Implementation of Competency-Based Performance Appraisal System to Ensure Accuracy and Effectiveness of Employee Evaluation

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A R T I C L E   I N F O

A B S T R A C T

Competency-based performance appraisal systems have become an increasingly adopted approach in human resource management to improve the accuracy of employee evaluations and support the achievement of organizational goals. This study aims to analyze the effectiveness of these systems to improve the quality of performance-based decision-making and identify optimal strategies for developing competency indicators that are aligned with organizational needs. Using a literature study approach, this research examines various competency-based performance assessment models, the role of technology to support the implementation of this system, and the challenges faced in its application. The results show that a competency-based system allows organizations to develop more objective and data-driven evaluation methods that increase transparency and reliability in the assessment process. The integration of technologies, such as artificial intelligence and data analytics, is proven to contribute to reducing bias and increasing efficiency in performance evaluation. Developing effective competency indicators requires a data-driven approach, machine learning modeling, and integration with the organization's business strategy. Challenges in implementing the system include adapting to the changing needs of the industry and the need for training of assessors to ensure an accurate evaluation process. Therefore, organizations need to develop flexible, technology-based and employee development-oriented evaluation mechanisms to ensure the sustainability of an effective competency-based assessment system.

INTRODUCTION

In the era of globalization and increasingly fierce business competition, organizations in various sectors are required to improve the effectiveness of the human resource management system (HRM), especially to assess employee performance. Competency-based performance appraisal systems are becoming an increasingly applied approach because they provide a more objective method for evaluating individual contributions to organizational goals. This approach allows companies to measure employee performance based on core competencies relevant to their roles and responsibilities in the organization (Ravikanth, 2016). Thus, companies can improve accuracy in performance evaluation and create more effective employee development policies.

In the healthcare industry sector, for example, a competency-based assessment system has been implemented to ensure that employees have skills and abilities that match the needs of the job. A study conducted by Solomonson and Giberson (2019) revealed that the implementation of a Competency-Based Performance System in the information technology sector for health services has improved work efficiency and employee satisfaction. This system uses a competency model developed through stakeholder involvement, resulting in evaluation criteria that are more in line with industry needs.

In the public sector, the application of competency-based performance appraisal systems is also experiencing rapid development. Research conducted by Hii and Ahmad (2015) in the Malaysian government sector shows that the effectiveness of this system depends on the competence of the appraiser to provide a fair and objective evaluation. Non-standardized systems or

lack of training for appraisers can lead to inaccuracies in evaluation results, which ultimately impacts employee satisfaction as well as the overall effectiveness of HR management policies.

With the widespread implementation of competency-based performance appraisal systems in various sectors, further research is needed to identify factors that influence the effectiveness of these systems, as well as strategies that can be implemented to improve fairness and transparency in the evaluation process.

Competency-based performance appraisal systems have become the main method of evaluating employee performance in various organizations. However, its implementation is faced with a number of challenges that can hinder its effectiveness (Ahmad et al., 2014). One of the main problems is the lack of understanding and acceptance of the system by employees and managers. In some organizations, especially in the public sector, supervisors often do not have sufficient understanding of competency-based evaluation methods, resulting in inconsistencies in assessment (Khurshid et al., 2017). Employees also feel that appraisals are not conducted objectively, which can lead to dissatisfaction and lack of motivation at work.

The lack of training for appraisers to conduct competency-based performance evaluations is a significant obstacle. In many organizations, managers often do not have sufficient skills to accurately and fairly assess employee competencies (Patro, 2017). This results in bias in appraisals, where subjective factors such as personal closeness to the employee or personal preferences may influence the evaluation results. Without proper training, the system may lose its credibility and not provide optimal benefits to the organization.

Another problem is the limited use of tools and technology to support competency-based performance appraisal systems. Most organizations still use manual methods to evaluate employee performance, which can lead to data inaccuracies and longer processes (Borisova, 2019). The lack of technology integration such as artificial intelligence (AI)-based HR management systems or data analytics makes it difficult for organizations to collect, process, and analyze performance data in real-time.

