East Asian Journal of Multidisciplinary Research (EAJMR)
Vol. 2, No. 8, 2023: 3261-3268

Key Performance Indicator: Concept, Implementation to Performance Management

Harry Purwoko[1]*, Kamsariaty[2], Rubadi[3], Joned Ceilendra Saksana[4], Josua Panatap Soehaditama[5]
[1]Institut Transportasi dan Logistik Trisakti, Jakarta,
[2]Akademi Maritim Nusantara, Banjarmasin,
[3]Universitas Elpifour, Jakarta,
[4]STIE Ganesha, Tangerang Selatan,
[5]Institut Keuangan Perbankan dan Informatika Asia Perbanas, Jakarta
Corresponding Author: Harry Purwoko harrypurwoko2014@gmail.com

A R T I C L E I N F O

Keywords: Key Performance Indicator, Performance Management

Received : 21, June
Revised : 18, July
Accepted: 22, August

A B S T R A C T

This article contributes to Key Performance Indicator (KPI) is an existing application of various studies derived from existing literature. This scientific article uses qualitative as a method, which is illustrated from scientific articles from journals, books, and other sources that make literature sources in supporting this article so as to provide a result. This scientific article provides a result and recommendation, namely providing application or implementation, especially the field of human resource science involved from various industries in scientific articles as the literature used. It is very necessary that with the gap in performance management that has not been thoroughly discussed related to the existing Key Performance Indicators, other researchers in the future can continue the results of this scientific article.

DOI: https://doi.org/10.55927/eajmr.v2i8.5282
ISSN-E: 2828-1517
https://journal.formosapublisher.org/index.php/eajmr

INTRODUCTION

The concept of Key Performance Indicators (KPIs) has gained traction in business, organizations are realizing the need to measure and monitor their performance to make informed decisions and improve. Organizations can assess their progress in achieving their strategic and operational objectives using the framework provided by Performance Indicators (De Jesus &; Buenas, 2023), Key Performance Indicators are an important tool used to measure the performance and success of organizations in achieving their goals and objectives. These indicators provide valuable insights into various aspects of an organization's operations, allowing managers and stakeholders to monitor progress and make informed decisions. The selection of performance indicator criteria is a crucial step in measuring system performance (Vosoughi et al., 2020).

It is important to choose KPIs that accurately reflect the desired results and can effectively track changes over time (Rabbani, M, et.al, 2016). This selection process can be challenging as there may be many operational indicators to consider. The most important thing is to determine which specific KPIs to choose from this set of performance indicators. To choose KPIs effectively, several questions need to be addressed (Parmenter, 2015). One of the performance indicators is quality applied (Heckl & Moormann, 2010)budgeting (Parmenter, 2015) and others. Metrics are factors used to determine organizational performance using performance indicators (Heckl & Moormann, 2010).

KPIs play an important role in realizing organizational goals ((Popova & Sharpanskykh, 2010), Help organizations understand how well they are doing in the relationship of strategic goals (Del-Río-Ortega et al., 2013) In particular, (1) KPIs can provide reliable information to organizations to provide a basis for implementing their growth strategies, (2) performance indicators provide a way to see if the plan is strategic which pursued work and served as a tool to encourage desired behaviors, and (3) their performance indicators, In particular, their use can improve and increase operational efficiency and productivity and profitability. Given these potential benefits, it is not at all surprising, therefore, KPI considerations are very important and continue to increase. The increasing interest in this topic proves that it is used in various areas in the business environment, for example in public transportation systems, (Mnif et al., 2015);(Mourtzis et al., 2016).

Thus, the selection of effective and relevant Key Performance Indicators (KPIs) is becoming important and increasingly important in today's competitive business environment (Popova & Sharpanskykh, 2010) Describing KPIs is a tedious task because it involves various aspects such as business strategy, business objectives, KPI modeling, measurement, analysis and reporting (Letrache et al., 2016) Because of this, organizations typically rely on managers and employees to select and monitor KPIs accordingly. The lack of common terminology and organized structure of data elements can be an obstacle to communication and understanding of information related to the resulting research, making it difficult to analyze and compare works or even to find

mutually beneficial works, the relationship of such works (Vegas et al., 2009). In this scientific article, the contribution to be made about Key Performance Indicator (KPI) is an application that already exists from various studies derived from existing literature.

THEORETICAL REVIEW

Key Performance Indicator (KPI)

According to (Velimirović et al., 2011) KPIs are measurable goals that have greater meaning when implemented. A comparison. KPIs are useful indicators for organizations that can be both monetary and nonmonetary. To show how successful your company is. One of the requirements. After all, the creation of a performance measurement system requires standard procedures from the organization of previous processes of an effective and efficient system.

