Bibliometric Analysis of Performance Evaluation Studies

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Abstract

The existence of the separate theory in two rights makes performance evaluation vital to the survival and development of modern enterprises. Based on the analysis of relevant literatures in CNKI and Web of Science databases, this paper makes a preliminary statistical analysis and comparative analysis of the literature research methods and hot spots on this topic, so as to have a preliminary understanding of the literatures on performance evaluation in the past four years.

Keywords

Performance Evaluation, EVA, Balance Scorecard, Comparative Analysis

1. Introduction

Peter Drucker, the father of modern management, said: “If you can’t appraise, you can’t manage”. Therefore, evaluation is very important for management. In modern enterprise system, managers are separate from the owner; the owner hires managers to manage their assets and they will care about how managers use their money and whether it meets their expectation. These questions need performance evaluations to solve.

Throughout the history of enterprise in the modern world, why some companies can develop in ways which seem built to last, such as Beijing’s Tongrentang, Sweden’s Stowe (Stora) company, Japan’s construction companies such as the Kong group company, while other companies start and then soon fail, like a flash in the pan or fleeting as a meteor. Being unable to survive or develop, is a major challenge for those who advise on business research and development. Why do Chinese companies perform so well before they go public and then suddenly change their faces? These issues are crucially concerned with how any enterprise in different cultures can develop sustainably. This leads us to the
question of how can the performance evaluation might contribute to the long-term development of the enterprise and its sustainable development? These problems have aroused widespread interest in academics who study business enterprise development. No complex modern enterprise can operate normally without a performance evaluation system (Yulong Yang et al., 2014) [1]. Based on these reasons, this paper uses the database to sort out the research status of performance evaluation at home and abroad in recent four years, hoping to have a preliminary understanding of the literature on the topic of performance evaluation in recent four years, and provide some ideas for future research.

The following arrangement of the article is as follows: Part 2 is the sample selection process and sample characteristics. Part 3 analyzes the main research and research methods of the retrieved literature, and Part 4 is the conclusion of the paper.

2. Research Sample Selection

2.1. Sample Selection Process


Using Web of Science, the search was performed according to the following conditions: the keywords were “Performance Evaluation”, “Relative Performance Evaluation”, “BSC”, “balanced scorecard”, “EVA”; Time span from 2014 to 2017; Journals include Accounting Review (AR), Journal of Accounting Research (JAR), Journal of Accounting Research (JAE), Journal of Accounting and Economics (JAE), Contemporary Accounting Research (CAR), Accounting, Organizations and Society (AOS), Contemporary Accounting Research (CAR), Review of Accounting Studies (CAR), Journal of Management Accounting Research (JAMA). A total of 16 articles were retrieved.

2.2. Sample Characteristics

2.2.1. Distribution Characteristics of Literature Quantity

From two dimensions of time and journals, the number of articles on this topic in the top ten economic and management journals in CNKI database is very few. The Web of Science database has published a large number of articles on the topic of performance evaluation in CAR and AOS in the past four years. Articles published in JMAR are relatively few. From the perspective of longitudinal time, there is no obvious change trend in the number of received articles in each kind of journals. The only common point is that the number is very few, which is basically 1 or 2 articles. The statistical results of these 61 articles are shown in Table 1.
The number of articles on performance evaluation in Chinese shows a decreasing trend. The number of articles on performance evaluation published in top journals of web of science database reached a peak in 2015, and then declined. However, in general, the annual difference between web of science database and CNKI database is not obvious except in 2014.

2.2.2. Statistical Characteristics of Research Topics Related to Performance Evaluation

See Table 2, from the perspective of literature research topic, the literatures in CNKI database are more inclined to design of Performance evaluation system and Influencing factors of performance appraisal. Literatures in Web of Science database tend to study about influencing factors of the performance appraisal. Overall, performance evaluation of the relevant research focused on Design of performance evaluation system and influencing factors of performance appraisal.


