
Student Opinions of the Efficacy of Select Methods of External Recruitment with Special Focus on Online Methods

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Abstract:

Purpose: This research aimed to assess the efficacy of select methods of external recruitment, with a special focus on online methods, as viewed through the opinions of students.

Design/Methodology/Approach: Studies were conducted in April 2019 using the diagnostic poll method and a questionnaire as the tool of the survey research technique. The verification of the posed hypotheses was conducted with a statistical analysis using the IBM SPSS Statistics 25 suite. The suite served to analyse basic descriptive statistics, Student's t-test for independent samples and a chi-squared test of independence.

Findings: The results revealed that job-seekers predominantly conduct their searching on the Internet. As the respondents indicate, this is also the most effective method.

Practical Implications: The effectiveness of selected methods of external recruitment determined in the research may facilitate their proper selection. This, in turn, would allow to select an appropriate group of potential job candidates. At the same time, the dynamics of changes in the labor market requires constant monitoring of the usefulness of recruitment methods.

Originality/Value: Acquaintance with modern methods of recruiting employees is necessary to obtain candidates meeting the employer's expectations. From this point of view, it becomes extremely important to assess the effectiveness of selected methods of external recruitment.

Keywords: Recruitment, methods of acquiring employees, Internet.

JEL codes: J24, M12, M15.

Paper Type: Research article.

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1. Introduction

Thanks to the social activity and determination of the intellectual elite, the Republic of Poland entered in 1989 the path of intensive development in an economy free from communist conditions. The empowerment of citizens as part of decentralization and subsidiarity in the management system in the public sector and the implementation of macro-and microeconomic competition in the labor market and employment translated into quantitative and qualitative growth in the production and services of enterprises and organizations in the public and private sector. An employee with high qualifications has become the most crucial resource of the organization. Therefore, the search for educated staff, creating modern forms and methods of recruiting employees, shaped within the industrial revolution based on the use of the Internet some new behaviors among university graduates looking for the most advantageous job offers. In the face of the risks associated with economic fluctuations or the COVID-19 pandemic, the labor market has created extensive forms and methods of recruitment on the part of employers, employees, and organizations supporting jobseekers. The problems discussed in the article relate to the currently shaped reality of the Polish labor market in its regional dimension.

The success of every organization depends on the deployment and proper utilization of human capital. The objectives and functions of a modern organization undergo constant transformations (Jabłoński, 2011). The intensity of these changes necessitates adjusting a human resource strategy to the overall strategy of the undertaking (Wiernek, 2006), especially as it pertains to recruitment. One of the main actions that must be achieved through HR management involves providing adequate staff (Rodríguez-Sánchez, Mora-Valentín, and Ortiz-de-Urbina-Criado, 2018). It can be assumed that the methods that have been used so far are insufficient in this regard because the number of recruitment processes carried out simultaneously, different requirements and employment conditions in various industries, force activities related to recruitment marketing, in which human work becomes an element of a competitive market game (Listwan and Kawka, 2010; Jancíková and Milichovský, 2019). A job seeker is no longer merely an asset with given qualifications in the recruitment process, but a client was deciding to purchase a product, which is a job position. The process requires the proper selection of candidates to whom one addresses an attractive job offer before the competition can do so.

External recruitment typically utilizes methods that are described as traditional, such as job offerings posted in the press or hiring a recruitment agency, which analyses the market and publishes such postings (Pocztowski, 2008; Pawlak, 2011). Means such as radio or television advertisements, or postings put up in employment offices or public spaces, or handed out, are also used in recruitment, although their popularity is decreasing. Modern life is becoming primarily based on computer networks, automation, and artificial intelligence (Grenčíková, Kordoš, and Berkovič, 2020; Niedzielski, 2019). This also pertains to the modern form of the employment market, defined by technological progress, specifically, advances in information and

communications technology (ICT) (Kryńska, 2017). This is why, as communication systems between organizations and individuals progress (Zaušková and Rezníčková, 2020; Wierzbicka, 2018), the importance of external recruitment, mainly web-based, is increasing accordingly. It becomes more and more common to use social media to conduct recruitment campaigns aimed at creating a positive employer brand (Kargas and Tsokos, 2020; Colicev, Malshe, and Pauwels, 2018; Civelek *et al.*, 2020).

