
	Analytical thinking skills	6	7	13	4	5	15
	Problem solving skills	7	10	10	5	7	12
	Has the ability to follow up work	10	12	11	1	17	16
	Having creative and innovative thinking skills	17	21	25	9	10	3
	Having the ability to analyze	19	19	21	-	16	19
	Research skills	26	24	26	14	20	-
Self-Management Skills (SMS)	Ability to be open to learning	8	9	6	10	8	8
	Ability to be responsible	11	13	5	-	11	-
	Result-oriented work	12	8	15	-	12	21
	Ability to pay attention to details	13	4	20	11	15	17
	Ability to work in a disciplined manner	14	11	14	-	13	-
	Ability to sustain a positive attitude	18	25	17	13	19	14
	Ability to use time effectively	20	18	18	15	22	22
	Maintain concentration for a long time	21	26	16	-	21	7
	Career aspirations in the related field	22	14	24	-	18	13
Being friendly	24	22	22	-	26	6	

Table 7 shows the soft skills demanded by graduates, according to their occupational groups. Strong communication skills are the most demanding skill for open jobs. This skill is followed by teamwork, planning and organizational skills, effective written and verbal communication skills, flexible working hours, analytical thinking skills, problem-solving skills, being open to learning, keeping up with busy work paces, and following up on work. In parallel with the findings, there are similar studies in which communication, problem solving, flexibility, teamwork, analytical thinking and openness to learning are among the most desired skills (Rosenberg et al., 2012:14; Chowdhury and Miah, 2016:63).

Although the order of importance varies, strong communication skills, planning and organizational skills and teamwork come to the fore in advertisements for business administration, sales, marketing and STEM jobs. Strong communication skills, teamwork and creative and innovative thinking come to the forefront in other occupational groups, where health, education and interpreting occupations are predominant. The IT occupational group differed from the other occupational groups. In this occupational group, the three most desired skills were the ability to follow up work, comply with flexible working hours and reporting and effective verbal and written communication.

Andrews and Higson emphasized the importance of business graduates' communication skills in increasing their employability capacity. In this study, it was stated that undergraduate graduates should be encouraged to create programs that will improve their communication skills. It was stated that a high level of business knowledge alone is insufficient and that graduates should have good oral communication skills to transfer this knowledge (Andrews and Higson, 2008:419). Another study examining four occupational categories (finance, management, human resources management and marketing) found that the most demanded soft skills were communication, organization, teamwork, interpersonal skills, motivational skills and analytical intelligence (Bennett, 2002:465). In another study, in which the most important skills required of new graduates were identified, 86% of employers stated that the most important skill was communication. Most employers reported that recent graduates were unable to effectively express themselves. This study stated that soft skills are of vital importance (Archer and Davison, 2008:6).

Table 8 shows the frequency and rate of use of the skills belonging to "Self-Management Skills," which are in the sub-group of soft skills, in job advertisements.

Table 8: Self-Management Skills (SMS) Demanded in Open Jobs

Self-Management Skills (SMS)	Frequency of Job Advertisements	Rate of Demand for the Skills Specified in Job Postings (%)
SMS1: Ability to pay attention to details	33	12,8%
SMS2: Ability to maintain concentration for a long time	16	6,2%
SMS3: Ability to work in a disciplined manner	29	11,2%
SMS4: Ability to be open to learning	48	18,6%
SMS5: Result-oriented work	34	13,2%
SMS6: Ability to sustain a positive attitude	18	7,0%
SMS7: Ability to be responsible	34	13,2%
SMS8: Career aspirations in the relevant field	16	6,2%
SMS9: Ability to use time effectively	17	6,6%
SMS10: Being friendly	13	5,0%
Number of Skills Requested in SMS Group	258	100,0%

As shown in Table 8, the average demand for self-management skills in open jobs is 1.5. In other words, an average of 1.5 self-management skills was demanded in one job vacancy. The most demanded self-management skills in job vacancies are the ability to be open to learning with 18.6%, the ability to be responsible and result-oriented with 13.2% and these skills are followed by the ability to pay attention to details with 12.8%.