This part analyzes the research topic and research method of the literature respectively after manual reading of the retrieved articles.

<table>
<thead>
<tr>
<th>Table 1. literature quantity distribution.</th>
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</thead>
<tbody>
<tr>
<td>journal</td>
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<tr>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>Economic Research Journal</td>
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<tr>
<td>Accounting Research</td>
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<tr>
<td>Nankai Business Review</td>
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<td>Management World</td>
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<tr>
<td>Auditing Research</td>
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<tr>
<td>Journal of Audit &amp; Economics</td>
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<td>China Soft Science</td>
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<td>Economic Science</td>
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<td>JAE</td>
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<td>JMAR</td>
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<td>total</td>
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Table 2. Distribution of literature topics in the database.

<table>
<thead>
<tr>
<th>topic</th>
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<th>Web of Science</th>
</tr>
</thead>
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<tr>
<td>Subject of performance evaluation</td>
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<td>0</td>
</tr>
<tr>
<td>Principles of performance appraisal</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Method of performance evaluation</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Design of performance evaluation system</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>Influencing factors of performance appraisal</td>
<td>13</td>
<td>5</td>
</tr>
<tr>
<td>Object of performance evaluation</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Economic consequences of performance appraisal</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>total</td>
<td>45</td>
<td>13</td>
</tr>
</tbody>
</table>

3.1. Analysis Research Topic

3.1.1. The Principles and Methods of Performance Evaluation

Changhong Pei (2015) puts forward suggestions on how index construction principles for the new round of national economic performance evaluations in the People’s Republic of China have opened up formed under the guidance of the new thinking emanating from the 18th national congress of the communist party of China [2]. Huijin Wang (2014) believed that the establishment of government audit performance evaluation system should be based on the overall and systematic view of government, and the principle of coordination should be emphasized in carrying out audit work [3]. Rui Zhang (2014) believes that for enterprises in strategically important emerging industries, their performance rating system should reflect the principles of strategic, emerging and circular economy [4]. Rui Zhang (2015) believes that in the new normal period of China’s economy, the performance evaluation of enterprises should focus on the evaluation system that combines the principle of fairness and rationality of the degree of performance evaluation with the rationalization of results [5].

Gangyong Zhang et al. (2016) believe that principal components analysis is a better method for relative performance evaluation [6]. Hong Zhou et al. (2014) argue that when an enterprise is in a competitive market environment, it is more likely to use the relative performance evaluation method for performance assessment [7]. Xiaofang Ma et al. (2016) applied the efficiency coefficient method to the audit performance evaluation of the use of financial funds in e-government [8]. Zhengtang Zhang et al. (2015) further analysed the literature on performance evaluation methods of high performance work [9]. Baldenius et al. (2016) studied the topic of management performance evaluation and manager’s investment choice decision, and believed that when the investment date was determined by endogenous factors, the performance indicators selected based on accounting had limitations, that is, the company had the right to choose to wait for investment [10]. Cooper et al. (2017) systematically analyzed the development and improvement of the performance evaluation method—balanced scorecard, which has been widely accepted [11]. Busco (2015) redefined the theo-
retical framework of the balanced scorecard (BSC), a method for performance evaluation, as having four characteristics: visual execution space, procurement and innovation mode, interrogation adjustment method and incentive mode [12]. Chen et al. (2016) studied how management makes judgments in the performance evaluation process of balanced scorecard with the eye movement tracking device, and the study showed that if the management pays attention to the selection of strategic performance evaluation indicators, the decisions they make are more consistent with the strategic goals of the subordinates [13]. This research studied the influence of visual attention on decision-making process.

To sum up, for the research sample of this paper, articles on performance evaluation principles stem from in domestic literature, but not in the main from foreign literature. For Performance evaluation methods, domestic methods are relatively diverse, including principal component analysis and efficacy coefficient, etc., while foreign countries focus on the use of balanced scorecard to explore the impact of people’s subjective will on performance appraisal, and uncover the black box of performance appraisal.

