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Research Trends on PBM (Performance-based Management) in Korea

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Abstract

Purpose: PBM is emerging as a major management system for securing corporate productivity and enhancing competitiveness, and various studies are being conducted. The purpose of this study is to analyze research trends published in KCI-listed journals and papers since 1999 to understand the current status of research and provide basic data for more extensive research and development of performance management in the future. **Research design, data and methodology:** A detailed examination of research trends was conducted through the analysis of abstracts from 154 research papers on PBM. To facilitate a comprehensive analysis of these trends, LDA topic modelling was employed. **Results:** First, it should be noted that research on PBM is not limited to the area of HRM. Instead, PBM research is expanding to encompass comprehensive personnel systems. Second, the results of topic modeling analysis show that although the initial focus of research was on human resource management, there is now a growing interest in fairness and organizational culture in the entire organization. **Conclusions:** PBM is becoming a dominant paradigm as it shifts from HR systems to organizational fairness and culture. This suggests that future research should consider both quantitative and qualitative aspects of PBM to improve corporate performance while prioritizing organizational fairness and culture.

Keywords: PBM (Performance-based Management), Research Trends, Research Ethics, Topic Modeling

JEL Classification Code: L25, M10, M12, M14, O15

1. Introduction

Technological innovation has brought not only the technological changes but has also significant transformation in the social and economic structures worldwide. After the Asian Financial Crisis in 1997, Korean companies started adopting PBM (Performance-based Management) moving away from seniority-based compensation system (Kim & Kim, 2011; Park & Kwon, 2006; Lee, 2013). This shift became the turning point for PBM and changed the important management paradigm.

The PBM emphasizes the results achieved through business activities. Korean companies have been promoting a performance-based culture in response to changing business environment and to compete with the global companies (Shin & Yang, 2006). PBM can be applied across various areas such as corporate governance, business management, organizational culture, and human resource management. For example, companies can enhance overall organizational efficiency by implementing performance-based compensation system and strengthening performance evaluation frameworks.

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Additionally, PBM can contribute to fostering organizational innovation and increasing employees' motivation.

The PBM has become the important paradigm, from the Asian Financial Crisis in 1997, there has been various studies on the topic of PBM. Research has been carried out across a range of aspects, such as overall HR systems, compensation systems, evaluation systems and organization cultures. There were growing interest in PBM in Korea, but there is the significant lack of studies analyzing the research trends in this topic. To establish the academic identity of corporate performance and explore dimensions for future research development, additional studies on research trends in PBM are essential.

Therefore, this study aims to understand how the perception and application of PBM have changed over time since the 1997 Asian financial crisis in compliance with research ethics. The purpose of this study is to provide a foundation for more extensive research and development on PBM in the future. In particular, this study uses topic modeling. Topic modeling is an automatic extraction method that estimates the overall topic based on the words appearing in each document and identifies topics for individual documents based on the probability distribution of the topics (Lee, 2016). This study examines the trends of domestic PBM research using the topic modeling method and provides insights and suggestions for the future based on this to contribute to the promotion of domestic PBM-related research.

2. Literature Review

2.1. Concept for PBM in Korea

The paradigm of Korean enterprise management system has changed from the traditional seniority-based system to performance-based system with the emphasis on the abilities and performance of individual members (Kim, 1999; Bae & Rowley, 2003; Wright, & Monihan, 2003; Jung et al., 2008). The paradigm is the theoretical framework or set of concepts that dominate the views and thinking of people in a particular era. Therefore, the Korean companies' performance-based paradigm might be considered as the theoretical framework or set of concepts that dominate the views and thinking of companies regarding the human resource management system during a specific period (Moon et al., 2013).

The theoretical interest in PBM started from the perspective of strategic human resource management (Schuler & Macmillan, 1984; Wright et al., 1994). Performance-based human resource management started to gain attention as a new paradigm when the theoretical

research on High-Performance Work Systems began to be utilized in the PMS (Performance Management System) of companies and governments (U.S. Department of Labor, 1993). In Korea, PBM was introduced by the influence of the political democratization in 1987 and from the Asia Financial Crisis in 1997, the paradigm of human resource management systems was changed with the introduction of an advanced human resource management. This resulted in the active adoption of 'performance-based on human resources management system' to drive corporate growth and secure competitive advantage (Jung et al., 2008).

Though the PBM has become widely disseminated in Korean companies and represents the fundamental paradigm in human resource management, clear definition of PBM is still hard to find (Park, 2007).

Following the previous research on PBM, Financial Crisis in 1997 was the main trigger to adopt the PBM in Korea, and the performance-based system such as annual salary system and performance sharing system was significantly expanded after global Financial Crisis in 2008 (Lee, 2013).