According to (Parmenter, 2015) Metrics used in key performance indicators. Use financial or other resources to support the organization in decision making. Evaluate progress against company goals.

According to (J.Peral, A.Mate, and M.Marco, 2017) KPIs are Improvements at the strategic and operational level that provide an analytical framework for decision making and increase knowledge and interest in many areas, KPIs play an important role as they provide timely and accurate information comparing current performance with the targets required to meet business needs and objectives. As a result, KPIs can play an important role in ensuring that business needs and objectives are met.

Performance Management

According to (Schwartz, 1999)) performance management is open communication between managers and employees regarding goal setting and feedback from managers to employees is a basic principle of leadership, According to (Amstrong & Baron, 2004) performance management is managing performance against goals, standards, and attribute requirements, organizations, teams, and individuals can achieve better results.

According (Nursam, 2017) Performance Management is creating a shared vision and an integrated strategic approach to drive the achievement of organizational goals is the core of performance management, a leadership style in performance-based resource management.

In assessing the work of company employees using key performance indicator assessments, in general superior employees can be seen from high scores and for employees who are not superior have low scores, employee performance is a barometer for the company to progress quickly, in line with research from (Susanto, Hidayat, et al., 2023);(Susanto, Sawitri, Ali, et al., 2023);(Setyawati et al., 2022); (Sawitri et al., 2023); (Susanto, Sawitri, & Susita, 2023).

METHODOLOGY

This scientific article uses qualitative as a method, which is illustrated from scientific articles from journals, books, and other sources that make literature sources in supporting this article so as to provide a result.

RESULTS

Key performance indicators are something that has existed for a long time and is carried out by all management in all fields of science, it's just that, in this article the results are an existing implementation of research results as literature to be presented, a study from (Del-Río-Ortega et al., 2013) with the results of using the PPINOT meta-model as the core of a software called PPINOT Tool Suite and applying it to several scenarios. Studies from (Anand & Grover, 2015) stated that the results are key performance metrics and classifies them into four main categories: Traffic Optimization, Information Technology Optimization, Warehouse Optimization and Resource Optimization. These metrics have been compiled specifically for the retail sector. A theoretical framework is proposed to link the performance of this construction with the financial performance of the enterprise.

Subsequent studies from (Maté et al., 2016) with the results of the First study, there is a general lack of adequate concepts that describe subtle but important differences between performance and performance indicators. Second, there is no integration between modeling techniques and data analysis, thus linking analysis with the modeling process. To address these shortcomings, we propose an approach that clearly selects KPIs and Key Outcome Indicators (KRI). Our approach consists of (i) a new modeling language that uses essential elements of indicators that include KPIs, KRI, and measurements, (ii) analytical techniques based on data mining that provide data information about model elements and thus make it possible. experts in this field to validate selected KPIs and (iii) iterative processes that guide the discovery and definition of indicators. To validate our approach, we applied our proposal to a real water supply case study.

Studies from (Mourtzis et al., 2016)) with research results According to the evaluation phase, specific appropriate KPIs are selected and suggested to PSS designers using tools for context sensitivity analysis (CSA) from 170 KPIs, which were identified after intensive literature research and systematically divided into four categories. Main categories: Design, Manufacturing, Customer and Environment. From the collected and classified KPIs, KPIs that support the continuity of planned PSS offerings are grouped sequentially. In the lean design support phase, lean rules are selected using CSA and proposed to designers in all design phases to minimize unnecessary activity. Contextual awareness is made possible by the availability of feedback gathered from manufacturers, store experts, and different types of customers (customers of commercial products or end products), as well as the stages of the PSS lifecycle covered by the designer. Ontological data models for KPIs and lean rules are proposed to support CSA.

Study from (Letrache et al., 2016) with the results of KPI modeling solutions and code generation based on MDA approach. To do so, we provide

an OIM meta model extension to design KPIs and then generate MDX code. The offer can be integrated into end-user applications to enable decision makers to define and share their KPIs in real time. Subsequent studies of (Domínguez et al., 2019) the results show Since most of the literature focuses on the definition of KPIs, we will mainly focus on this aspect of KPI management. Our work aims to bring significant benefits, such as improving understanding of KPI management or helping users choose solutions that best fit brand needs.