In light of the above, the purpose of this study was to assess the efficacy of select methods of external recruitment, with a particular focus on online methods, as viewed through the opinions of students. The first part of the article contains the theoretical basis of the topic, taken from professional and scientific sources. The second part describes the research carried out using a diagnostic survey with a questionnaire on external recruitment methods, with particular emphasis on online recruitment. The article ends with research conclusions.

2. Literature Review

E-recruitment can be defined as “a way of implementing HR strategies, policies and practices in organizations through the conscious and directed support of and/or with the full use of web technology-based channels” (Girard and Fallery, 2010). E-recruitment increasingly involves all four of its distinct forms at once, known as Web 1.0; Web 2.0; Web 3.0, and Web 4.0 recruitment. Companies have accepted it as evidence to attract the best candidates; they have to build their brand as an employer rather than post job offers on their website (Web 1.0). Such an approach aims to encourage candidates to apply spontaneously. These activities go beyond online recruitment since they involve the entirety of the organization’s public relations, which positively impacts recruitment in particular. Tools used in brand promotion involve means of internet communication: posting job offers (Web 1.0 recruitment), communicating with potential candidates through social media (Web 2.0 recruitment) and creating social media groups (Web 3.0 recruitment) and using communications between web users, whereby users themselves seek out candidates (Web 4.0 recruitment) (Woźniak, 2013).

E-recruitment uses different sources, methods, and tools than those employed in traditional recruitment (Bejtkovský, 2018; Armstrong and Taylor, 2015; Zottoli and Wanous, 2000). When selecting recruitment methods, one should choose the most effective and relevant methods for the given type of candidate. This is because introducing and utilizing technological innovations requires candidates to have appropriate competencies (Niedzielski, 2019). Individuals searching for jobs on the Internet are different from those who do not, concerning their education, digital literacy, and socio-economic characteristics. In comparisons of the two groups, it was discovered that online job-seekers are better educated, have previously performed occupations with lower unemployment levels, and have apparent traits which are usually connected with better results in job-seeking (Campos, Arrazola, and de Hevia, 2018; Kuhn and Skuterud, 2004).

E-recruitment is a convenient solution for both employers and job-seekers due to its wide accessibility, constant data updating, high flexibility, low cost of access, and no location restrictions (Wieczorek, 2011). The use of e-recruitment tools also leads to lower recruitment costs, more efficient use of time, and higher effectiveness (Harver.com, 2019; Geetha Bhanu Sree Reddy, 2018; Raviprolu, 2017). The efficacy of recruitment can be measured, on the one hand, by the degree to which the objectives of the process are fulfilled, and, on the other, by the job-seekers level of satisfaction (Czaplicka-Kozłowska, 2019; Stachowska and Czaplicka-Kozłowska, 2019; Stachowska, 2013).

Many large organizations put up their websites dedicated to hosting their job offers (“career” or “work” tabs). The applicant fills out an online form and, if needed, uploads indicated application documents (e.g., CV, cover letter, portfolio, references), submitting their entry to a database of applicants for the given position (Olszak, 2014). Companies’ recruitment pages become a place where the company presents itself engagingly to the candidates to convince them to apply. At the same time, the role of such a tab is not to solicit all visitors, but, in a way, to discourage those who do not fulfill the posed criteria, or for various reasons, would not fit with the company (Technologies in Recruitment, 23-24). The Internet is also used to test the knowledge of candidates with various software tools. Increasingly often, in the case of significant distances, the recruitment process involves meeting a candidate in a virtual environment (known as a “cloud meeting,” or “cloud room”), or using an internet communicator which allows not only audio communication but also visual contact with the interlocutor. This significantly lowers the cost both on the part of the employer and the applicant. The information available on the Internet enables better preparation for the interview and eliminates fraud or offers from firms with a negative image through client opinion and social media (Olszak, 2014).

One of the most common means of soliciting applicants is through networking. It is a method of creating a web of contacts through maintained relationships whose main aim is mutual support and aid. It is a deliberate process involving an exchange of information and resources through mutually beneficial contacts. These contacts include personal connections and, increasingly in recent years, ones made on popular professional networking websites. Profiles on such websites are created by people aiming to advertise their professional achievements, build their careers, establish contacts, and promote their positive image on the Internet. This allows recruiters to seek them out and make offers of employment through direct communication. Research shows that candidates solicited through sector-specific networking websites have better qualifications and skills, despite being less experienced in their field, than those solicited through postings on general websites (Breugh, 2008). In their search for employees, recruiters (often referred to as headhunters) use many networking techniques. This general method often proves more effective than posting advertisements on job portals (Polens, 2014).