Table 9 shows the frequency and rate of use of "Intellectual Skills", which is a subgroup of soft skills, in job advertisements.

Table 9: Intellectual Skills Demanded in Open Jobs (IS)

Intellectual Skills (IS)	Frequency of Job Advertisements	Rate of Demand for the Skills Specified in Job Postings (%)
IS1: Analytical thinking skills	51	19,5%
IS2: Having creative and innovative thinking skills	24	9,2%
IS3: Ability to follow up work	34	13,0%
IS4: Problem solving skills	50	19,2%
IS5: Ability to plan and organize	74	28,4%
IS6: Analytical skills	18	6,9%
IS7: Research skills	10	3,8%
Number of Skills Demanded in IS Group	261	100,0%

As can be seen in Table 9, the most demanded intellectual skill was planning and organizing (28.4 %). This skill was followed by analytical thinking skills (19.5 %) and problem-solving skills (19.2 %). In open-job advertisements, 1.5 intellectual skills are demanded in average advertisements.

Table 10 shows the frequency and rate of use of the sub-skills of “Social and Communication Skills” in job advertisements.

Table 10: Social and Communication Skills Demanded in Open Jobs (SCS)

Social and Communication Skills (SCS)	Frequency of Job Advertisements	Rate of Demand for the Skills Specified in Job Postings (%)
SCS1: Strong communication skills	134	28,0%
SCS2: Effective written and oral communication skills	66	13,8%
SCS3: Complying with ethical behavior and rules	13	2,7%
SCS4: Persuasiveness	26	5,4%
SCS5: Customer-oriented	27	5,6%
SCS6: Team player	101	21,1%
SCS7: Compliance with flexible working hours	62	12,9%
SCS8: Keeping up with a busy work schedule	35	7,3%
SCS9: Having the ability to represent	15	3,1%
Number of Skills Requested in SCS Group	479	100,0%

As can be seen in Table 10, it can be said that social and communication skills are the most demanded skill group in open jobs. In this skill group, strong communication skills were the most desired skill (28.0 %). This was followed by teamwork (21.1%) and effective written and oral communication skills (13.8%). The average number of social and communication skills required for an open job was 2.7. In other words, 2.7 social and communication skills are required for one job vacancy.

In a study conducted by the National Association of Colleges and Employers (NACE) in 2015, employers were asked which skills were most demanded by new graduates. Accordingly, employers demand teamwork (4.61), decision-making and problem-solving skills (4.61), verbal communication skills (4.60) and the ability to plan, organize and prioritize work (4.59) (NACE, 2015:34).

4.2. Findings on the Comparison of Hard and Soft Skills

To make better sense of the research results, hard and soft skill demands were compared. Table 11 presents the demand for hard and soft skills for open jobs.

Table 11: Comparison of Soft and Hard Skills Demanded in Job Vacancies

Skills	Frequency of Skill Specification in Job Advertisements	Rate of Demand for the Skills Specified in Job Postings (%)
Hard Skills	297	22,9%
Soft Skills	998	77,1%
Total Skill Demand	1.295	100,0%

A total of 1,295 skills were required for the 178 vacancies analyzed. The average number of skills required for an open job is 7.3. Of the skills demanded in job vacancies, 22.9% were hard and 77.1% were soft.

Schultheiss and Backes-Gellner (2023) determined the soft- and hard-skill ratios required by occupations. Accordingly, the hard skill ratio of IT professionals is (71.4%), engineering (67.5%), technicians (64.4%), banking and insurance professions (53.2%), sales and trade professions (49.2%) and hospitality industry professions (41.7%) (p.278). According to the findings of this study, new graduates require fewer hard and soft skills than new graduates. It is likely that individuals who recently graduated from higher education lack work experience. At this

point, the inability to combine theoretical and practical knowledge leads to a lack of technical skill. Therefore, an employer who employs a new graduate with no work experience is expected to demand fewer technical skills from an individual. A deficiency in technical skills can be met by employers through various practices such as in-house training and on-the-job training. However, soft skills take longer to acquire and are much more difficult to acquire in the short term within an enterprise. At this point, employers demand more soft skills and fewer hard skills from graduates they will hire.

