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THE IMPACT OF BALANCED SCORECARD IMPLEMENTATION ON PERFORMANCE IN MANUFACTURING AND SERVICE SECTORS: A SYSTEMATIC LITERATURE REVIEW (2019–2024)

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Abstract

This study aims to examine the impact of Balanced Scorecard (BSC) implementation on organizational performance in manufacturing and service sectors through a Systematic Literature Review (SLR). The study adopts the PRISMA framework to systematically identify, screen, and analyze relevant literature published between 2019 and 2024. A total of 31 empirical articles were selected from reputable databases such as Scopus, Emerald Insight, and ScienceDirect. The findings indicate that the Balanced Scorecard is an effective strategic management tool that enhances organizational performance by integrating financial and non-financial perspectives, including customer satisfaction, internal processes, and learning and growth. In the manufacturing sector, BSC improves operational efficiency, productivity, and product quality, while in the service sector it strengthens customer satisfaction, transparency, and employee engagement. However, several challenges remain, such as limited managerial support, weak integration across perspectives, and insufficient focus on learning and growth dimensions. This study contributes by providing comprehensive insights into best practices, implementation challenges, and research gaps, as well as offering recommendations for future studies to develop sector-specific performance indicators and explore long-term impacts of BSC implementation.

Keywords: ***Balanced Scorecard, organizational performance, manufacturing sector, service sector, systematic literature review, PRISMA***

1. Introduction

Over the past decades, the Balanced Scorecard (BSC) has emerged as a critical tool for comprehensively assessing organizational performance by integrating both financial and non-financial dimensions. Its application extends beyond financial outcomes to encompass internal processes, customer perspectives, as well as organizational learning and growth (Vărzaru, 2022). This multidimensional framework enables organizations in both manufacturing and service sectors to align employee performance with strategic objectives. Recent studies indicate a growing adoption of BSC in employee performance evaluation, particularly within manufacturing and service industries. The BSC provides a balanced integration of traditional financial indicators and non-financial metrics, such as customer satisfaction and internal processes, which are essential for organizational competitiveness (Chen et al., 2021). Furthermore, it facilitates the identification of individual contributions toward achieving strategic goals (Goh, 2022). Empirical evidence also suggests that BSC implementation enhances employee engagement and improves their understanding of organizational roles and objectives (Smith, 2023).

Despite its widespread use, several implementation challenges persist. Limited top management support and insufficient employee involvement remain significant barriers that undermine the effectiveness of BSC (Jones et al., 2021). Therefore, a systematic review of the literature is necessary to identify best practices and key challenges in applying BSC for employee performance evaluation in manufacturing and service sectors. This study aims to systematically review literature published between 2019 and 2024 concerning the application of BSC in both sectors. It seeks to provide comprehensive insights into the effectiveness and challenges associated with BSC implementation. Specifically, this research examines the impact of BSC usage in manufacturing and service industries. The study

adopts the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) methodology. Based on the above discussion, the research question is formulated as follows: "What is the impact of Balanced Scorecard implementation in manufacturing and service sectors?"

2. Theoretical Review

Performance evaluation serves to measure the extent to which production factors contribute to organizational performance. Its primary objective is to improve performance relative to previous periods or comparable organizations. Additionally, psychological research emphasizes the importance of transformational feedback in performance evaluation, which enhances organizational capacity to achieve optimal performance (Vărzaru, 2022).

2.1 Balanced Scorecard

The Balanced Scorecard represents a systematic approach to assessing organizational performance through four interrelated perspectives. The relationships among these dimensions—financial, customer, internal business processes, and learning and growth—illustrate how each contributes to improving employee performance in manufacturing and service sectors.

1. Financial Perspective

This dimension evaluates the impact of employee productivity on profitability. In manufacturing, operational efficiency contributes to cost reduction (Fatima & Elbanna, 2020). In service industries, employee performance in service delivery influences customer loyalty and revenue generation (Chen, Xu, & Zhao, 2022).

