

INNOVATIVE FORMS OF EMPLOYEE SELECTION

Robert GOLEJ^{1*}, Agata PIETRON-PYSZCZEK², Marcelina WAŁĘSA³

¹ Wrocław University of Economics and Business, Faculty of Business and Management, Department of Labour, Capital and Innovation; robert.golej@ue.wroc.pl, ORCID: 0000-0003-4462-7035

² Wrocław University of Economics and Business, Faculty of Business and Management, Department of Labour, Capital and Innovation; agata.pietron-pyszczek@ue.wroc.pl, ORCID: 0000-0002-3861-3609

³ Independent HR expert

* Correspondence author

Purpose: This article aims to identify contemporary and innovative models of recruitment companies operating in the IT sector.

Design/methodology/approach: The research focused on external recruitment by specialised recruitment companies working for IT companies. A case study analytical method was used, focused on conducting a detailed analysis of the proposals of innovative recruitment portals. For this purpose, the websites of these portals and the details of their offerings were analysed.

Findings: The research found an increasing effort by recruitment companies to reach out to young IT talent, building a community of young IT professionals to whom job offers can be directed. Increasingly, recruitment companies are using Social Media. In addition to recruitment, companies are carrying out part of the selection process using the 'Skill Challenges' method, among other things. Increasingly, the pre-selection of candidates and the assessment of competencies, e.g. programming, is being carried out using artificial intelligence AI.

Research limitations/implications: Research points to the increasing role of innovative tools in the staffing process. Contemporary e-recruitment methods are constantly changing and improving. The staff selection phenomenon, especially in the IT sector, requires constant monitoring of the changes taking place.

Practical implications: The practical utility of the research refers to the effectiveness of conducting the personnel selection process using different e-recruitment methods. It therefore enables a more rational choice of individual methods. The article raises awareness of the possibilities offered by some recruitment platforms.

Originality/value: The research conducted identifies the variety of employee selection techniques used in the e-recruitment process. Often the models offered by innovative recruitment companies are not widely known, but carry great potential for development.

Keywords: job advertisement; employee recruitment; external recruitment; IT.

Category of the paper: research paper.

1. Introduction

The far-reaching digitalisation, characteristic of the knowledge and technology economy, is reflected in recruitment and selection processes; it results in the emergence of new (innovative) tools to support these processes. The HR industry is undergoing dynamic changes related to modern technologies. Phenomena that contribute to the development of the industry include increasing investment in HR-Tech start-ups. New VC funds and accelerator programmes dedicated to such solutions are springing up all over the world. The number of conferences dedicated to this topic is also increasing. The HR-Tech industry is rapidly developing towards the automation of information retrieval tools (specialised algorithms, use of NLP) to build corporate databases of employees and candidates to whom job offers can be targeted. Investment in HCM - Human Capital Management - is also increasing. A fundamental problem in the implementation of the HR selection function is the building of a suitable database of job candidates. Each employer wants to attract candidates with high competencies and qualities that match the needs of a specific position or position in a project team. It is then easier to try to select the most predisposed person for the position from among many competing applications. However, it should be noted that maintaining an active candidate base requires a large organisational and resource effort. An active candidate base is a community, in this case of IT professionals, focused on a specific problem, challenge, competition, knowledge base, training programme, i.e. people who actively participate in the life of the community, proving their competence. Running such a base involves resources and is therefore costly. Consequently, the predominant approach is to maintain inactive databases, where we have collected information about individuals their qualifications, experience, etc., i.e. the traditional approach to the recruitment process. The traditional approach implies a sequence of the following activities: identification of the needs of the vacant position, sending information about the vacancy to the labour market, waiting for the flow of applications, initial selection, further selection stages, and establishment of the employment relationship. E-recruitment largely follows this traditional approach, only instead of a notice board, there are: job offers on the company's website, and recruitment portals that optimise communication and conduct a kind of pre-selection by finding candidates with the competencies expected by employers. Thus, the employee selection process has been partly automated (Mamatha, Kumar Thoti, Professor, 2022; Koivunen et al., 2022). Of course, if a candidate has inadequately marked his or her competencies then offers in which he or she would be interested may not reach him or her. Recruitment portals make it considerably easier to find a new job. Candidates, on the other hand, can browse job offers in different keys, optimising their job search activity.