3.1.2. The Design of Performance Evaluation System

Yicheng Wang et al. (2017) established the performance assessment model of linear programming for the performance assessment after the allocation of environmental protection funds [14]. Naiyun Ma et al. (2016) applied the balanced scorecard to the performance assessment system of national science and technology funds in view of a series of problems, such as the emphasis on quantitative rather than qualitative analysis, the emphasis on short-term output, the neglect of long-term benefits and the imperfect evaluation system [15]. Huahong Yan et al. (2016) incorporated the carbon emission of enterprises into the performance assessment system and constructed the performance assessment system based on green EVA [16]. Guohua Chi et al. (2016) believe that EVA Performance evaluation in conjunction with internal control has a comprehensive governance effect on the inefficient investment of state-owned enterprises [17]. Xiaonan Li (2016) believes that the construction of eva-based value management system is conducive to the ultimate goal of maximizing enterprise benefits, in line with the long-term strategic goals of enterprises, and is an important basis for promoting the long-term development of enterprises [18]. Baicheng Zhou et al. (2016) carried out risk adjustment on traditional EVA, which enhanced the comparability of performance among central soes with different risk levels and solved the problem that the risk difference between central soes which was not comparable to their profitability [19]. Lu Dai et al. (2015) believed that the evaluation system of inter-organizational learning performance of local Chinese enterprises was not systematic enough to combine organizational performance evaluation with enterprise strategy [20]. Guliang Tang et al. (2015) proposed an improvement scheme for the design of EVA Performance evaluation system from the perspective of system theory [21]. Xuejun Zhou (2015) believed that the Performance evaluation system designed by the Internet platform is helpful
in improving the synergistic effect between systems, and to identify how various factors affect each other and the causal influence among them [22]. Xuelong Wang et al. (2015) combined the balanced scorecard and key performance indicator, determined the weight of each indicator with the analytic hierarchy process, built a dynamic performance evaluation system, and empirically tested the work performance of the national audit office [23]. Chenglong Chu et al. (2014) designed the performance assessment of social and public infrastructure construction with an analytical model [24], and Bin Wang (2014) established a performance audit system based on information system for the assessment of resource allocation efficiency of colleges and universities [25]. Yupeng Liu et al. (2017) established an appropriate performance evaluation system for suppliers in the emerging market of the smart home [26]. Qiongwen Cheng et al. (2017) designed a set of performance assessment system indicators, considering environmental factors in the procurement process of enterprises to promote the green and healthy development of enterprises from the source [27]. Kexin Bi et al. (2015) incorporated the technology transfer of multinational companies into the green innovation performance evaluation system and built a new green innovation performance evaluation system for the manufacturing industry [28]. Lanbing Li et al. (2015) constructed a performance evaluation system of total factor of production to address the quality problem of China’s economic growth [29]. Jianfeng Ma et al. (2015) believe that the introduction of network data envelopment analysis method in performance audit was conducive to the scientific and reasonable selection of audit objects and projects and the improvement of audit efficiency [30]. Youtang Zhang et al. (2014) considered the performance of the budget allocation model of university funds and established a performance evaluation system based on the input-output perspective [31].