The misalignment between the competencies measured in the assessment system and the strategic needs of the organization is also an obstacle that often arises. In many cases, companies set competency indicators without considering their relevance to long-term business goals (Ayege, 2019).

As a result, the evaluations conducted do not provide clear insights into how employees can better contribute to the achievement of organizational targets.

The last issue is resistance to change in implementing a competency-based assessment system. In some organizations, especially those with a traditional work culture, employees and managers feel uncomfortable with a competency-based appraisal system because it changes the appraisal methods they are previously familiar with (Sidin, 2016). Lack of effective communication regarding the benefits of this system can exacerbate resistance to change, ultimately hindering the effectiveness of the system's implementation.

Overall, the various issues that have arisen in competency-based performance appraisal systems suggest that its success is highly dependent on good understanding from employees and managers, adequate training for appraisers, utilization of technology in evaluation, alignment with organizational strategy, and the right approach to overcome resistance to change.

Competency-based performance appraisal systems are becoming an important instrument in modern human resource management due to their ability to measure performance based on objective and measurable standards. One of the main reasons why these systems should be further scrutinized is the importance of improving the accuracy and effectiveness of employee performance evaluations. Competency-based appraisal systems allow organizations to assess the workforce more systematically, reduce bias in evaluations, and increase the reliability of assessments between supervisors and employees (Baudet et al., 2017). With this approach, organizations can more effectively identify skill gaps and devise more accurate employee development strategies.

Further research is needed to bridge the gap between competency models and organizational needs. Although competency-based systems have been widely implemented in the public and private sectors, there are still challenges to adapt competency models to specific industry needs (Pujotomo et al., 2019). In some cases, the competency indicators used in performance evaluation are not always relevant to the development of organizational strategies, leading to assessment results that do not reflect the effectiveness of actual performance. Therefore, it is necessary to conduct further research on the development of competency models that are more flexible and adaptive to changes in the global business environment.

In addition to technical and implementation aspects, the urgency of creating a fair and transparent appraisal system is a major concern in this study. Perceptions of fairness in the appraisal process significantly impact job satisfaction and organizational commitment (Azidin et al., 2015). When employees believe the appraisal system lacks fairness or transparency, they are likely to experience decreased motivation and loyalty to the organization. Further research is needed to develop effective communication and employee engagement strategies during the evaluation process, ensuring that the system is better accepted and positively influences the organizational work culture.

Thus, observing and researching competency-based performance appraisal systems is a must to ensure that this approach can be effectively implemented, suits the needs of the organization, and is able to create a more transparent work environment oriented towards improving employee performance.

This study aims to analyze the effectiveness of a competency-based performance appraisal system to improve the accuracy and objectivity of employee evaluations. This system is expected to provide a more structured assessment method with clear competency indicators so that organizations are able to manage human resources more effectively. By understanding how this system can improve the quality of employee evaluations, this research can provide insight for organizations to design more accurate and competency-based appraisal policies.

This research aims to examine the role of technology to support the implementation of competency-based performance appraisal systems (Jamaluddin et al., 2013). With the development of technology, especially artificial intelligence (AI) and data analytics, evaluation systems can be conducted more efficiently and reduce subjectivity in the assessment process. The use of technology is expected to increase transparency and speed to manage performance appraisal results so that organizations can make more informed decisions based on accurate data.

Another objective of this research is to identify effective strategies for developing competency indicators aligned with the organization's vision and goals. Properly developed competency indicators will ensure that the assessment system functions as an evaluation tool and a foundation for employee development, productivity enhancement, and improved decision-making in human resource management. This research aims to provide recommendations for organizations to implement a more optimal competency-based performance appraisal system that can be widely applied across various sectors.

RESEARCH METHOD

This research uses a literature study approach to analyze the competency-based performance appraisal system. The literature study allowed the researcher to review theories, concepts, and previous research results to gain an understanding of the effectiveness and challenges in implementing this system. This approach is particularly relevant in research that aims to develop performance appraisal models, especially competency-based ones, as it provides a strong reference framework for formulating evaluation concepts and indicators (Fauzan, 2018).

