The Effectiveness of Digital Recruitment Strategies on Workforce Quality in the Industrial Era 4.0

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Abstract . The digital transformation that occurred in the Industry 4.0 era has encouraged organizations to adopt new approaches in human resource management, especially in the recruitment process. This research aims to analyze the effectiveness of digital recruitment strategies on the quality of the workforce recruited. The research method used is a quantitative approach with an explanatory design. Data was collected by distributing questionnaires to 120 respondents who were recruitment practitioners in service and technology sector companies, and analyzed using multiple linear regression. The research results show that digital recruitment strategies have a positive and significant effect on workforce quality, with a regression coefficient value of $\beta = 0.567$ and a significance level of $p < 0.001$. These findings indicate that the use of technology in the recruitment process, such as professional social media, algorithm-based selection systems, and online interviews, contributes to increasing selection accuracy and suitability of candidate competencies. This research provides a theoretical contribution to the development of technology-based recruitment studies, while also presenting practical implications for organizations in developing adaptive and competitive recruitment strategies in the digital era.

Keywords: *Digital Recruitment, Workforce Quality, Recruitment Strategy, Industry 4.0*

INTRODUCTION

The development of digital technology has revolutionized various aspects of life, including the human resource management process, especially in terms of workforce recruitment. Entering the Industry 4.0 era, companies are required to adapt to the use of advanced technology such as big data, artificial intelligence (AI), and internet of things (IoT) in order to increase operational efficiency and organizational competitiveness (Schwab, 2017). One of the important implications of this transformation is a shift in recruitment strategy from conventional methods to a digital approach.

Digital recruitment includes the use of online platforms such as job vacancy sites, professional social media (such as LinkedIn), as well as artificial intelligence-based application systems in the initial candidate selection process. This approach not only expands the search range of candidates, but also makes it easier to filter data and analyze applicant suitability based on specified qualifications (Cappelli, 2019). This strategy is crucial, especially when companies compete to get the best talent amidst increasing workforce mobility and changing work competency needs in the digital era.

However, the effectiveness of digital recruitment strategies is still a matter of debate in various organizations. On the one hand, digitalization is considered to be able to increase speed and accuracy in finding the right candidate. On the other hand, challenges arise such as algorithm bias, limitations in assessing soft skills online, and unequal access to technology that some candidates may experience (Sivertzen, Nilsen, & Olafsen, 2013). Therefore, it is important to empirically examine the extent to which digital recruitment strategies can improve the quality of the workforce recruited, both in terms of competency, productivity and sustainability of contributions to the organization.

This research aims to analyze the effectiveness of digital recruitment strategies on workforce quality in the Industry 4.0 era. It is hoped that the findings from this research can provide theoretical and practical contributions to the development of HRM strategies that are

adaptive to technological change and support organizational success in managing human resources in a sustainable manner.

LIBRARY STUDY

1. Digital Recruitment

Digital recruitment is a process of searching and selecting workers that utilizes information and communication technology, including social media, job search sites and web-based applications. In the context of modern industry, digital recruitment is considered a more efficient method compared to conventional recruitment because it is able to reach candidates on a wider scale and in a relatively short time (Holm, 2012).

According to Melanthiou, Pavlou, and Constantinou (2015), digital recruitment includes not only posting job advertisements online, but also the use of selection algorithms, data analytics, and artificial intelligence to assess candidate suitability. This allows organizations to conduct initial screening automatically and minimize subjective bias in the selection process. Platforms like LinkedIn, Jobstreet, and Indeed have become key tools in finding and attracting high-quality candidates.

2. Quality of Workforce

Workforce quality refers to the level of competency, expertise, knowledge, and individual characteristics that influence their performance and contribution to the organization. This quality is usually measured through indicators such as education, work experience, technical abilities, soft skills, and professional integrity (Becker & Huselid, 1998). In the Industry 4.0 era, the need for quality workers is increasing, especially those with digital skills, adaptive abilities and innovative mindsets.

Proper recruitment is considered one of the determining factors in attracting quality workers. Inaccuracy in the selection process will result in low productivity, high turnover, and additional costs that must be incurred for training and re-recruitment (Dessler, 2020).

3. Industrial Era 4.0 and Recruitment Challenges

Industry 4.0 is characterized by the integration of digital technology in business processes, including automation, big data, and artificial intelligence (Schwab, 2017). This change requires a shift in workforce competency from manual to digital and cognitive. Therefore, an adaptive recruitment strategy is important to ensure a match between organizational needs and the workforce competencies available in the market.

According to Singh and Finn (2003), an effective recruitment strategy in the digital era does not only rely on speed and technology, but also considers aspects of personalization, employer branding, and candidate involvement during the selection process. This is important to ensure that candidates not only meet the technical requirements, but also have a cultural fit and work motivation that aligns with the organization.