The purpose of this article is to attempt to identify new methods of staff selection used in the IT industry.

2. Selection of personnel

2.1. Permeability of the recruitment and selection function

Staff selection consists of three key stages: recruitment, selection and induction (Kawka, Listwan, 2010). Recruitment refers to the process by which potential candidates are sought and then encouraged to apply for a current or future vacancy. Selection is the process of assessing the skills and competencies of candidates who have been selected in the first stages of recruitment, with the aim of finding an individual who matches the organisation's expectations (Dale, 2001).

The selection of employees from outside the organisation (so-called external recruitment) is relatively often outsourced to specialised companies. The traditional cooperation model is based on a relatively strong separation of the recruitment and selection functions. In such a model, the external company searches for candidates who meet the client's expectations and the selection process is already carried out internally by the target organisation. The function of the contracting company is to provide information to the defined labour market about the desire to hire a specific type of employee.

Today, the activities of many recruitment companies' business models are not just focused on issuing or brokering job offers, or even on finding specific individuals and targeting them individually. Companies are trying to build new solutions to ensure they have constant access to talent in the industry, and this will allow them to run an effective employee selection programme. In many cases, the integration goes further and the recruitment process is combined with the initial and/or final selection of employees, particularly in the area of skills in the use of specific technologies.

2.2. Staff selection in the IT sector

Improving processes, creating systems, programmes, applications, websites are necessary for an organisation to function and still be competitive. In order for such activities to be carried out, qualified staff is needed, including systems engineers, programmers, and developers who, with their acquired and trained skills in operating tools and programming languages, are able to fulfil some of the most important roles within a company. Since IT systems cover most aspects of a company's operations, so to speak, guaranteeing the continuity of its activities, people with IT competencies are a valuable human resource. The aforementioned issues lead to the fact that the problem of finding and hiring employees in the IT industry is definitely different from others. The IT labour market has, with the passage of time, the development of technology and the widespread use of IT solutions, become an 'employee market'. This leads to a high demand among a significant proportion of companies for people with Information Technology qualifications, experience and skills; in essence, companies are competing for candidates rather than the other way around. The demand for specialists in the technology market is greater than

the number of people who are actively seeking career progression by changing their place of employment. Of course, this situation results in high expectations of candidates compared to other industries. The employee selection process in the IT industry is increasingly being carried out by external companies. Often this does not just involve recruitment alone, but increasingly enters the area of selection, not just initial selection.

2.3. Popular ways of selecting employees

Organisations are increasingly turning to new ways of reaching the best candidates. Traditional forms of recruitment are no longer attractive - especially for representatives of generation Y (Branowska, 2021). There are three major trends in the market for recruitment services regarding ways of selecting employees, i.e. networking (including direct search), e-recruitment and Neuro-Linguistic Programming (NLP) (Olszak, 2014).

Networking is networking, relevant to business in the broadest sense. Network marketing is, therefore, literally marketing based on building networks, in this case, two types of networks: a network of customers and a network of colleagues. Networking, or networking, is therefore central to recruitment processes. Networking is based on relationships that are nurtured so that there can be a two-way exchange of information and advice so that one can recommend and support each other (Tullier, 2006, p. 23). Ewa Olszak (2014) states that on a daily basis, especially in the Polish reality, we have to deal with the stereotype of networking, saying that acquaintances (i.e. networks of contacts) will take care of any matter, such as finding a job, enrolling a child in kindergarten or writing a prescription. So the key to professional success, stereotypically thinking, is knowing people in high positions. Networking, on the other hand, emphasises a wider network of contacts, e.g. middle managers and rank-and-file employees. From the employer's and recruiter's point of view, the greater the number of contacts, the quicker it is possible to reach the desired candidates from the so-called recommendation, thus reducing time and expenses related to, for example, the publication of an advertisement in the press or on web portals. Essentially, networking is about using your network of contacts and the direct search method in the recruitment process. This involves a direct search in a defined environment (specific professional groups, companies with a similar profile) for candidates who meet the requirements.