Data sources in this study were obtained from international scientific journals, academic books, and relevant research reports. This research draws on competency-based evaluation models that have been tested in various industrial sectors and organizations, as proposed by Prasad, Vaidya, and Rao (2016) in their analysis of core competencies that influence performance appraisal systems in agricultural research institutions. Data collection techniques were conducted by searching the literature on various performance appraisal methods, including 360-degree appraisal methods, rating scales, and analytic algorithm-based approaches.

The data collected was analyzed using a descriptive-qualitative analysis method. This approach enabled the research to identify trends, patterns, as well as differences in the implementation of competency-based appraisal systems across different organizations (Fatimah et al., 2018; Darmawan et al., 2020). As stated by Quan et al. (2018), the application of data mining in performance evaluation analysis has helped organizations to develop artificial intelligence-based systems that can reduce subjectivity in the assessment process.

The credibility of this research is strengthened by triangulating sources, which compares various studies that have been conducted in this field to obtain more objective conclusions. Data validity is also maintained by reviewing research results applied in various industry sectors, such as education, healthcare, and technology sectors, as researched by Dharmanna et al. (2018) on web-based algorithmic analysis for competency-based performance appraisal systems. With this approach, the research is expected to provide comprehensive insights into the effectiveness, challenges, and optimal strategies in the implementation of competency-based performance appraisal systems.

RESULT AND DISCUSSION

Competency-Based Performance Appraisal System to Improve Effectiveness and Accuracy of Employee Evaluation

Competency-based performance appraisal systems have been proven to increase the effectiveness and accuracy of evaluating employee performance with a more structured and objective approach. By measuring performance based on job-relevant skills and behaviors, these systems reduce subjectivity in employee appraisals. The implementation of a competency-based appraisal system can increase the reliability between employee and supervisor self-assessments, leading to better accuracy in performance evaluation (Baudet et al., 2017).

One of the key aspects of the effectiveness of competency-based appraisal systems is the clarity of assessment criteria. These systems enable organizations to establish transparent and measurable evaluation standards, which enhances employee satisfaction with the appraisal process (Iqbal et al., 2015). By providing specific indicators of competence, this approach helps reduce bias in evaluations and minimizes reliance on the appraiser's personal preferences. Consequently, employees gain a clearer understanding of the expectations and criteria used for their evaluations, leading to improved performance (Darmawan et al., 2020). Furthermore, clear assessment criteria foster a fairer and more objective environment, supporting employees' professional development and increasing accountability within the evaluation process.

The utilization of technology in competency-based performance appraisal systems is a crucial factor for enhancing evaluation accuracy. Integrating technology into the appraisal process enables organizations to collect employee performance data more accurately and in real-time, leading to more objective, data-driven evaluations (Nguyen, 2017). By implementing such a system, organizations can mitigate cognitive biases that often occur in manual appraisals (Mahyanalia et al., 2017). However, the effectiveness of this system also relies on the training provided to appraisers, ensuring they evaluate performance based on established competencies. Training programs that encompass an understanding of competency dimensions can significantly improve the accuracy of appraisal results (Sánchez et al., 2019). Appraisers who receive comprehensive training are more likely to effectively distinguish between performance that meets and does not meet the established competency standards, ultimately leading to fairer evaluations.

The accuracy of competency-based performance appraisal systems is also supported by multi-source feedback approaches, such as 360-degree appraisal. This method provides feedback from various sources, including superiors, coworkers, and subordinates, which increases the objectivity and validity of the assessment results (Lelavijit & Kiattisin, 2020). With this approach, the system can provide a more comprehensive picture of employee performance in various work situations. Competency-based appraisal systems improve evaluation accuracy and contribute to employee development. The system can be used as a tool to identify individual training and development needs so that employees can improve their skills according to job demands (Prompukdee & Tuksino, 2015).