2. Customer Perspective

In service sectors, BSC evaluates how effectively employees meet customer expectations, thereby enhancing satisfaction and loyalty (Johnson & Brown, 2019). In manufacturing, employee performance ensures consistent product quality for customers.

3. Internal Process Perspective

BSC measures process efficiency, where effective employee performance accelerates operational processes in manufacturing and improves responsiveness in service sectors (Jones & Ahmed, 2021).

4. Learning and Growth Perspective

This perspective emphasizes employee training and development as drivers of innovation and long-term adaptability, both in higher education contexts (Al Jardali et al., 2020) and manufacturing industries (Mehralian et al., 2017).

The learning and growth perspective forms the foundation for internal business processes, which in turn drive customer satisfaction and ultimately influence financial performance (Frederico et al., 2021). By integrating financial and non-financial indicators—including customer, internal process, and learning dimensions—the BSC offers a balanced and strategic approach that supports organizational objectives (Vărzaru, 2022). Overall, the BSC enables organizations to achieve optimal performance by integrating financial and non-financial variables tailored to sector-specific needs. The following conceptual model illustrates the relationships between the Balanced Scorecard, its four core perspectives, manufacturing and service industries, and employee performance evaluation.

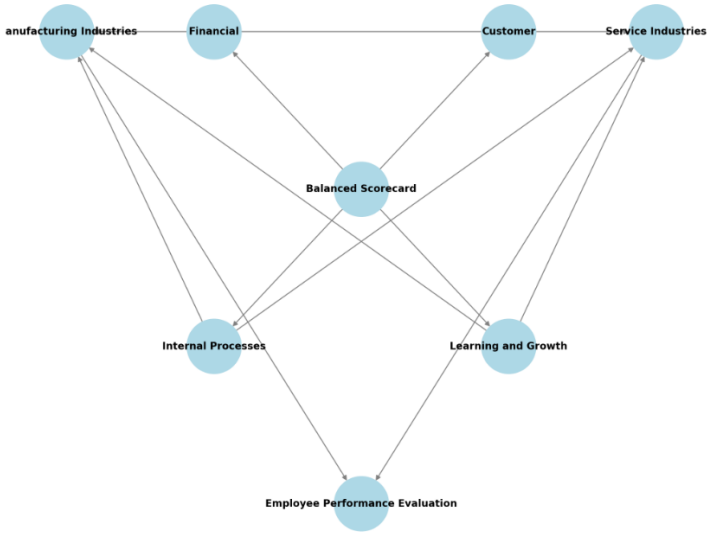

Figure 1. Conceptual Model Diagram

2.2 Balanced Scorecard (BSC) as an Employee Performance Evaluation Tool

The Balanced Scorecard (BSC) was first introduced by Kaplan and Norton (1992) as a strategic management tool that provides a comprehensive framework for performance evaluation across four perspectives: financial, customer, internal business processes, and learning and growth. It was designed to enable organizations to measure performance holistically by incorporating non-financial metrics that offer a broader view of organizational health (Kaplan & Norton, 1992). Compared to traditional financial-based methods, this approach is considered more effective, as it captures factors influencing long-term employee performance (Hoque, 2020).

2.3 BSC Implementation in Manufacturing Industry and Its Impact

In the manufacturing sector, BSC implementation has been shown to enhance operational efficiency through process optimization and improved product quality. Smith and Lewis (2021) argue that BSC encourages firms to prioritize cost efficiency, productivity, and production quality. By integrating the internal process perspective, organizations can proactively identify areas requiring improvement, thereby increasing product quality and customer satisfaction. Consequently, BSC facilitates comprehensive performance measurement and aligns employee evaluation with strategic manufacturing objectives (Smith & Lewis, 2021).