External recruitment also makes use of jobs markets. Their analogs can be found online as well. Like in traditional markets, interested individuals can receive information about particular organizations, fill out applications, submit the required documents (CV, CL) as well as learn about examples of careers possible in each company, speak “live” to an employer, or take part in one of the discussion forums (Wawer and Muryjas, 2011; Jamika, 2001). Such events can also attract individuals who do not respond to postings but look for employment independently through unsolicited applications. Such individuals send their applications through the mail or the Internet and wait for responses from interested companies (Wyrwicka, Grzelczak, and Krugielka, 2010).

An increasing role in recruitment is played by companies’ websites and internet portals (Wawer and Muryjas, 2011). This is borne out by Interaktywny Instytut Badań Rynkowych and Potentialpark market research company, which found that 85% of employees aged 25-45 look for future jobs by searching for offers online, while 8 in 10 candidates search for information about an employer on their company website. The dynamic growth of the Internet suggests that these proportions will increase in the future (Technologies in Recruitment, 21). The condition of the Polish recruitment market is also illustrated by the newest research prepared and published by Gemius/PBI. It shows that in the first half of 2019, the most popular jobs portals were used by 14.4 million Internet users. Compared to the same period of 2018, the number of users of these portals grew by 1.3 million (Wojtowicz, 2020). The knowledge about the opinions of job-seekers about various methods, sources, and tools of recruitment (Listwan, 2010) and, specifically, their use, is limited. This is primarily due to the rapid changeability of these tools resulting from the evolution of the Internet and the changing practices of its new users. This is the inspiration and impulse for the present research.

3. Research Methodology

This research aimed to assess the efficacy of select methods of external recruitment, with a particular focus on online methods, as viewed through students' opinions. The following hypotheses were posed:

H1: *experience (frequency) in using various forms of job-seeking influences the opinion about their efficacy.*

H2: *proponents of traditional job-seeking methods indicate fewer benefits and more disadvantages of HR technologies than the latter's proponents.*

The research was conducted in a region with low development levels and lagging infrastructure for Internet access compared to the country at large. In Warmia and Mazury, 75.5% of inhabitants use the Internet regularly (GUS, 2018). The subjects in the research we are working students who were improving their qualifications at the University of Warmia and Mazury in Olsztyn and the University of Economy, College of Applied Sciences in Elk, and therefore had experience in searching for jobs. The

research was conducted in April 2019 using a diagnostic survey in the form of a questionnaire. Questionnaires were distributed among all students participating in classes on the given day and were collected in a submission box meant to guarantee total anonymity. One hundred ninety-four correctly completed questionnaires were used in the analysis. Most of the respondents were women (60.3%). A large majority of the respondents were individuals between 18 and 25 years of age (62.9%); the second-largest group was students aged 25 to 35 (24.2%). It can therefore be said that almost 90% of respondents belonged to the Y generation. All respondents had higher education (baccalaureate). A plurality of respondents (28.4%) had work experience of up to 1 year. The most numerous group of respondents were residents of villages (67.5%).

The verification of the posed hypotheses was conducted with a statistical analysis using the IBM SPSS Statistics 25 suite. The suite served to analyze basic descriptive statistics, Student's t-test for independent samples, and a chi-squared test of independence. The level of significance was set at $\alpha = 0.05$.

4. Results and Discussions

In their job searches, most respondents used information obtained on the Internet (84.6%). As a second source, they indicated asking closest relations (family members and acquaintances – 51.3%), or, less frequently, employees of employment offices (24.4%). Few people used the services of specialized firms (14.1%), perused press postings (11.5%), or took advantage of jobs markets (7.7%). Notably, nearly a quarter of respondents (23.1%) conducted a job search independently by delivering or sending offers.