Competency-based performance appraisal systems improve the effectiveness and accuracy of employee evaluations by providing clearer assessment standards. It also helps reduce bias in evaluation, leverages technology, involves multiple sources of feedback, and encourages individual development. With proper implementation, this system can be an effective tool to improve the quality of human resource management in organizations. It improves the evaluation process, and increases employee motivation and engagement. By focusing on relevant competencies, organizations can more easily identify strengths and areas for development, thus supporting overall employee growth. As a result, competency-based performance appraisal systems contribute to the achievement of organizational goals and overall performance improvement.

The Role of Technology to Support the Implementation of Competency-Based Performance Appraisal System to Improve the Efficiency and Reliability of the Evaluation Process

Technology plays an important role in supporting the implementation of competency-based performance appraisal systems by improving the efficiency and reliability of the evaluation process (Kiley et al., 2015). One of the main benefits of using technology in these systems is the automation of performance data collection and analysis. Baudet, Ras, and Latour (2017) developed Cross Skill™ technology to support a digital competency-based performance appraisal system, which enables organizations to generate competency-based self-assessment documents more accurately and quickly (Baudet et al., 2017). With this technology, companies can manage and assess employee performance more efficiently, reducing human error in evaluation.

In addition to automation, technology also enables the use of data analytics and artificial intelligence to evaluate competency-based performance. Quan et al. (2018) developed a data mining-based system for employee performance appraisal, which enables organizations to identify performance patterns based on historical data (Quan et al., 2018). With the help of AI, organizations can make predictions regarding employee potential, adjust competency development strategies, and provide more appropriate feedback to each individual.

The use of technology in performance appraisal systems also supports the application of multi-source-based evaluation methods, such as 360-degree feedback. Lelavijit and Kiattisin (2020) proposed an employee evaluation model using an Adaptive Neuro-Fuzzy Inference System (ANFIS) that integrates various hierarchy-based competency factors to provide a more objective assessment (Lelavijit & Kiattisin, 2020). This technology enables more complex data processing by considering both qualitative and quantitative factors in performance evaluation.

Cloud-based platforms and human resource management systems (HRMS) have increased transparency and accessibility in the performance evaluation process. The implementation of technology-based appraisal systems in the Nigerian public sector improves the efficiency of performance evaluation administration, reduces bureaucracy, and increases the speed of decision-making (Aro-Gordon, 2016). With cloud-based systems, employees can access their evaluation results in real-time, increasing transparency and participation in the appraisal process.

In the era of digitalization, the integration of performance appraisal systems with technology-based work management tools, such as performance dashboards and employee tracking systems, further improves evaluation accuracy. Digital performance indicator-based evaluation systems allow organizations to link individual achievement metrics with organizational business targets (Curzi et al., 2019). Thus, decision-making regarding promotions, incentives, or training can be made more accurately based on systematically documented performance data (Werdati et al., 2020).

Finally, the use of technology in competency-based performance appraisal systems also supports adaptation to remote and flexible work environments. The implementation of technology in performance evaluation in multinational companies in Yemen allows organizations to evaluate employees from various locations without geographical barriers (Ahmed, 2016). With technology, performance appraisals can be conducted through video-based interviews, mobile applications, and automated analytics that ensure employees still get feedback despite working remotely.

Technology plays a key role in improving the efficiency and reliability of competency-based performance appraisal systems by automating data processing, applying artificial intelligence in evaluation, increasing transparency through cloud-based systems, and enabling more objective multi-source evaluation methods. With the optimal application of technology, this appraisal system can function more effectively to manage and improve employee performance in various industry sectors.

Optimal Strategies for Developing Competency Indicators Aligned with Organizational Objectives to Improve the Quality of Performance-Based Decision Making

The development of effective competency indicators is essential to ensure that the performance appraisal system can optimally support organizational goals. Toader and Brad (2015) propose that competency assessments based on Key Performance Indicators (KPIs) should consider specific performance levels that can be clearly measured. In their study, KPI-based measurement methods help organizations to ensure that performance appraisals are not subjective, but based on empirically testable standards.

One of the optimal strategies for compiling competency indicators is to use data-driven analytical methods to identify key skills required in organizations (Padma et al., 2018). Zhang, Jiang, Liu, and Liu (2020) developed the Decision-Making Trial and Evaluation Laboratory (DEMATEL) model to evaluate the most influential competency indicators in the performance of academic institutions. Using this approach, organizations can identify indicators that have the most significant impact on achieving strategic goals.