5. CONCLUSION

Unemployment is an important issue. Among the unemployed, young university graduates had the highest unemployment rate. The idle status of young university graduates poses a serious threat to the economic development and growth of many countries. Investigating barriers to the employment of young university graduates can contribute to reducing unemployment. One of the most important reasons for the inability to match supply and demand in the labor market is the skill gap. At this point, it is important to understand which skill sets business demand in job vacancies to contribute to the solution of the problem.

This study aimed to determine which skills are demanded by recent university graduates and how this skill distribution is. In this context, Kariyer.net was used as an online job search website. Kariyer.net was used because the majority of job posts were available on this website at the time of the study, job description information in job posts was available in detail on this online job search site, the format of job postings was different on different online job search sites, the risk of duplicate posts with the use of different online job search sites and the opportunity to classify job postings suitable for the purpose of the study. This study covered job advertisements published between 20.02.2024 and 26.04.2024. It is expected that job advertisements will begin to increase at the end of winter. Therefore, advertisements were started on a specified date. The data collection process was limited to these dates because of the repetition of the same advertisements in the time period after the reference interval. A total of 178 job advertisements to which recent university graduates who met the specified criteria could apply were included in the study. Job advertisements were subjected to a content analysis within the framework of soft and hard skills.

Although there are many skill classifications of employability in the literature, there is no consensus on a common skill classification (Tymon, 2013, p.843). Some studies have directly categorized skills into two classes: soft and hard (Carvalho and Rabechini Junior, 2015; Hendarman and Cantner, 2018; Osagie et al., 2019; Wu et al., 2015). In some others, work experience is added to the classification in addition to soft and hard skills (Andrews and Higson, 2008:411). While creating the skill set in this study, skills were categorized into two classes: soft and hard. Hard skills are divided into two classes: digital and non-digital, similar to the classification used by Colombo et al. (2019). Soft skills are based on the ESCO cross-skills and competency classifications. In the ESCO v1.1.2. classification system, transversal skills and competencies are divided into six classes (ESCO, 2024), while in this study, they are grouped into three skill groups in order to align them with the skills demanded by the Turkish labor market. In the study, 27 soft skills were identified and 9 of these skills were grouped under "Social and Communication Skills (SCS)," 8 under "Intellectual Skills (IS)" and 10 under "Self-Management Skills (SMS)." It can be said that the creation of a skill set compatible with the demands of the Turkish labor market is one of the most important results of the study.

In this study, hard skills were categorized into two groups: digital and nondigital. It was observed that the most demanding digital hard skill was the Ms Office program. It was determined that more than half of the advertisements demanded knowledge of Ms Office programs. Among non-digital hard skills, the most demanding skill is foreign language skills. Foreign language knowledge was requested in one out of every two advertisements. It can be said that university graduates' knowledge of MS Office programs and foreign languages significantly increases their chances of getting a job.

The soft skills requested in the job advertisements were grouped into 24 soft skills groups. Of the top 10 soft skills, 5 are in the "Social and Communication Skills (SCS)" group, 4 are in the "Intellectual Skills (IS)" group and 1 is in the "Self-Management Skills (SMS)" group. The top 10 soft skills demanded by recent university graduates in the Turkish labor market have been identified. These skills are: (1) strong communication skills, (2) teamwork

skills, (3) planning and organizing skills, (4) reporting, effective written and verbal communication skills, (5) flexible working hours, (6) analytical thinking skills, (7) problem-solving skills, (8) openness to learning, (9) ability to keep up with busy work schedules and (10) ability to follow up work. Strong communication skills are required in most job vacancies. Strong communication skills should be supported by written, verbal and reporting skills. In addition, individuals are expected to be part of teamwork and have the ability to plan and organize. On the other hand, it is thought that the flexibility of working styles today has led employers to demand these skills from their employees.