E-recruitment is, in the simplest terms, conducting staff selection online. The term is very broad and concerns not only the recruitment process but also selection. Selection can take place in two ways. The first uses the Internet as a medium to facilitate communication in interviews, tests, competitions and so on. The second analyses the activity of candidates on social media or on their websites and blogs, building their personality, worldview and competence profiles. Some of the advantages of e-recruitment include: talent pool management, reaching potentially new candidates, and brand building (Sołek-Borowska, Wilczewska, 2018). Each selection method and tool should be chosen for its effectiveness in identifying candidate skills and

competencies (Wozniak, 2020), but empirical research on the adequacy and effectiveness of different e-recruitment tools is scarce (Koivunen, Ala-Luopa, Olsson, Haapakorpi, 2022).

Neuro-Linguistic Programming is a body of knowledge about how our brain works, uses, exploits and develops in collaboration with our body, which is a receptor (seeing, hearing, tasting, smelling, feeling) of reality. NLP is both a system of theoretical models to understand the structure of human experience and action, and a set of practical methods to support constructive change and development (Olszak, 2014; Etuka, Athota, Kearney, 2021). NLP can support recruitment activities by, among other things, guiding the candidate's behaviour and emotions during the recruitment interview. A recruiter can use methods to influence the interviewee's emotions, interpret the interviewee's non-verbal behaviour and recognise whether the candidate is telling the truth or using manipulative methods (Olszak, 2014). NLP can help verify a candidate's motivation, credibility and sincerity during the selection process. Against the background of Tomasz Witkowski's (2010) findings, this direction in the development of selection methods may raise some objections; for example, the manipulation of a potential employee's expectations may be considered as one of the controversial aspects of using NLP.

As the subject of the article is staff selection in an online model, further consideration is given to the issue of e-recruitment.

2.4. The role of social media in the e-recruitment process

According to one definition (Lupa, 2016), social media are online platforms that are used for the creation, processing, sharing, receiving, playing and commenting on visual and audio content (e.g. images, games, videos, music, texts) by individuals or institutional entities (e.g. businesses). Social media have in recent times dominated the daily lives of people from all over the world. They are a source of entertainment and information and are a form of interpersonal communication that allows contact over long distances.

Social media are increasingly used by recruiters to either search for job candidates or to supplement information about potential future employees (Hosain, 2023; Balcerak, Woźniak, Zbucnea, 2023; Rahman et al., 2022). The analysis of social networks is most often used by them to confirm the reliability of the information and competencies contained in the submitted CVs (Jacobson, Gruzd, 2020). Very popular portals used for this purpose include LinkedIn and Facebook (Chmielecki, 2013; Gzowska, 2016; Wolniak, 2019). Social media provide an opportunity to introduce more and more interesting solutions related to the implementation of the HR selection function. For example, we are talking about the use of AI in the process of searching for candidates and verifying competencies (Hunkenschroer, Luetge, 2022; Tippins, Oswald, McPhail, 2021; Zacny, Kania, Sołtysik, 2019). Social media-based solutions focus on how 'first contact' information is communicated. In the case of specialised recruitment portals, the issue is much broader and is an area of innovative proposals, which is the subject of the research presented in the article.