In addition to a data-driven approach, it is important for organizations to develop competency indicators that are inclusive and based on equity and justice values. Equity-driven performance indicators can improve the effectiveness of decision-making by ensuring that all employees have fair access to development and evaluation opportunities (Ludvik, 2019). This is critical to creating a fairer work environment and increasing employee motivation (Darmawan, 2017).

Another strategy that can be applied is to use machine learning-based approaches to adaptively construct competency indicators. Chen and Zhou

(2020) developed an artificial intelligence-based model that can estimate performance variables based on historical data and skill development trends. With this approach, organizations can automatically update competency indicators based on industry needs and labor market changes.

The integration of competency management systems with knowledge-based decision-making-based assessment models can improve evaluation effectiveness. Bolukbas and Guneri (2017) found that the use of Knowledge-Based Decision Making-based models can help companies to develop competency indicators that are more targeted and in line with organizational needs (Bolukbas & Guneri, 2017). Thus, organizations can ensure that the indicators used are aligned with business strategies and long-term goals.

Finally, an important strategy is to link competency indicators with individual achievements and organizational business results. A competency-based performance management approach can help organizations to link performance indicators to the strategic success of the business (Korenková et al., 2019). With this strategy, organizations assess individual performance, and understand their contribution to the overall achievement of the company.

Overall, optimal competency indicator development should be based on data analytics, consider the value of fairness, leverage machine learning technologies, and link individual performance to the organization's business strategy. With this approach, organizations can improve the quality of performance-based decision-making and ensure that the competency-based performance appraisal system functions effectively to achieve corporate goals.

CONCLUSION

A competency-based performance appraisal system is an effective approach to improve the accuracy of employee evaluations and support the achievement of organizational goals. By focusing on relevant competency indicators, these systems enable organizations to objectively assess employees based on skills, knowledge, and behaviors that match job demands. Technology plays an important role in supporting the implementation of this system through automation of data processing, artificial intelligence-based analysis, and greater transparency in the evaluation process. The optimal strategy for developing competency indicators aligned with organizational goals involves the use of data-driven analytics, integration with knowledge-based decision-making methods, and adoption of machine learning-based evaluation models to accommodate changes in competency needs across industries.

While competency-based performance appraisal systems have been proven to improve the effectiveness of employee evaluations, there are still challenges in their implementation. One of the main challenges is the need to adjust competency indicators with industry dynamics and evolving organizational needs. Therefore, organizations need to develop evaluation mechanisms that are flexible and can be updated regularly to remain relevant. Training for assessors must also be strengthened to ensure that the evaluation process is carried out objectively and in accordance with established competency standards. Technology integration in the assessment system should be improved, including the utilization of artificial intelligence and data analytics to reduce bias in assessment. With these strategic steps, organizations can leverage the competency-based performance appraisal system as an effective tool to improve productivity, employee development, and the achievement of business goals more optimally.

REFERENCES

Ahmad, N., Z. Yue, R. Saeed, D. Darmawan, M. Jaykumar & A. A. Mohamed. (2014). Effective Implementation of Strategic Plans and Actions in Modern Corporate Management. *The Business &Management Review*, 4(2), 295-312.

Ahmed, H. M. (2016). Technology in Performance Appraisal System with Specific Reference to Group of Companies HSA and its Partners in the Republic of Yemen. *IBMRD's Journal of Management & Research*, 5(1), 1-6.

Aro-Gordon, S. O. (2016). Leveraging Information Technology for Effective Performance Appraisal in the Nigerian Public Service. *International Journal of Management and Research*, 7(2), 21-38.

Ayege, F. O. (2019). Challenges Faced by Managers in Conducting Performance Appraisals in Organizations. *International Journal of Progressive Science and Technologies*, 13(1), 103-109.

Azidin, S. S., A.R. Romle, S. Othman, N. A. Yusof, & M. S. Yusof. (2015). The Implementation of Performance Appraisal System: Perceived Fairness, Employee Satisfaction, and Organizational Commitment. *International Journal of Administration and Governance,* 1(14), 115-119.