The survey inquired about the efficacy of the utilized job search methods. Of the proposed methods, students were asked to select three which, in their opinion, were most effective and rank them from most effective (first place) to the third most effective (third place). As indicated by respondents, the most effective method was the Internet (92.8%), ranked first by 56.7% of respondents and second by 23.2% of respondents (Table 1). The second most effective method was inquiring among acquaintances and closest family, jointly indicated by over half of respondents, of which 13.4% ranked it first and 22.2% second. The third most selected option was sending and distributing offers (unsolicited applications), jointly indicated by 49%, of which 12.9% ranked it first and 18.6% second.

Therefore, it can be concluded that in the opinion of respondents, the most effective methods of job-searching are those requiring the searcher's activity. Meanwhile, such forms as utilizing the services of specialized firms (22.7%), offers from employment offices (30.4%), press postings (17.5%), and participating in jobs markets (8.8%) were considered the least effective by respondents and thus seen as offering little chance of finding information about potential employment.

Table 1. Respondents' opinion about the efficacy of job-search methods

Job search methods	The efficacy of job-search methods*							
	1st place		2nd place		3rd place		0 – unselected	
	number	%	number	%	number	%	number	%
Internet	110	56,7	45	23,2	25	12,9	14	7,2
Inquiring among acquaintances and closest family	26	13,4	43	22,2	31	16,0	94	48,5
Sending and distributing offers	25	12,9	34	17,5	36	18,6	99	51,0
Specialised firms	13	6,7	19	9,8	12	6,2	150	77,3
Employment offices	14	7,2	14	7,2	31	16,0	135	69,6
Press postings	5	2,6	14	7,2	15	7,7	160	82,5
Jobs markets	3	1,5	3	1,5	11	5,7	177	91,2

Note: * - rank 1 – most effective method, rank 3 – third most effective method, 0 – unselected – least effective

Source: Own study based on research.

The effectiveness of job-search methods was compared with the frequency of their indication, i.e., the experience in using them, to determine whether a correlation exists between them. A chi-squared test of independence was employed for this, yielding a statistically significant result, which means that there is a dependence between the opinion of a given method's efficacy and the frequency of its indication (Table 2). A higher number of indications for a given method was correlated with a higher opinion of its effectiveness. This confirms hypothesis 1.

Table 2. Opinion of efficacy vs. the frequency of a given method's indication by students

Job search methods	The efficacy of job-search methods*						X ²	p
	total	1st place (%)	2nd place (%)	3rd place (%)	0-unselected (%)			
Internet	95,3	60,2	21,6	13,5	4,7	17,917	0,000	
Sending and distributing offers	75,5	29,1	25,2	20	25,5	28,321	0,000	
Inquiring among acquaintances and closest family	64,7	19,0	30,2	15,5	35,3	25,280	0,000	
Specialised firms	60	20	20	20	40	19,153	0,000	
Press postings	57,1	7,1	21,4	28,6	42,9	16,790	0,001	
Employment offices	52,3	13,6	15,9	22,7	47,7	14,738	0,002	
Jobs markets	40	0	20	30	60	17,170	0,001	

Note: * - rank 1 – most effective method, rank 3 – third most effective method, 0 – unselected – least effective.

Source: Own study based on research.

The efficacies ascribed to job-search methods, i.e., dependent variables, were correlated with independent variables such as gender, age, job experience, or place of residence in order to determine whether they differentiate the respondent pool. Results of the chi-square test reveal a significant correlation between work experience and choice of online job searches as the most effective ($p=0.028$). The longer the work experience, the more rarely the Internet was chosen as the most effective method of looking for employment.

There was also a significant correlation between asking friends/family and gender (0.033) and place of residence (0.045). This form of searching was more often considered adequate by women and individuals residing in cities than men and individuals residing in villages. There was also a statistically significant correlation between using specialized firms and age (0.020). The effectiveness of this method was considered higher by respondents younger than 25 – 62.9% than those aged 45–50 – 3.6%. Other parameters showed no significant correlations between opinions on the job-searching methods' efficacy and gender, age, work experience, or place of residence (Table 3).