3. The methodology and results of the study

The essential form of the research was case study analysis. The nature of the subject matter of the research indicates that only a detailed analysis of the specific operating models of recruitment companies allows the key questions for the research to be answered. These questions include: What forms of recruitment and information channels do job candidates prefer? How is the candidate base built? Several recruitment portals and IT companies were analysed in terms of how they conduct the selection process. Each observation has been described in some detail, giving rise to an attempt to systematise them.

3.1. Challenge model

Recruitment companies use a number of methods to reach out to potential candidates; the most commonly used methods include:

- posting on Facebook,
- searching via LinkedIn for profiles of people who meet the selection criteria and making them offers appropriate to their qualifications and/or experience,
- posting various tasks to be completed on the company's website, where the incentive is not only to be offered a job in a particular IT position but also to receive cash prizes, the opportunity to prove oneself against the competition,
- conducting email conversations with suitable candidates,
- telephone contact to present the company's offer and to advertise,
- telephone contact with interested candidates,
- forwarding CVs, other application documents and details of interested applicants to relevant (specific) companies looking for new employees.

The online recruitment platform is one of the most widely used ways to source employees. It enables IT professionals with programming, technical or analytical skills to be verified. The online recruitment platform offers:

- posting of job vacancies with the client employer,
- posting of a CV by the interested candidate,
- conducting so-called recruitment challenges ('Skill challenges'),
- organising and promoting Hackathons.

The platform offers the posting of job vacancies, which contain all the details of the position. Also, an interested candidate can upload a CV on the platform. This allows the client's HR department to verify and decide if the person is suitable. This is a quick way for companies to attract and hire IT professionals. The final stage of recruitment is to invite candidates to a technical interview, which allows for a final check of skills and experience. The technical interview is only conducted if companies post jobs on the platform without a 'Skill challenge' attached.

During the 'Skill challenge' - linked to job advertisements - candidates demonstrate their skills at the time of application. Challenges are, for example, text tasks for selecting answers and coding tasks, whereby the candidate tests his or her coding skills while taking part in the online recruitment. These tasks determine the candidate's level of knowledge and whether they are the right person for the job. Candidates get automatic online feedback - they know immediately if they are in the next round of recruitment. This solution helps to discover developers at an early stage of their career path (current students, young graduates), and enables automated relationship building and direct sourcing. It can be said to be the new standard, giving, among other things, a very positive 'candidate experience' with the employer brand.

Hackathons are events aimed at developers that take place on a specific day. This method helps participants to collaborate and solve technical design challenges in a limited amount of time.

Companies can use several models, which include:

- developing a talent pool around your brand,
- recruiting directly from the community created on the portal.

In this model, the platform operator will focus on building its recruitment bases, i.e. pools of candidates with the company's desired skills that can be engaged in open recruitment processes for current or future demand. Having an engaged talent community around your brand allows you to effectively meet your internal recruitment needs and free the flow of candidates. Using the platform, companies are provided with a tool to automate the building, development and evaluation of a technology community, which can be achieved by launching a series of dedicated programming challenges. The programming challenge formula (available on the platform) effectively attracts programmers and allows companies to discover new people and pre-automate the assessment of their practical skills.

The portal enables a series of programming challenges. The challenges engage the community and allow new talent to be discovered and their skills measured. During a challenge, developers are faced with the task of solving a specific design problem. Their goal may be to write code that solves the task or to improve existing code. Many of the tasks are designed to reflect a real-world working environment, where IT professionals develop existing team projects and have to rely on other developers' source code. The AI system evaluates the developers participating in the challenges automatically, makes it easy to monitor their skills development and invites the best to join their organisations.

Developers join the platform to polish their coding skills, compete, showcase their talent and advance their careers. As part of its business model, it enables the hiring of candidates directly from the community - providing companies with access to people who were previously unattainable to them (passive candidates) and providing information about their skills (speeding up the assessment process in further stages of recruitment). Working with the platform brings benefits for developers and employers. The platform addresses the needs of programmers in the following areas:

- the need to learn in practice and improve their skills,
- desire for career development,
- motivation and ambition need (to show that I am the best, better than a colleague),
- additional financial incentive in selected challenges with prizes.