Baudet, A., E. Ras, & T. Latour. (2018). Semi-automatic Generation of Competency Self-assessments for Performance Appraisal. *International Conference on Human Factors in Computing Systems*, 829, 26-39.

Bolukbas, U., & A. Guneri. (2018). Knowledge-Based Decision Making for the Technology Competency Analysis of Manufacturing Enterprises. *Applied Soft Computing*, 67, 781-799.

Borisova, A. (2019). Modern Approaches to Solve the Problems in Performance Appraisal of Employees - National and European Context. *European Journal of Human Resource Management*, 10(4), 77-82.

Chen, Y., & Y. Zhou. (2020). Machine Learning-Based Decision Making for Time-Varying Systems: Parameter Estimation and Performance Optimization. *Knowl. Based Syst.*, 190, 1-10.

Darmawan, D. (2017). The Effects of The Big Five Personality on Job Performance. *Management & Accounting Research Journal*, 2(1), 36-42.

Darmawan, D., R. Mardikaningsih, E. A. Sinambela, S. Arifin, A. R. Putra, M. Hariani, M. Irfan, Y. R. Al Hakim, & F. Issalillah. (2020). The Quality of Human Resources, Job Performance and Employee Loyalty. *International Journal of Psychosocial Rehabilitation*, 24(3), 2580-2592.

Dharmanna, L., B. U. Naik, N. ChaithraKumari, P. Sharma, & S. R. Naik. (2018). Design and Implementation of Web-based Algorithm for the Automatic Analysis of the Performance-based System Staff Appraisal (PBSA). *International Journal of Engineering Research and Technology*, 6(15), 1-5.

Fatimah, S., A.K. Wahyudi, E. Retnowati, D. Darmawan, R. Mardikaningsih & M. Kemarauwana. (2018). The Importance of Scale in Attention Organizations to Issues, *Academy of Management Review*, 43(2), 217–241.

Fauzan, R. (2018). Model Performance Assessment Research Development Based on Competence using Rating Scales Method, 360 Degree, and Algorithm Analytical Network Process at Telimek Lipi. *IOP Conference Series: Materials Science and Engineering*, 407(1), 1-7.

Hii, L., & R. Ahmad. (2015). Rater Competency in Conducting Performance Appraisal in the Malaysian Public Sector. *International Journal of Social Science and Humanity*, 5(1), 69-74.

Iqbal, M., S. Akbar, & P. Budhwar. (2015). Effectiveness of Performance Appraisal: An Integrated Framework. *International Journal of Management Reviews*, 17(4), 510-533.

Jamaluddin, A., L. C. Hoe, A. A. Mohamed, D. Darmawan, A.T. Hannan, M. Ismail & N. Ahmad. (2013). Human Resource Management Implications of Technology-Based Organizational Forms. *Academy of Management Journal*, 23(2), 83-94.

Khurshid, A., Khan, A., & Alvi, S. (2017). Performance Appraisal Challenge at Pakistan Civil Aviation Authority (CAA). *Asian Journal of Management Cases*, 14(2), 198-225.

Kiley, A.M., et al. (2015). Strategic Flexibility and the Virtue of Innovation in Responding to the Dynamics of Change. *The Journal of Management Studies*, 31(3), 865-878.

Korenková, V., J. Zavadsky, & M. Lis. (2019). Linking a Performance Management System and Competencies: Qualitative Research. *Engineering Management in Production and Services*, 11(1), 51-67.

Lelavijit, K., & S. Kiattisin. (2020). An Integrated Conceptual Model of 360-Degree Performance Appraisal and Candidate Forecasting Using Adaptive Neuro-Fuzzy Inference System. *Journal of Mobile Multimedia*, 16(4), 449-476.

Ludvik, M. B. (2019). What Makes a Performance Indicator an Equity-Driven, High-Performance Indicator? *Assessment Update*, 31(2), 1-16.