Studies from (Joppen et al., 2019) a structural framework are presented where KPIs are related to production changes with respect to Industry 4.0. We summarize how today's typical KPIs reflect these changes and demonstrate the benefits of other IT-related KPIs. Subsequent studies from (Al Dakheel et al., 2020) with research results in their articles The need to develop quantitative guidelines to increase energy and technological innovation became the basis for improving building intelligence. Nine groups of representative performance indicators for smart buildings were developed. This work shows current gaps in the literature and shows room for future research.

Subsequent studies from (Vosoughi et al., 2020) with research results showed that out of 45 basic health indicators and 17 education indicators, 12 and 9 indicators were acceptable and a total of 21 indicators were proposed for research by the expert committee. The priority results show that the most important indicator in the form of a ratio of health corrective and preventive actions with a weight of 0.146 is prioritized. Based on the results and objectives of the study, several key indicators have been proposed that can help managers and industry hygiene professionals evaluate the performance of the automotive industry.

The next study from (Abdelhadi et al., 2022) the results of regression model research were applied to student enrollment data to predict accurate KPIs that could be used and adjusted for each higher education system. Prediction engines determine KPIs based on linear regression techniques such as lasso, elastic networks and non-linear regression such as Support Vector Regression (SVR) and K-Nearest Neighbor (KNN). The Palestinian Ministry of Higher Education (MoHE) has provided data on the registration and graduation dates of various colleges. The regression algorithm was evaluated using mean absolute error, mean square error (MSE), root mean square error (RMSE) and R-squared. Experiments show that the separation is 40% training and 60.

The next study from (De Jesus & Buenas, 2023) where it is stated that the system developed is indeed feasible and fully functional and meets the quality standards of the Certified Software Quality Specialist program. As the developed system meets user expectations and demands, it will be a powerful tool for institutions, advisory units and communities to make better strategic decisions and continue to provide quality services to the community.

DISCUSSION

The implementation of Key Performance Indicators in supporting performance management with various existing fields from various sciences

already exists in research, it's just that this scientific article pays special attention to the field of human resources in management that is assessed in the company. Some of the articles above represent the answers of researchers with this study seeing that performance management in particular has not been related to the existing article literature.

So that makes a gap that will later be for other researchers to make further research. The existing key performance indicators have been implemented.

CONCLUSIONS AND RECOMMENDATIONS

The results of the research and discussion above are concluded by following the contribution of the results of this scientific article, namely providing application or implementation, especially the field of human resource science involved from various industries in scientific articles as the literature used.

It is very necessary that with the gap in performance management that has not been thoroughly discussed related to the existing Key Performance Indicators, other researchers in the future can continue the results of this scientific article.

FURTHER STUDY

The results of this article can make a real contribution to the company, and management in various industries, although it is still not perfect for researchers who are in producing this article.

ACKNOWLEDGMENT

Our pride to contribute to our institution that has continued to provide assistance, and the enthusiasm for us researchers in collaborating and completing this article hopefully can provide benefits for science and knowledge, especially for our institutions.

REFERENCES

Abdelhadi, A., Zainudin, S., & Sani, N. S. (2022). A Regression Model to Predict Key Performance Indicators in Higher Education Enrollments. *International Journal of Advanced Computer Science and Applications*, *13*(1), 454–460. https://doi.org/10.14569/IJACSA.2022.0130156

Al Dakheel, J., Del Pero, C., Aste, N., & Leonforte, F. (2020). Smart buildings features and key performance indicators: A review. *Sustainable Cities and Society*, *61*, 102328. https://doi.org/10.1016/j.scs.2020.102328

Amstrong, M., & Baron, A. (2004). Performance management. *Yogyakarta: Tugu Publisher*.

Anand, N., & Grover, N. (2015). Measuring retail supply chain performance: Theoretical model using key performance indicators (KPIs). *Benchmarking*, *22*(1), 135–166. https://doi.org/10.1108/BIJ-05-2012-0034

De Jesus, N. M., & Buenas, L. J. E. (2023). Descriptive Analytics and Interactive

Visualizations for Performance Monitoring of Extension Services Programs, Projects, and Activities. *International Journal of Advanced Computer Science and Applications*, *14*(1), 660–668. https://doi.org/10.14569/IJACSA.2023.0140173

Del-Río-Ortega, A., Resinas, M., Cabanillas, C., & Ruiz-Cortés, A. (2013). On the definition and design-time analysis of process performance indicators. *Information Systems*, *38*(4), 470–490. https://doi.org/10.1016/j.is.2012.11.004

Domínguez, E., Pérez, B., Rubio, Á. L., & Zapata, M. A. (2019). A taxonomy for key performance indicators management. *Computer Standards and Interfaces*, *64*, 24–40. https://doi.org/10.1016/j.csi.2018.12.001

Heckl, D., & Moormann, J. (2010). Process performance management. *Handbook on Business Process Management 2: Strategic Alignment, Governance, People and Culture*, 115–135.