The research also endeavored to identify tools of e-recruitment most often used by respondents in job searches and their perceived effectiveness. An overwhelming majority of respondents (94.8%) indicated job offer search engines available on the Internet, of which 74.2% ranked them as most effective, i.e., rank 1 (Table 4). The second most indicated method of searching for job offers was social media, such as Facebook, Twitter, or LinkedIn (57.7%), of which 36.6% of respondents ranked it second in efficacy. Following were advertisements in social media (38.7%), ranked third in efficacy by 21.6% of respondents. Few people selected such options as conversation (chat window on the employer's website – 8.8%), skill checks in the form of a game or test (38.2%), job markets (6.2%), videoconferencing (5.1%), or interacting with a virtual assistant (3.1%), thereby ranking these tools as the least effective.

Table 3. *Statistical correlations between perceived efficacy of job-searching methods and gender, age, work experience and place of residence*

Job search methods	Gender			Age			Work experience			Place of residence		
	X ²	p	l	X ²	p	l	X ²	p	l	X ²	p	l
Internet	5,949	0,139	H ₀	6,992	0,638	H ₀	23,004	0,028	H ₁	5,715	0,126	H ₀
Press postings	2,841	0,417	H ₀	12,669	0,178	H ₀	11,405	0,495	H ₀	0,640	0,887	H ₀
Acquaintances and closest family	7,167	0,033	H ₁	9,216	0,418	H ₀	9,648	0,647	H ₀	8,069	0,045	H ₁
Employment offices	5,167	0,160	H ₀	7,390	0,597	H ₀	12,577	0,401	H ₀	4,392	0,222	H ₀
Specialised firms	0,263	0,967	H ₀	19,745	0,020	H ₁	10,360	0,584	H ₀	0,528	0,913	H ₀
Jobs markets	6,585	0,086	H ₀	6,149	0,725	H ₀	14,769	0,254	H ₀	3,185	0,364	H ₀
Sending and distributing offers	1,038	0,792	H ₀	9,629	0,381	H ₀	12,426	0,412	H ₀	3,429	0,330	H ₀

Note: l - Decision to reject or not reject hypothesis H₀.

Source: Own study based on research.

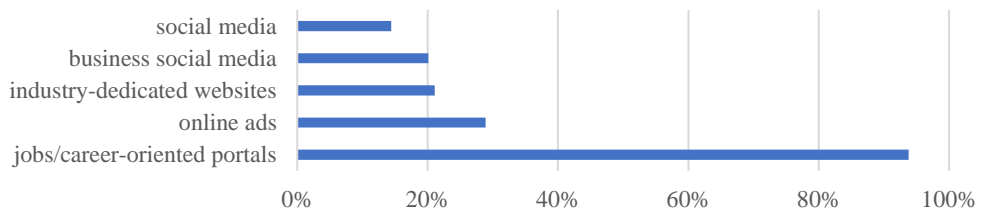
Considering the broad access to the Internet and unlimited availability of its assets, respondents were asked to name the portals they most often visit for job-searching. A clear majority named jobs/career-oriented portals (93.8%) (Figure 1). Almost a third of the respondents used classified online ads (28.9%), and slightly fewer used industry-dedicated websites (21.1%) and business social media (20.1%). A small number of respondents indicated general social media (14.4%).

Table 4. Perceived effectiveness of select tools for e-recruitment used in job searches

Job search methods	The efficacy of job-search methods*							
	1st place		2nd place		3rd place		0 – unselected	
	number	%	number	%	number	%	number	%
Job offer search engines (e.g Pracuj.pl, praca.pl, jobs.pl)	144	74,2	22	11,3	18	9,3	10	5,2
Social media (e.g Facebook, twitter, linkedin)	11	5,7	71	36,6	30	15,5	82	42,3
Advertisements in social media	8	4,1	25	12,9	42	21,6	119	61,3
Mobile applications	7	3,6	35	18,0	21	10,8	131	67,5
Exchange text messages with the organization	10	5,2	9	4,6	17	8,8	158	81,4
Chat window on the employer's website	4	2,1	1	2,1	9	4,6	177	91,2
Videoconferencing	5	2,6	3	1,5	4	2,1	74	94,9
Job markets	1	0,5	5	2,6	13	6,7	182	93,8
Skill checks in the form of a game or test	4	2,1	2	1,0	10	5,2	178	91,8
Voice search with Virtual assistant	0	0	0	0	6	3,1	188	96,9

* - rank 1 – most effective method, rank 3 – third most effective method, 0 – unselected – least effective.

Source: Own study based on research.