When the demand for soft and hard skills is compared, it is found that soft skills are demanded more than hard skills are. Individuals who have recently graduated from universities are expected to lack experience. At this point, the fact that theoretical knowledge is not combined with practical knowledge may have led employers to demand fewer technical skills. The technical skills gap can be closed in a short time through in-company practices. On the other hand, soft skills take longer and are much more difficult to acquire. This may have led enterprises to demand more soft skills and fewer technical skills. Another reason for the decline in the demand for technical skills is automation. Demand for soft skills, such as communication skills, teamwork, planning and organizational skills, which automation cannot substitute, has increased. In addition to soft skills, it has been determined that digital skills among hard skills have gained importance today. Providing the right combination of soft and hard skills in accordance with the profession is expected to increase the employability of new graduates.

The gap between the job-related skills of graduates and those needed by businesses is one of the most important obstacles to the employment of higher education graduates. Today, job-related academic knowledge is not sufficient to obtain a job. Additionally, various soft skills are required. Knowing which skills are demanded by businesses and the order of importance of these skills is very important. If graduates do not have the skills that employers demand, they are less likely to be employed.

According to the findings of the research, some suggestions can be made to labor-market parties.

- Employability of graduates has become an important criterion for higher education institutions. To increase the employability of graduates, it is important for higher education institutions to update their curricula in line with the needs of the labor market. Close cooperation between education institutions and enterprises can facilitate the identification of skill demands. In this way, barriers to graduates' employment can be reduced.
- This will contribute to the career development of individuals if recent university graduates know the skill sets required from them in job applications and train themselves to close these skill gaps. At this point, consultancy services to be provided by career centers to determine skill deficiency and close the skill gap are important.
- Active employment policies should not only focus on closing the technical skills gap, but should also be redesigned to provide individuals with non-technical skills. Public employment agencies have important duties at this point.
- The creation of information on job descriptions by human resource units will facilitate access to the desired candidate and reduce the loss of time. Therefore, it is important for companies to establish and develop human resource units. In addition, the human resources unit's determination of the skill gap within the organization and planning training will ensure the development of human resources and increase productivity.
- Advertisements for university graduates are mostly concentrated in large cities. This creates a disadvantage for university graduates who live in relatively small cities. Shifting investments from large cities to other regions will cause employment to shift to these regions. Thus, the unemployment rate of young university graduates can be reduced.

In this study, job vacancies for recent university graduates in Türkiye were analyzed through a single online job search site (kariyer.net). It is known that there are many job search sites in Türkiye other than this online job search site. In future studies, the scope of job postings can be expanded by including different job search sites in the study. Another limitation of the research is time. Future research to be conducted in different seasons may

be beneficial in terms of comparing job postings on a seasonal basis. On the other hand, this study has tried to reveal the skill sets demanded from individuals who have recently graduated from university as the target group. It may be recommended to conduct future research with different groups. In this way, it can be ensured to reveal whether the skills demanded by employers vary according to different groups. On the other hand, studies can be conducted on an occupational basis to understand whether skill sets differ according to occupational groups. In this way, detailed skill sets of occupations can be revealed. In subsequent studies, studies can be conducted to reveal the skill sets of recent university graduates. In this way, the skills of job seekers can be compared with the skills demanded by employers to reveal the skills gap. Finally, it can be suggested to researchers to conduct studies on whether the demand for skills changes in terms of the firm (number of employees of the firm, the sector in which the firm operates, the region in which the firm operates, etc.).

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Beyan ve Açıklamalar (Disclosure Statements)

1. The authors of this article confirm that their work complies with the principles of research and publication ethics (Bu çalışmanın yazarları, araştırma ve yayın etiği ilkelerine uyduklarını kabul etmektedirler).

2. No potential conflict of interest was reported by the authors (Yazarlar tarafından herhangi bir çıkar çatışması beyan edilmemiştir).

3. Bu çalışma, intihal tarama programı kullanılarak intihal taramasından geçirilmiştir (This article was screened for potential plagiarism using a plagiarism screening program).