2.2. Components of PBM

2.2.1. Performance-based Organizational Culture

Organization has its own unique character as every society has its own culture and individuality, known as organizational culture (Jung, 2004). To achieve the growth and competitive advantage, companies must not only strive to change their organizational culture but also work to improve their organizational capability (Chandler, 1990). Organizational culture is a critical factor that influences a company's performance. It provides direction to the organization and put invisible pressure on its members by presenting shared values that guide them to follow the presented direction and the values (Gerstner & Day, 1997).

To gain performance-based competitive advantage for companies, the management of companies must carefully consider how to build and manage an organizational culture that fosters and strengthens various creative and innovative activities based on performance-based management system within the organization. This approach enhances the capabilities and commitment of employees through the promotion of organizational culture, and it ultimately led to high performance (Seo, 1996).

2.2.2. Performance-based human resources management system

After the Asian Financial Crisis, Korean companies have actively adopted performance-based human

resources management system such as the annual salary system, incentive systems and selective promotions, by benchmarking the best practices of management systems in other countries (Jung et al., 2008). The reason why companies are actively establishing performance-based human resources management system is that they expect enhancement organizational capabilities and internal competencies of organizational members will improve the companies' competitiveness.

Applying competitive performance-based human resources management system can be challenging to achieve the intended objectives if employees cannot accept the system (Shin & Yang, 2006). When introducing performance-based human resources management system, the system must bring tangible benefits to the employees to be favorably received (Yang, 2003). Therefore, the linkage between evaluation and compensation is emphasized in performance-based human resources system.

The evaluation and compensation under PBM are based on the fundamental premise that when performance and rewards are linked, employee motivation and job satisfaction can increase, contributing to productivity of companies (Lee, 2013). The performance-based evaluation and compensation aims to enhance not only individual job performance but also organizational-level performance by motivating employees to improve their performance (Denisi & Pritchard, 2006). Performance-based evaluation and compensation can be defined as HR activities designed to positively influence job performance, thereby improving and enhancing both individual behavior and organizational capabilities (Franco-Santos et al., 2012; Song & Lee., 2020).

2.2.3. Organizational Fairness under Performance-based system

Organizational Fairness refers to the perception or awareness of employees regarding whether the systems and decisions within the organization are being implemented fairly (Oh, 2023). The concept of fairness is defined as 'the degree to which one perceives that the ratio between the inputs to one's job performance and the outcomes received from its equitable compared to that of others' (Adams, 1963).

Research on fairness generally distinguishes between distributive justice and procedural justice. Distributive fairness is defined as the extent to which employees perceive that the total reward they receive are appropriate in relation to their contributions and efforts, while procedural fairness is defined as the extent to which the systems, methods, and procedures used to determine the total rewards are perceived to be fair (Folger & Knovsky, 1989). Securing both fairness in determining rewards,

promotions, and training in performance-based systems is considered a fundamental aspect of human resource management to enhance the acceptance of the practice (Choi et al., 2014).

2.3. Topic Modeling Analysis

Topic Modeling is a method for extracting common themes from various documents as latent probabilistic models by performing text mining and information extraction (Choi & Park, 2020). Additionally, topic modeling not only helps in deriving themes within a collection of documents but also provides a technique for analyzing how individual themes evolve over time (Blei, 2012; Kim et al., 2020).

Topic modeling analysis include LDA (Latent Dirichlet Allocation) and LSA (Latent Semantic Analysis). LDA is a probabilistic distribution model that extracts potentially meaningful topics from multiple documents based on the co-occurrence of words and documents (Choi & Park, 2020). LSA, on the other hand, was developed to derive latent meanings through a matrix of documents and words (Papadimitriou et al., 1998). Among these, the LDA method is particularly effective for analyzing large collections of documents that contain multiple topics, making it widely used in studies that analyze research trends (Kim & Noh, 2019). LDA assumes that words in text data are interrelated and derives topics based on the context in which words appear (Cho et al., 2018).

3. Research Methods and Materials

3.1. Data Collection and Preprocessing

This study aimed to analyze research trends in corporate performance orientation by conducting a big data analysis based on the abstracts of relevant papers. A search of RISS for papers published between 1999 and 2024 using the keywords "corporate" and "PBM (performance-based management)" was conducted, with a particular focus on KCI-listed (or candidate) journals and master's and doctoral theses. The search yielded a total of 308 papers, comprising 90 KCI-listed (or candidate) journals and 218 master's and doctoral theses.

From the initial pool of papers, we excluded those lacking abstracts, theses published in journals that were already included in KCI (or in the process of being considered for inclusion), papers with abstracts written in languages other than English, and papers focused on public organizations rather than corporate entities. This process yielded 154 papers for the final analysis, including 54 KCI-listed (or candidate) journals and 100 master's and

doctoral theses.

To analyze the collected data, the abstracts of all papers were converted into text and organized. Subsequently, the KoNLP package in R was employed to extract only nouns from the abstracts. During this process, unnecessary words were removed, and a normalization process was conducted to unify synonyms into a single word. The term ‘PBM (Performance-based Management)’ was also excluded as it was a common word across all documents and did not provide differentiation for topic modeling.