Figure 1. Websites used by respondents for job searches

Source: Own study based on research.

The survey asked respondents to indicate the advantages resulting from new technologies being introduced in searching for employment. They answered mainly pointing many offers being aggregated in one place (66.5%), to the possibilities of Internet searches for offers matching the expectations of potential employees (65.5%) (Table 5) and the possibility of searching for job offers from home (65.5%). A large group of respondents mentioned the possibility of specifying detailed preferences when searching through job offers (54.6%) and the ability to submit application documents via the Internet (50%). A similar number indicated the convenience of finding job offers quickly on the Internet (47.4%) and the ease of access to any given job offer (42.3%). Less frequently, respondents indicated the currentness of online job postings (32.5%), no costs involved in job-searching online (32%) and the fact that the Internet offers a greater wealth of information about positions and companies (27.8%).

Table 5. *Advantages resulting from new technologies in job-searching, according to proponents of traditional methods and proponents of HR technologies*

Advantages	Total		Proponents of traditional methods		Proponents of HR technologies	
	number	%	number	%	number	%
Many offers being aggregated in one place	129	66,5	80	62,0	49	38,0
Possibilities of Internet searches for offers matching the expectations of potential employees	127	65,5	69	54,3	58	45,7
Possibility of searching for job offers from home	127	65,5	69	54,3	58	45,7
Possibility of specifying detailed preferences when searching through job offers	106	54,6	54	50,9	52	49,1
Ability to submit application documents via the Internet	97	50,0	50	51,5	47	48,5
Finding job offers quickly on the Internet	92	47,4	50	54,3	42	45,7
Ease of access to any given job offer	82	42,3	49	59,8	33	40,2
Currentness of online job postings	63	32,5	33	52,4	30	47,6
No costs	62	32,0	38	61,3	24	38,7
The Internet offers a greater wealth of information about positions and companies	54	27,8	30	55,6	24	44,4

Source: Own study based on research.

Table 6. *Disadvantages resulting from new technologies in job-searching, according to proponents of traditional methods and proponents of HR technologies*

Disadvantages	Total		Proponents of traditional methods		Proponents of HR technologies	
	number	%	number	%	number	%
Postings appearing on many websites at once	132	68,0	72	54,5	60	45,5
False advertisements	95	49,0	55	57,9	40	42,1
Lack of response to applications	83	42,8	40	48,2	43	51,8
Postings which are out of date	81	41,8	52	63,0	30	37,0
The offered jobs were unattractive	42	21,6	27	64,3	15	35,7

Source: Own study based on research.

Apart from the advantages resulting from introducing new technologies in job-searching, respondents were also asked to identify any disadvantages involved in using new technologies for this purpose. Respondents indicated mainly repeating postings appearing on many websites at once (68%) (Table 6). Apart from that, they pointed to false advertisements (49%), lack of response to applications (42.8%), and postings that are out of date (41.8%). Few respondents indicated that the offered jobs were unattractive (21.6%).

The advantages discussed were compared between proponents of traditional methods and those of new HR technologies to discover whether they exhibit differences in reported advantages and disadvantages of new HR technologies. For this purpose, a Student's t-test for independent samples was performed. Its result turned out statistically insignificant, which means that both groups are not different in the

advantages and disadvantages they see, resulting in the rejection of hypothesis 2 (Table 7).

Table 7. Differences between proponents of traditional and modern recruitment methods with respect to perceived advantages and disadvantages of new HR technologies

Number perceived	Proponents of traditional methods (n = 109)		Proponents of HR technologies (n = 85)		<i>t</i>	<i>p</i>	95% CI		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			<i>LL</i>	<i>UL</i>	<i>d Cohena</i>
advantages of new HR technologies	4,79	2,50	4,91	2,75	-0,31	0,758	-0,86	0,63	0,04
disadvantages of new HR technologies	2,25	0,89	2,21	0,94	0,272	0,786	-0,22	0,30	0,03

Source: Own study based on research.

5. Conclusion

The conducted research shows that most respondents use the Internet in job searches. This result aligns with existing published findings (Listwan 2010; Woźniak 2013; Nikolaou, 2014). Other methods indicated by the respondents were unsolicited applications, employment offices, or the services of specialized firms, as well as press postings and job markets. The method considered second most effective was inquiring among closest family and acquaintances. The third most indicated method was sending and distributing unsolicited offers.