The platform addresses the following needs of companies:

- the need to expand the team with new, creative developers,
- building employer brand recognition and prestige,
- the related need to implement effective sourcing and to attract the most valuable candidates (being a 'first choice' company).

3.2. Training programmes

Another method of recruitment observed is the running of training programmes for different social groups from which new professionals can be recruited. These programmes are generally targeted at young people, current students and/or graduates. There are also programmes with the participation of government institutions aimed at activating women, for example, in the IT sector. In this case, we are not only talking about recruitment but also about training employees in a specific profile needed by the company.

3.3. Groups on social media

Another form of active recruitment that has been observed is for recruitment companies to set up and animate groups on social networks in the fields in which they specialise. A recruitment company must therefore have the right competencies to pursue such a model, but this enables the availability of a candidate base with well-defined technological skills.

The research investigated the effectiveness of conducting a recruitment campaign using Facebook, LinkedIn and *organic direct*. Facebook posts attracted the most interest followed by ads on the portal/employer's page (*organic direct*) and then ads on LinkedIn. A similar pattern was followed when analysing the share of applications submitted to the number of entries. These results may have been slightly distorted because some of the *organic direct* entries were made later and directly to the bidder's website.

4. Discussion

The research carried out analysed the recruitment tools used by recruitment companies. Next to the interpersonal skills of recruiters, these are the key competencies determining the effectiveness of reaching the target group with a job offer. The research shows that Facebook posts generate the most traffic to individual job offers, followed by *organic direct* traffic,

i.e. by browsing offers on the portal, with LinkedIn in third place. The effectiveness of applications submitted in response to posts is similar.

Job marketing is a concept taken from marketing and stems from the phenomenon that, to attract a job candidate, it is no longer sufficient to simply traditionally present overall job offers. It is necessary to promote job offers. Therefore, we can speak of the need to define target groups, to identify their needs in terms of the relationship with the recruiter. It is also important to adapt communication channels to the offers. We will deal differently with people at the beginning of their careers, and differently with the search for candidates for managerial positions. There is a need to provide short and clear information that encourages deeper knowledge of the offer. Modern recruitment models are indicating greater integration between recruitment firms and businesses. From the sales perspective of recruitment firms, we see many parallels with classic marketing, hence the notion of job marketing is legitimate and organises elements of the recruitment process.

Contemporary models for recruitment companies focus on creating a community of IT professionals to whom job offers can be directed. This community can be created around broadly defined competence development (training), problem-solving (forums), challenge creation or Hackathons (Wang et al., 2022; Fig, 2023). Alongside the effect of talent selection comes the effect of upskilling and shaping problem-solving skills in a networked environment. These solutions especially at a time of ITC staff shortages seem very interesting. Some concerns, especially in a model oriented towards training and shaping young future employees, may be raised by the long-term perspective of the benefits obtained. This applies to the first period of offering the service before the first generation of trained workers enters the labour market.

Significant resistance to the introduction of new HR selection techniques seems to reside in HR departments and the lack of knowledge about them in HR departments and company boards. Very often the HR selection process is an essential function of these departments. This means that it is an existential function for them. Thus, the introduction of external actors performing a wide range of HR selection functions can be perceived as a threat. This is a topic worth addressing in future research. There are costs associated with the creation and maintenance of a talent pool. In this context, the question arises whether the utility offered at a certain price is significant enough to overcome the internal resistance of the organisation to use these services.

5. Summary

The increasing digitalisation of business processes is also transforming the way employees are selected. The article uses the case study analysis method. It was pointed out that in the IT market, recruitment companies are gaining in importance, as they implement not only the

recruitment phase but also, in part, the selection phase of personnel selection. The usefulness of the study relates to highlighting the potential of new forms of staff selection used in the IT industry. Recruitment firms and many employers are running their own 'talent pools' focused on training, confessions or problem-solving. This innovative solution has the potential for great growth. The prerequisite for this development, however, is that the customers of these companies perceive adequate utility beyond the equivalent of the price to be paid for the service.