Mahyanalia, R., K. S. Siagian, D. Darmawan, A. Gunawan, & S. Arum. (2017). Job Insecurity and an Integrative Review for Future Research. *Journal of Management*, 43(6), 1911–1939.

Mardikaningsih, R., S. Arifin, A. R. Putra, & M. Hariani. (2017). The Effect of Motivation and Work Commitment on The Performance of Agricultural Extension Agents, *Jurnal Agrimas*, 1(2), 115-124.

Mardikaningsih, R. & A. R. Putra. (2021). Efforts to Increase Employee Work Productivity through Job Satisfaction and Job Training, *Studi Ilmu Sosial Indonesia*, 1(1), 51-64.

Mardikaningsih, R. (2021). Correlation of Worker Welfare and Industrial Relations. *Cashflow: Current Advanced Research on Sharia Finance And Economic Worldwide*, 1(1), 29-32.

Nguyen, T. (2017). Performance Appraisals: Obsolete or Useful in Today's Data-Driven World?. *Imperial Journal of Interdisciplinary Research*.

Padma, A., N. Aisyah, D. Darmawan, I. A. Azmi, & A. R. Putra. (2018). Contingency Approach to Strategies for Service Firms. *Business Research*, 7(2), 178-189.

Patro, C. (2017). Performance Appraisal System Effectiveness: A Conceptual Review. *International Journal of Management Studies*, 6, 156-180.

Prasad, K. D., R. Vaidya, & M. Rao. (2016). Evaluation of the Employee Core Competencies Influencing the Performance Appraisal System with Reference to Agriculture Research Institutes, Hyderabad: A Multiple Regression Analysis. *Journal of Human Resource and Sustainability Studies*, 4(4), 281-292.

Prompukdee, B., & Tuksino, P. (2015). The Development of Performance Appraisal System of Department of Disease Control: An Application of Multiple Evaluation Approaches. *Journal of Performance Management*, 22, 98-113.

Pujotomo, D., N. B. Puspitasari, M. Arasyandi, & Sriyanto. (2019). Performance Appraisal Based on Employees' Competence in Procurement Services Unit (Case of Area Semarang). *Journal of Physics: Conference Series*, 1175(1), 1-6.

Quan, P., Y. Liu, T. Zhang, Y. Wen, K. Wu, H. He, & Y. Shi. (2018). A Novel Data Mining Approach Towards Human Resource Performance Appraisal. *Springer International Publishing*, 10861, 476-488.

Rusman, N. S., D. Darmawan, & N. Othman. (2007). The Study of Organizational Citizenship Behavior: The Role of Professionalism and Experience. *Jurnal Bisnis dan Manajemen*, 7(1), 21-34.

Sánchez, C. R., D. Díaz-Cabrera, & E. Hérnandez-Fernaud. (2019). Does Effectiveness in Performance Appraisal Improve with Rater Training?. *PLoS ONE*, 14(9), 1-20.

Sidin, J. P. (2016). Effective Performance Appraisal from the Perspective of Quality Management. *Journal of Business Performance Studies*.

Sinambela, E. A., R. Mardikaningsih, S. Arifin, & H. D. Ayu. (2020). Development of Self Competence and Supervision to Achieve Professionalism, *Journal of Islamic Economics Perspectives*, 1(2), 33-42.

Toader, E., & L. Brad. (2015). Competency Assessment Using Key Performance Indicators. *The International Journal of Academic Research in Business and Social Sciences*, 5(6), 75-86.

Wahab, E., A. Aziz, D. Darmawan, M. Hashim & Y. Fan. (2017). Marketing New Products to Mainstream Customers, *Journal of Economics and Business*, 8(2), 239-246.

Werdati, F., D. Darmawan, & N. R. Solihah. (2020). The Role of Remuneration Contribution and Social Support in Organizational Life to Build Work Engagement. *Journal of Islamic Economics Perspectives*, 1(2), 20-32.

Zhang, Q.-Z., Jiang, S., Liu, R., & Liu, H. (2020). An Integrated Decision-Making Model for Analyzing Key Performance Indicators in University Performance Management. *Mathematics Journal*, 8(10), 1-16.