Therefore, it can be generalized that the methods considered most effective by respondents are those requiring the searcher's activity. Forms such as: utilizing the services of specialized firms, offers from employment offices, press postings, and participating in jobs markets were considered the least effective by the respondent and were thus seen as offering little chance of finding information about potential employment.

In job searches, respondents predominantly used job offer search engines available on the Internet (mainly through jobs/career-oriented portals). The second most indicated method of searching for job offers was using social media, which respondents also ranked as the most effective tool in e-recruitment. Few people used such options as a chat window on the employer's website, skill checks in the form of a game or test, virtual job markets, videoconferencing, or interacting with a virtual assistant, thereby ranking these tools as the least effective. Proponents of traditional methods and new HR technologies do not differ from each other concerning how many advantages or disadvantages they discern in new HR technologies.

Dynamic changes in employee recruitment, coupled with developing HR technologies and their greater effectiveness compared to traditional methods, necessitate constant monitoring and improvement, which entails the need for further study in this field.

References:

- Armstrong, M., Taylor, S. 2015. *Human resource management: modern concept and procedures*. London, Kogan Page.
- Bejtkovský, J. 2018. Using of traditional recruitment methods and tools and e-recruitment by employees of baby boomers generation, generation X, generation Y and generation Z in selected healthcare service providers in the Czech Republic. *Acta academica karviniensia*, 18(4). DOI: 10.25142/aak.2018.025.
- Breaugh, J.A. 2008. Employee recruitment: Current knowledge and important areas for future research. *Human Resource Management Review*, 18 (03). DOI: 10.1016/j.hrmr.2008.07.003.
- Campos, R., Arrazola, M., de Hevia, J. 2018. Finding the right employee online: determinants of internet recruitment in Spanish firms. *Applied Economics*, 50(1). DOI: 10.1080/00036846.2017.1319560.
- Civelek, M., Gajdka, K., Světlík, J., Vavrečka, V. 2020. Differences in the usage of online marketing and social media tools: evidence from Czech, Slovakian and Hungarian SMEs. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, 15(3), 537-563. DOI: 10.24136/eq.2020.024.
- Colicev, A., Malshe, A., Pauwels, K. 2018. Social Media and Customer-Based Brand Equity: An Empirical Investigation in Retail Industry. *Administrative Sciences*, 8(3). DOI: 10.3390/admsci8030055.
- Czaplicka-Kozłowska, I. 2019. *Effectiveness of incentives used in municipal government offices - employee perspective*, Olsztyn: Wyd. UWM.
- Geetha, R., Bhanu Sree Reedy, D. 2018. Recruitent thought Artificial Intelligence: A Conceptual Study. *International Journal of Mechanical Engineering and Technology*, 9(7).
- Girard, A., Fallery, B. 2010. Human Resource Management on Internet: New Perspectives. *The Journal Contemporary Management Research*, 4(2).
- Grenčíková, A., Kordoš, M., Berkovič, V. 2020. Wpływ Przemysłu 4.0 na tworzenie miejsc pracy w małych i średnich przedsiębiorstwach oraz firmach rodzinnych na Słowacji. *Administrative Sciences*, 10 (3). DOI: 10.3390/admsci10030071.
- GUS. 2018. *Information society in Poland. Results of statistical surveys from 2014-2018*, Warszawa, Szczecin.
- Harver.com 2019. *Benefits of Recruitment Tech and AI telling both sides of the story*. Harver. Retrieved from: https://harver.com/wp-content/uploads/2019/01/harver_Benefits-of-recruitment-technology.pdf.
- Jabłoński, M. 2011. *Concepts and models of employee competencies in management*, Warszawa, Wydawnictwo Fachowe CeDeWu.pl.
- Jamka, B. 2001. *External and internal selection of employees. Theory and practice*. Warszawa, Difin.
- Jancíková, K., Milichovský, F. 2019. HR Marketing as a Supporting Tool of New Managerial Staff in Industry 4.0. *Administrative Sciences*, 9(3), DOI: 10.3390/admsci9030060.