References

1. Balcerak, A., Woźniak, J. (2021). Reactions to some ict-based personnel selection tools. *Economics and Sociology*, No. 14(1), pp. 214-231. Retrieved from: <https://doi.org/10.14254/2071-789X.2021/14-1/14>, 07.07.2022.
2. Balcerak, A., Woźniak, J., Zbucnea, A. (2023). Predictors of fairness assessment for social media screening in employee selection. *Journal of Entrepreneurship, Management and Innovation*, No. 19(2), pp. 99-126. Retrieved from: <https://doi.org/10.7341/20231923>, 24.08.2023.
3. Branowska, A. (2021). Proces doboru pracowników w przedsiębiorstwach. Przegląd nowoczesnych i tradycyjnych metod selekcji. *Zeszyty Naukowe Politechniki Poznańskiej. Organizacja i Zarządzanie*, No. 83, pp. 9-25, doi: 10.21008/j.0239-9415.2021.083.01.
4. Chmielecki, M. (2013). Rekrutacja z wykorzystaniem mediów społecznościowych–wyniki badań. *Zeszyty Naukowe Wyższej Szkoły Bankowej we Wrocławiu*, No. 4 (36), pp. 37-51.
5. D'Silva, C. (2020). A Study On Increase in E-Recruitment and Selection Process. *International Journal of Research in Engineering, Science and Management*, No. 3(8), pp. 205-213. Retrieved from: <https://journal.ijresm.com/index.php/ijresm/article/view/162>, 7.07.2022.
6. Dale, M. (2001). *Skuteczna rekrutacja i selekcja pracowników*. Kraków: Dom Wydawniczy ABC.
7. Etuka, J., Athota, V.S., Kearney, S. (2021). How can emotional intelligence (EI) and neuro-linguistic programming (NLP) help leaders with the ability to deal with the impact of COVID-19? *Knowledge Management Research & Practice*, No. 19(4), pp. 475-483, doi: 10.1080/14778238.2020.1860667.
8. Gzowska, W. (2016). Wybrane media społecznościowe jako narzędzie wspierające rekrutację. *HRM [ZZL]*, No. 1 (5), pp. 79-92.
9. Hosain, M.S. (2023). Integration of social media into HRM practices: a bibliometric overview. *PSU Research Review*, Vol. 7, No. 1, pp. 51-72. Retrieved from: <https://doi.org/10.1108/PRR-12-2020-0039>, 31.08.2023, 25.08.2023.