3.2. Data Analysis

Data analysis was conducted using R for word network analysis and topic modeling. In order to identify the frequency of occurrence of individual words, a simple count was made of the number of times each word was used in the course of the analysis. Furthermore, to identify the most pertinent terms within the documents, we calculated the TF-IDF (term frequency-inverse document frequency) values. This allowed us to ascertain not only the most frequently occurring words but also the crucial keywords within each document.

For topic modeling, this study employed the LDA (Latent Dirichlet Allocation) method, which is one of the most representative topic modeling techniques. The LDA analysis was performed using the Python ‘Gensim’ package to extract topics.

4. Analysis Results

4.1. Word Frequency Analysis

The order of words with the highest simple occurrence frequency across all extracted documents was as follows: "organization," "corporation," "system," "management," "HR," "evaluation," "performance," "result," "employee," and "implementation." The TF-IDF analysis showed the order as: "wage gap," "evaluation," "job," "fairness," "wage," "annual salary system," "behavior," "HR," "satisfaction," and "HR system." The detailed results are presented in <Table 1>. Among the top 20 keywords based on simple occurrence frequency and the top 20 keywords based on TF-IDF, the overlapping keywords were "organization," "system," "management," "HR," "evaluation," "job," "fairness," "wage," "HR system," "goal," and "performance incentive." Although the frequency of "wage gap" was not particularly high, it was ranked the highest among the important keywords within the documents.

Table 1: Core Keywords by Frequency and TF-IDF

Rank	Frequency	TF-IDF
1	Organization	Wage Gap
2	Corporation	Evaluation
3	System	Job
4	Management	Fairness
5	HR	Wage
6	Evaluation	Annual Salary System
7	Performance	Behavior
8	Employee	HR
9	Result	Satisfaction
10	Implementation	HR System
11	Job	Job Satisfaction
12	Effect	Human Resource Management
13	Fairness	Human Resource
14	Compensation	Performance Incentive
15	Wage	Wage system
16	HR system	Management
17	Change	Purpose
18	Purpose	Engagement
19	Performance Incentive	Organization
20	Satisfaction	System

Source : own

4.2. Topic Modeling Analysis

Topic modeling analysis was conducted using the LDA method, focusing on the keywords that emerged as prominent in each topic to re-analyze the abstracts of the respective documents and to select representative themes. The analysis results showed that Topic 1 was related to Overall systems, Topic 2 evaluation and employment, Topic 3 to organizational fairness, Topic 4 to human resource management, Topic 5 to compensation, and Topic 6 to organizational culture. The top 10 most frequent words for each topic are presented in <Table 2>.

Table 2: Topics and Keywords by Topic

Topic	Keywords
Overall System	System, HR, Organization, HR system, Performance, Result, Evaluation, Corporation, Public, Sector
Evaluation and Employment	Evaluation, Employee, Performance, HR, Management, Performance Evaluation, Corporation, Temporary worker, Organization, Layoff
Organizational Fairness	Fairness, Corporation, Organization, Management, Effect, Distribution, Result, Employee, Procedure, Awareness
Human Resources Management	Management, Corporation, System, HR, Organization, Implementation, Result, Human Resource, System, Purpose
Compensation	Wage, Performance Incentive, Corporation, Annual Salary System, Implementation, Employee, Change, Proportion, Need
Organizational Culture	Organization, Job, Corporation, Satisfaction, Behavior, Employee,

	Culture, Job Satisfaction, Engagement, Organization Engagement
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Source : own

5. Conclusions and Suggestions

This study analyzed the abstracts of research on PBM in Korea after the Asian Financial Crisis to explore research trends in this area. To gain a more detailed understanding of these trends, LDA topic modeling was conducted, and the trends were identified based on the results of the topic modeling. From the research findings, the following insights were derived.

It was observed that the research on PBM has not been limited to human resource management or compensation but has extended to various areas such as overall systems, employment, fairness and organizational culture. This suggests that PBM has established itself as a comprehensive management paradigm for companies, indicating the need for continuing research across various aspects of corporate management.

This study has certain limitations, including the focus on abstracts rather than full papers, which may have affected the LDA analysis. In consideration of the LDA analysis traits, the source for analysis is critical for the analysis result so if the study can deal with full papers, the result can deal with more various aspects. Additionally, the research was constrained by selecting literature based solely on the keyword PBM. Future studies could achieve more comprehensive analysis by selecting a broader range of keywords related with PBM and including international papers.

Nonetheless, this study highlights two traits. PBM is now considered as the comprehensive paradigm for companies and the main topics for the research have shifted to organizational fairness and culture with the HRM. It suggests that future research should consider both quantitative and qualitative aspects of PBM, emphasizing organizational fairness and culture while enhancing corporate performance.

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