- Kargas, A., Tsokos, A. 2020. Employer Branding Implementation and Human Resource Management in Greek Telecommunication Industry. *Administrative Sciences*, 10(1). DOI: 10.3390/admsci10010017.
- Kryńska, E. 2017. The faces of contemporary labour market segmentation. *Economic Journal*, 12(2).
- Kuhn, P., Skuterud, M. 2004. Internet Job Search and Unemployment Durations. *American Economic Review* 94(1). DOI: 10.1257/000282804322970779.
- Listwan, T. 2010. *Personnel management*, Warszawa: Wyd. C.H. Beck.
- Listwan, T., Kawka, T. 2009. Selection of employees. Listwan, T. (Ed.). *Human Resources Management*. Warszawa, Wydawnictwo C.H. Beck.
- Niedzielski, E. 2019. Changes in the labour market and their consequences. *Economic Journal*, 14(2).
- Nikolaou, I. 2014. Social Networking Web Sites in Job Search and Employee Recruitment. *International Journal of Selection and Assessment*, 22(2).
- Olszak, E. 2014. The Latest Advancements in Staffing the Organization: Directions of Development for Methods and Tools Applied. *Recruitment and Selection. Scientific Works of the University of Economics in Wrocław*, 349.
- Pawlak, Z. 2011. *Human resources management in the enterprise*, Warszawa: Wyd. Poltex.
- Pocztowski, A. 2008. *Human resources management. Strategies, processes, methods*, Warszawa: Wyd. PWE.
- Polens, E. 2014. Networking - a new method of employee recruitment. Retrieved from: <https://rozwiazaniahr.com.pl/2014/09/04/networking-nowa-metoda-rekrutacji-pracownika>.
- Raviprolu, A. 2017. Role of Artificial Intelligence in Recruitment. *International Journal of Engineering Technology Management and Applied Sciences*, 5(4).
- Rodríguez-Sánchez, J-L., Mora-Valentín, E-M., Ortiz-de-Urbina-Criado, M. 2018. Successful Human Resources Management Factors in International Mergers and Acquisitions. *Administrative Sciences*, 8(3). DOI: 10.3390/admsci8030045.
- Stachowska, S. 2013. Motivating to work. Walkowiak, R., Czaplicka-Kozłowska, I., Kozłowski, A.J., Stachowska, S., (Eds.). *Management of the social potential*, Włocławek, UWM, Expol.
- Stachowska, S., Czaplicka-Kozłowska, I.Z. 2019. Motivating employees of the higher education institution: case study of academic teachers. *Management Theory and Studies for Rural Business and Infrastructure Development*, 41(4). DOI: 10.15544/mts.2019.48.
- Technologies in Recruitment. Erecruitment Solutions Spółka Z O.O.
- Wawer, W., Muryjas, P. 2011. E-Recruitment in Implementing of E-Business Strategy. *Ekonomiczne Problemy Usług*, 68.
- Wieczorek, G. 2011. The Internet like tool to search and recruitment staff. *Scientific Works of the Academy of Jan Długosz w Częstochowie*, 6.
- Wiernek, B. 2006. Company personnel as a strategic resource. Zbiegień-Maciąg, L. (Ed.). *New trends and challenges in personnel management*. Kraków, Oficyna Wolters Kluwer.
- Wierzicka, W. 2018. Information infrastructure as a pillar of the knowledgebased economy - an analysis of regional differentiation in Poland. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, 13(1). DOI: 10.24136/eq.2018.007
- Wojtowicz, D. 2020. Retrieved from: <https://natemat.pl/284923,portale-rekrutacyjne-notuja-wzrost-ruchu-rekordzista-jest-serwis-gowork#>.
- Woźniak, J. 2013. *Recruitment. Theory and practice*. Warszawa, PWN.

- Wyrwicka, M.K., Grzelczak, A.U., Krugielka, A. 2010. *Company Personnel policy*. Poznań: Wydawnictwo Polityki Poznańskiej.
- Zaušková, A., Rezníčková, M. 2020. SoLoMo marketing as a global tool for enhancing awareness of eco-innovations in Slovak business environment. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, 15(1). DOI: 10.24136/eq.2020.007.
- Zottoli, M.A., Wanous, J.P. 2000. Recruitment source research: Current status and future directions. *Human Resource Management Review*, 10(04). DOI: 10.1016/S1053-4822(00)00032-2.