10. Hunkenschroer, A.L., Luetge, C. (2022). Ethics of AI-Enabled Recruiting and Selection: A Review and Research Agenda. *Journal of Business Ethics. Springer Science and Business Media B.V., No. 178*, pp. 977-1007. Retrieved from: <https://doi.org/10.1007/s10551-022-05049-6>, 24.08.2023.
11. Jacobson, J., Gruzd, A. (2020). Cybervetting job applicants on social media: the new normal? *Ethics and Information Technology, No. 22(2)*, pp. 175-195, doi: 10.1007/s10676-020-09526-2. Retrieved from <https://link.springer.com/article/10.1007/s10676-020-09526-2>, 7.07.2022.
12. Kawka, T., Listwan, T. (2010). Dobór pracowników. In: T. Listwan (Eds.), *Zarządzanie kadrami* (pp. 101-147). Warszawa: C.H. Beck.
13. Koivunen, S., Ala-Luopa, S., Olsson, T., Haapakorpi, A. (2022). The March of Chatbots into Recruitment: Recruiters' Experiences, Expectations, and Design Opportunities. *Computer Supported Cooperative Work, No. 31(3)*, pp. 487-516. Retrieved from: <https://doi.org/10.1007/s10606-022-09429-4>, 24.08.2023.
14. Lupa, I. (2016). Media społecznościowe jako narzędzie pracodawcy w procesie selekcji kandydatów. In: I. Miciuła (Eds.), *Wybrane aspekty badawcze. Gospodarka-Zarządzanie-Innowacje. Tom I* (pp. 10-21). Katowice: Wydawnictwo Naukowe Sophia.
15. Mamatha, K., Kumar Thoti, K., Professor, A. (2022). E-Recruitment and E-Selection Process Improves the E-Human Resource Management activities in Information Technology Companies in Hyderabad. *Journal Of Algebraic Statistics, Vol. 13, No. 2*, pp. 1576-1584. Retrieved from: <https://publishoa.com/index.php/journal/article/view/328/301>, 25.08.2023.
16. Olszak, E. (2014). Nowoczesny dobór personelu - kierunki rozwoju metod i narzędzi w rekrutacji i selekcji. *Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, No. 349*, pp. 283-294, doi: 10.15611/pn.2014.349.24.
17. Rahman, M., Aydin, E., Haffar, M., Nwagbara, U. (2022). The role of social media in e-recruitment process: empirical evidence from developing countries in social network theory. *Journal of Enterprise Information Management, Vol. 35, No. 6*, pp. 1697-1718. <https://doi.org/10.1108/JEIM-12-2019-0382>.
18. Rys, M. (2023). Invention Development. The Hackathon Method. *Knowledge Management Research & Practice, Vol. 21, Iss. 3*, pp. 499-511, doi: 10.1080/14778238.2021.1911607.
19. Sołek-Borowska, C., Wilczewska, M. (2018). New technologies in the recruitment and selection process. *Modern Management Systems, Vol. 13, Iss. 3*, pp. 219-232. Retrieved from: <https://doi.org/10.37055/nsz/129504>, 24.08.2023.
20. Tippins, N.T., Oswald, F.L., McPhail, S.M. (2021). Scientific, Legal, and Ethical Concerns About AI-Based Personnel Selection Tools: A Call to Action. *Personnel Assessment and Decisions, No. 7, Iss. 2*, pp. 1-22, doi: <https://doi.org/10.25035/pad.2021.02.001>. Retrieved from: <https://scholarworks.bgsu.edu/pad/vol7/iss2/1>, 24.08.2023.

21. Tullier, M.L. (2006). *Networking. Jak znaleźć pracę i odnieść sukces zawodowy dzięki tworzeniu sieci kontaktów*. Kraków: Wolters Kluwer Polska.
22. Wang, S., Yeoh, W., Ren, J., Lee, A. (2022). Learnings and Implications of Virtual Hackathon. *Journal of Computer Information Systems*, Vol. 62, Iss. 3, pp. 547-559, doi: 10.1080/08874417.2020.1864679.
23. Witkowski, T. (2010). Thirty-five years of research on Neuro-Linguistic Programming. NLP research data base. State of the art or pseudoscientific decoration? *Polish Psychological Bulletin*, Vol. 41(2), pp. 58-66. Retrieved from: <https://doi.org/10.2478/v10059-010-0008-0>, 28.08.2023.
24. Wolniak, R. (2019). Internet usage in the recruitment and selection of employees. *Zeszyty Naukowe Politechniki Śląskiej. Organizacja i Zarządzanie*, No. 140, pp. 401-411, doi: 10.29119/1641-3466.2019.140.33.
25. Woźniak, J. (2020). *Zarządzanie pracownikami w dobie Internetu*. Warszawa: Wolters Kluwer Polska.
26. Zacny, B., Kania, K., Sołtysik, A. (2019). Stosunek potencjalnych kandydatów do wykorzystania danych z mediów społecznościowych i narzędzi AI w procesie rekrutacji. *HRM [ZZL]*, 1(5), pp. 39-55.