3.1.3. Influencing Factors of Performance Appraisal
Lianguo Liu (2017) argued that the enterprise management with declining performance is more likely to search for higher risks for innovation, and is eager to get the enterprise out of the dilemma of declining performance [32]. Xiaohong Chen et al. (2014) showed that technological improvement can effectively improve urban environmental performance evaluation [33]. Limin Chen (2014) made a theoretical analysis of the reasons for the different opinions of researchers on the impact of enterprise internationalization process on performance evaluation [34]. Xu Zhang et al. (2017) believed that in order to improve innovation performance, the system of rewarding employees would be affected by employees’ emotional cognition, and that innovation performance would be improved when employees were in positive emotional states and vice versa [35]. Thus it can be seen that material rewards may not be completely effective, and the employee’s emotion is an important factor affecting the final success of an enterprise. Lingli Yan (2016) argued that in order to increase the supply of rural public product performance, simply relying on supply adjustment effect is not obvious, and should promote the implementation of the rural public product
structural reform, expand the scale of the government for the supply of public products, improve the fairness of public products supply, and effectively improves the performance of the rural public product supply base [36]. Bainai Fan et al. (2016) believe that the openness, coverage and other characteristics of public service supply will have an important impact on the performance of public service, and it is necessary to assess whether the supply of public service truly benefits and satisfies the people based on these characteristics [37]. Jie Zhang et al. (2017) believe that proactive behavior characteristics of employees will promote enterprise innovation, thus improving the innovation performance of enterprises. The author also believes that employees’ proactive behavior acts on the improvement of enterprise innovation performance through the mechanism of seeking feedback [38]. Bo Zhu (2015) believes that the more competition an enterprise faces in the market, the more inclined it is to use non-financial indicators to assess performance, indicating that the market environment will affect the selection of indicators for performance evaluation [39].

According to Yulong Yang et al. (2015), different strategies selected by enterprises have different performance evaluation indexes. In the cost leading strategy, enterprises are more inclined to use financial indicators for performance evaluation, while in the customer-oriented strategy, enterprises are more inclined to use non-financial indicators for the establishment of performance evaluation system [40]. Yulong Yang et al. (2014) argue that because of the lack of effective external contract system, makes the enterprise develop on the basis of the brioche design of Performance evaluation of human relationships [41]. In the same year they published in “management in the world”, an article putting forward the argument that only in close relationship between higher and lower levels, a financial index can identify good quality good cases, control systems, and the separation of powers to improve enterprise performance [42]. Hong Luo et al. (2014) believe that some executives will conduct compensation contract manipulation through the correlation between compensation and relevant performance indicators, and the greater the management authority, the more obvious such manipulation will be [43].

Bol (2016) argue that organizations can through the design of control system to influence the manager of employee performance rating, and improve the accuracy of the information in the control system of the influencing factors, but only when the assessment results are transparent should improve the management of performance good worker with the ability to identify the good staff that is based on the information accuracy and the transparency of some design choices, organizations can directly influence the management personnel in the process of performance evaluation of motivation, so as to evaluate its evaluation activities [44]. King R et al. (2016) studied the interaction between ownership and the management control system designed by professional service organizations, in terms of performance appraisal. Research has shown that low ownership of professionals in professional service organizations leads to higher man-
agement efficiency and performance in MCS prototype boundaries, and higher ownership exploratory MCS prototypes [45]. Thornock (2016) showed that there was an inverted U relationship between individual performance feedback time and future performance. The author believed that providing feedback immediately after the implementation of decision could effectively promote learning and future performance [46]. Humphreys et al. (2016) studied the performance of two balanced scorecard framework (BSF) elements, the effect of strategic goal (“causal link”) and time delay information (“delay”) on long-term profit performance in dynamic decision-making environment [47]. The accuracy of the two components of the manager’s mental model has also been used to test the cognitive mechanism of the impact of the two balanced scorecard frameworks on performance. Arnold M C (2016) studied how planned tasks that conflict with Performance evaluation tasks affect the budget negotiation and the behaviors in the results [48]. This study found that when the budget is included in the plan and performance appraisal, it improved overall budgetary planning, including suggestions of subordinates during the budget negotiation and the performance of subordinates after the negotiation.