Joppen, R., von Enzberg, S., Gundlach, J., Kühn, A., & Dumitrescu, R. (2019). Key performance indicators in the production of the future. *Procedia CIRP*, *81*(March), 759–764. https://doi.org/10.1016/j.procir.2019.03.190

Letrache, K., El Beggar, O., & Ramdani, M. (2016). Modeling and creating KPIs in MDA approach. *Colloquium in Information Science and Technology, CIST*, *0*, 222–227. https://doi.org/10.1109/CIST.2016.7805046

Maté, A., Trujillo, J., & Mylopoulos, J. (2016). Key performance indicator elicitation and selection through conceptual modelling. *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, *9974 LNCS*, 73–80. https://doi.org/10.1007/978-3-319-46397-1_6

Mnif, S., Galoui, S., Elkosantini, S., Darmoul, S., & Ben Said, L. (2015). Ontology based performance evaluation of public transport systems. *2015 4th IEEE International Conference on Advanced Logistics and Transport, IEEE ICALT 2015*, 205–210. https://doi.org/10.1109/ICAdLT.2015.7136622

Mourtzis, D., Fotia, S., & Vlachou, E. (2016). PSS Design Evaluation via KPIs and Lean Design Assistance Supported by Context Sensitivity Tools. *Procedia CIRP*, *56*, 496–501. https://doi.org/10.1016/j.procir.2016.10.097

Nursam, N. (2017). Manajemen Kinerja. *Journal of Islamic Education Management*, *2*(2), 167–175. https://doi.org/10.24256/kelola.v2i2.438

Parmenter, D. (2015). *Key performance indicators: developing, implementing, and using winning KPIs*. John Wiley & Sons.

Popova, V., & Sharpanskykh, A. (2010). Modeling organizational performance indicators. *Information Systems*, *35*(4), 505–527. https://doi.org/10.1016/j.is.2009.12.001

Sawitri, N. N., Susanto, P. C., & Suroso, S. (2023). Business Opportunity Human Resource Information System for a Human Resource Department to Create Career Path and Performance Evaluation. *East Asian Journal of Multidisciplinary Research (EAJMR)*, *2*(4), 1505–1516. https://doi.org/: https://doi.org/10.55927/eajmr.v2i4.3757

Schwartz, A. E. (1999). *Performance management*. Barron's Educational Series.

Setyawati, A., Pahala, Y., & Susanto, P. C. (2022). Loading And Unloading Labor Performance As A Mediation Of Variables Of Work Motivation ,

Work Competence And Work Behavior That Impacts Well- Being Loading And Unloading Labor. *Journal of Economics, Management, Entrepreneur, and Business*, *2*(2), 146–161.

Susanto, P. C., Hidayat, W. W., Widyastuti, T., Transportasi, I., Jakarta, U. B., Keuangan, I., Asia, I., Author, C., & Candra, P. (2023). Analysis of Resilience and Competence on Employee Performance through Intervening Key Performance Indicator Variables. *Indonesian Journal of Business Analytics (IJBA)*, *3*(3), 899–910. https://doi.org/https://doi.org/10.55927/ijba.v3i3.4274

Susanto, P. C., Sawitri, N. N., Ali, H., & Suroso, S. (2023). Performance Management As a Mediation of Variable of Competence and Coaching Skills That Impacts Organization Sustainability. *Formosa Journal of Multidisciplinary Research (FJMR)*, *2*(4), 719–728. https://doi.org/https://10.55927/fjmr.v2i4.3792

Susanto, P. C., Sawitri, N. N., & Susita, D. (2023). Job Satisfaction and Employee Turnover : Analysis Recruitment , Career Development , Organizational Culture. *Dinasti International Journal Of Digital Business Management*, *4*(3), 619–629. https://doi.org/10.31933/dijdbm.v4i2

Vegas, S., Juristo, N., & Basili, V. R. (2009). Maturing software engineering knowledge through classifications: A case study on unit testing techniques. *IEEE Transactions on Software Engineering*, *35*(4), 551–565.

Velimirović, D., Velimirović, M., & Stanković, R. (2011). Role and importance of key performance indicators measurement. *Serbian Journal of Management*, *6*(1), 63–72.

Vosoughi, S., Chalak, M. H., Yarahmadi, R., & Abolaghasemi, J. (2020). *Identification, Selection and Prioritization of Key Performance Indicators*. 35–49.