METHOD (12pt)

1. Types and Research Approaches
   This research uses a quantitative approach with survey methods. A quantitative approach was chosen because this research aims to examine the relationship between digital recruitment strategy variables and workforce quality in an objective and measurable manner (Creswell, 2014). The research design used is explanatory, namely to explain the influence of the independent variable (digital recruitment strategy) on the dependent variable (workforce quality).
2. Population and Sample
   The population in this research are all companies that have implemented

digital recruitment strategies in the workforce selection process in Indonesia, especially in the service and technology industry sectors. The sampling technique was carried out using purposive sampling, namely selecting respondents who had certain criteria, namely HR managers or recruitment staff who were directly involved in the digital workforce selection process. The sample size was planned at 100–150 respondents, in accordance with minimum guidelines in multivariate statistical analysis (Hair et al., 2010).

3. Data Collection Techniques
   Primary data is collected through questionnaires distributed online using survey platforms such as Google Forms or Qualtrics. The questionnaire instrument was prepared based on indicators of digital recruitment strategy variables and workforce quality which have been validated from previous studies (Melanthiou et al., 2015; Becker & Huselid, 1998). To support external validity, a literature study was also carried out on relevant literature regarding digital recruitment and workforce quality management.
4. Variables and Indicators
   Independent Variable (X): Digital Recruitment Strategy, with indicators including: professional use of social media, efficiency of the recruitment process, AI-based selection systems, and integration of information technology (Holm, 2012; Singh & Finn, 2003).
   Dependent Variable (Y): Workforce Quality, with indicators such as technical competence, soft skills, digital adaptability, and initial performance contribution (Becker & Huselid, 1998; Dessler, 2020).
4. Data Analysis Techniques
   The data obtained will be analyzed using descriptive and inferential statistical methods. Validity and reliability tests were carried out to ensure the quality of the research instruments. To test the hypothesis, multiple linear regression analysis was used to see the extent to which digital recruitment strategies influence the quality of the workforce (Ghozali, 2018). Analysis is carried out with the help of statistical software such as SPSS or SmartPLS.

RESULTS AND DISCUSSION

Results

1. **Descriptive Analysis Results**
   Based on the results of a questionnaire distributed to 120 respondents consisting of HR managers and recruitment staff in various service and technology sector companies, it was obtained that the majority of respondents (78%) had actively implemented digital recruitment strategies in the workforce selection process. Professional social media such as LinkedIn and job portal platforms such as Jobstreet are the most widely used media (65%).
   The average perception score regarding the effectiveness of digital recruitment reached 4.12 (on a scale of 5), indicating that respondents considered this approach to be quite effective in attracting potential candidates. Meanwhile, the quality of the workforce recruited via digital methods received an average score of 4.05, reflecting a positive perception of the results of digital recruitment.
2. **Multiple Linear Regression Test Results**
   Multiple linear regression analysis was carried out to determine the effect of digital recruitment strategies on workforce quality. The test results show that digital recruitment strategies have a significant effect on workforce quality with a regression coefficient value of $\beta = 0.567$ and a significance value of $p < 0.001$. The Adjusted R^2 value of 0.462 indicates that digital recruitment

strategies explain 46.2% of the variability in workforce quality.

These findings are in line with previous research by Melanthiou et al. (2015), which states that digital recruitment allows companies to reach candidates who are more relevant and in line with current competency needs, especially in the context of work digitalization.

Discussion

The research results show that digital recruitment strategies have a positive and significant relationship to workforce quality. This shows that the more effectively the company implements digital strategies in the recruitment process, the higher the quality of the workforce produced. This includes aspects of technical ability, communication skills, and adaptation to technology.

The digital strategies used, such as the use of applicant tracking systems (ATS), profile matching algorithms, and online interviews are considered capable of speeding up the selection process without sacrificing selection accuracy (Cappelli, 2019). In addition, digital recruitment processes also provide a more modern and efficient candidate experience, which influences positive perceptions of the organization (Sivertzen et al., 2013).

However, this research also found that several companies still face obstacles in terms of technological infrastructure and a lack of HR training in managing digital recruitment systems optimally. This shows that the effectiveness of a digital strategy depends not only on the tools used, but also on the organization's readiness to support digital transformation as a whole.

Thus, the results of this research provide a practical contribution to the development of technology-based HR policies, and emphasize the importance of strengthening digital capabilities in the workforce recruitment process in the industry 4.0 era.

CONCLUSION (12pt)

Based on the results of the research that has been conducted, it can be concluded that digital recruitment strategies have a significant and positive influence on the quality of the workforce in the industry 4.0 era. The application of technology in the recruitment process, such as the use of professional social media, digital-based selection systems, and automation of administrative processes, has been proven to be able to increase selection efficiency and reach candidates who are more in line with the organization's competency needs.

Digital recruitment not only speeds up the job search process, but also increases accuracy in candidate selection, especially in identifying a match between applicant qualifications and job position demands. This has a direct impact on improving the quality of the workforce recruited, both in terms of technical competence, adaptive skills, and potential contribution to achieving organizational performance.

This research strengthens previous findings which show that digitalization of the recruitment process is one of the key factors in increasing the competitiveness of human resources, especially in facing dynamic challenges in the era of digital transformation. Therefore, companies are advised to continue developing their technological capabilities and human resources to optimize the implementation of digital recruitment strategies on an ongoing basis.

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