3.1.4. The Objects and Economic of Consequences of Performance Evaluation

Xinyu Li et al. (2017) empirically tested the investment performance of enterprise annuity in China by taking the investment performance of enterprise annuity as the performance evaluation, and concluded that the performance of enterprise annuity with fixed income was a better performance indicator than that of enterprise annuity with equity [49]. Lv Yin (2016) believes that public Performance evaluation plays an important role in determining whether there are defects in internal control [50]. Guohua Chi et al. (2016) conclude that enterprises will enhance their independent innovation capability due to the implementation of EVA (Economic Value Added) performance assessment. At the same time, it is believed that the “aggressive management” strategy is, more inclined to use venture capital, which will positively adjust the impact of EVA performance assessment on the innovation ability of enterprises [17]. Weifeng He et al. (2017) believe that the economic consequence of the implementation of EVA performance assessment in central enterprises means that the management is more willing to take risks, thus significantly improving the enterprise value [51].

Nezlobin et al. (2015) examined the design of integrating accounting informatization into the management performance evaluation system, and the study showed that management incentives are determined by performance indicators and the depreciation schedule of capacity assets [52]. Larmande (2014) believed that under the principal-agent model, agents would provide some other information after the fact for their poor performance, so as to prove that such poor performance is not the result of their own lack of efforts but is caused by other factors beyond their control [53]. The research showed that there is a phenome-
non in which that agents look for excuses for their poor performance in performance parity. Campbell (2015) studied the company’s business strategy on how to test and how to use the statistical analysis of internal performance evaluation system for validation. They used a convenience store chain balanced score card to data empirically record data on the company’s internal performance indicators, in ways which could identify in a timely fashion, strategic failures and new strategic challenges [54].

3.2. Analysis of Research Method

With reference to the classification of research methods in Chinese management accounting research conducted by Rongrui Du (2009) [55] and Yan Meng (2014) [56], I read the retrieved literature one by one and make statistical analysis of the research methods used in the literature. The analysis shows that domestic literature tends to be empirical research, and data acquisition is more focused on questionnaire. In addition, the use of empirical research is gradually decreasing while the use of investigation research increasing. And the number of case studies is also increasing (as shown in Table 3). That is to say, more scholars lay stress on cases, and study how to design performance evaluation through practice trial and error in enterprises. However, experimental research methods are most frequently used in foreign literatures, followed by normative research and analytical model research. For performance evaluation research, experimental research is more close to the psychological activities of the research object. Foreign countries tend to adopt experimental research, while domestic research is rarely involved.

All in all, in the past four years, the focus of performance evaluation scholars has been on the improvement of the application of EVA index. With the increase of social attention to environmental issues, more and more scholars are trying to incorporate environmental protection into the performance evaluation system of enterprises.

Table 3. Quantitative description of research methods1.

<table>
<thead>
<tr>
<th>method</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>The empirical research</td>
<td>5</td>
<td>7</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Normative analysis</td>
<td>4</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>The investigation and study</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>The case study</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Analytical model research</td>
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<td>2</td>
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</tr>
<tr>
<td>Experimental study</td>
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</tr>
<tr>
<td>Literature research</td>
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<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>20</td>
<td>15</td>
<td>11</td>
</tr>
</tbody>
</table>

1Because an article may use different methods, the total number is more than 61.
4. Conclusions

In this paper, publications over four years in management accounting field published in top journals on performance evaluation in China and other countries have been subjected to a preliminary screen. Relatively few of the articles identified used the empirical research in their analyses. Studies from outside of China had more focus on experimental studies. From the perspective of research topics, domestic (i.e. Chinese) articles tended to improve the performance evaluation system design of different market environments and different enterprises, while international literature tended to explore what factors affected performance evaluation, and how management conducts performance evaluation, trying to elucidate the “black box” of performance evaluation itself. Some foreign experimental studies on performance appraisal might come to different conclusions when applied in the Chinese context, and this could be an important research topic for future management accounting performance appraisal in China.

In addition, environmental protection has attracted wide attention in recent years, and some scholars have tried to incorporate this factor into the research framework of performance appraisal, which may be a future research trend.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

References