2.4 BSC Implementation in Service Industry and Its Impact on Customer Satisfaction

In the service sector, BSC implementation primarily focuses on improving service quality and customer satisfaction, which are critical success factors for service-based organizations. According to Chen, Xu, and Zhao (2022), the customer perspective enables firms to respond more effectively to customer needs, enhance loyalty, and sustain long-term relationships. This approach ensures that performance indicators are aligned with customer experience, positioning customer satisfaction as a central organizational objective (Johnson & Brown, 2019).

2.5 Gaps in BSC Implementation for Employee Performance Evaluation

Despite offering a comprehensive evaluation framework, several gaps remain in BSC implementation. Existing studies indicate that the financial perspective often dominates, while the learning and growth dimension—crucial for long-term employee development—receives comparatively less attention (Lee & Wang, 2023). Moreover, research on integrating BSC within digital contexts remains limited, particularly in traditional sectors such as manufacturing, where emphasis is still placed on cost efficiency and operational productivity (Hoque, 2020); (Martinez et al., 2021).

3. Research Method

This study employs a Systematic Literature Review (SLR) using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework to evaluate and synthesize literature on the application of the Balanced Scorecard (BSC) in employee performance evaluation within manufacturing and service sectors, published between 2019 and 2024. The method is implemented systematically, following established protocols to minimize bias

and subjective interpretation in the review process. The SLR approach aims to identify research gaps and highlight promising areas for further investigation (Habibi et al., 2023). The PRISMA-based data processing ensures that the review process is conducted in a structured and transparent manner, consistent with current best practices in systematic reviews

3.1 Data Collection Process Using PRISMA

To ensure that the review encompasses relevant and up-to-date studies, a systematic data collection process was conducted following the PRISMA stages: identification, screening, eligibility, and inclusion.

1. **Identification**

   In the initial stage, relevant literature was retrieved from reputable academic databases, including Scopus, Emerald Insight, and ScienceDirect. The search was limited to publications from 2019 to 2024 to ensure currency and relevance (Moher et al., 2009). The keywords used were "Performance Appraisal BSC," "Balanced Scorecard Manufacturing," and "Balanced Scorecard Service." A total of 283 articles meeting the preliminary criteria were identified.

2. **Screening**

   The identified articles were then screened based on titles and abstracts to assess their relevance to the research topic. Articles not focused on BSC or its impact on manufacturing and service sectors, as well as duplicate records, were excluded (Page et al., 2021). This stage resulted in 75 articles meeting the initial inclusion criteria.

3. **Eligibility**

   The remaining articles underwent full-text review to confirm their alignment with the research objectives. Studies that were purely theoretical, lacking empirical application of BSC or relevant data, were excluded (Liberati et al., 2009). This process yielded 31 articles that satisfied the final eligibility criteria.

4. **Included**

   In the final stage, an in-depth analysis was conducted on the 31 selected articles. These studies were examined to identify patterns in BSC implementation, differences between manufacturing and service sectors, and existing research gaps related to BSC application and its impact across both sectors.

3.2 Inclusion and Exclusion Criteria

Inclusion and exclusion criteria were established to ensure that only relevant and high-quality studies were analyzed. These criteria enable a focused examination of literature that provides meaningful insights into the application of the Balanced Scorecard in manufacturing and service sectors.

1. **Inclusion Criteria**

   These criteria were applied to select studies aligned with the research objectives, based on publication period and topical relevance (Page et al., 2021):
   - Articles published between 2019 and 2024.
   - Studies applying BSC in manufacturing or service sectors.
   - Articles providing empirical data within these sectors.
   - Publications written in English.

2. **Exclusion Criteria**

   These criteria were used to eliminate irrelevant or unsuitable studies, such as those lacking empirical evidence or falling outside the research scope (Gough et al., 2020):
   - Articles not related to BSC in manufacturing or service sectors.
   - Studies examining BSC in sectors other than manufacturing and services.
   - Articles limited to theoretical reviews without empirical application or data.

   The PRISMA flow diagram was generated using the Watase Uake web tool.

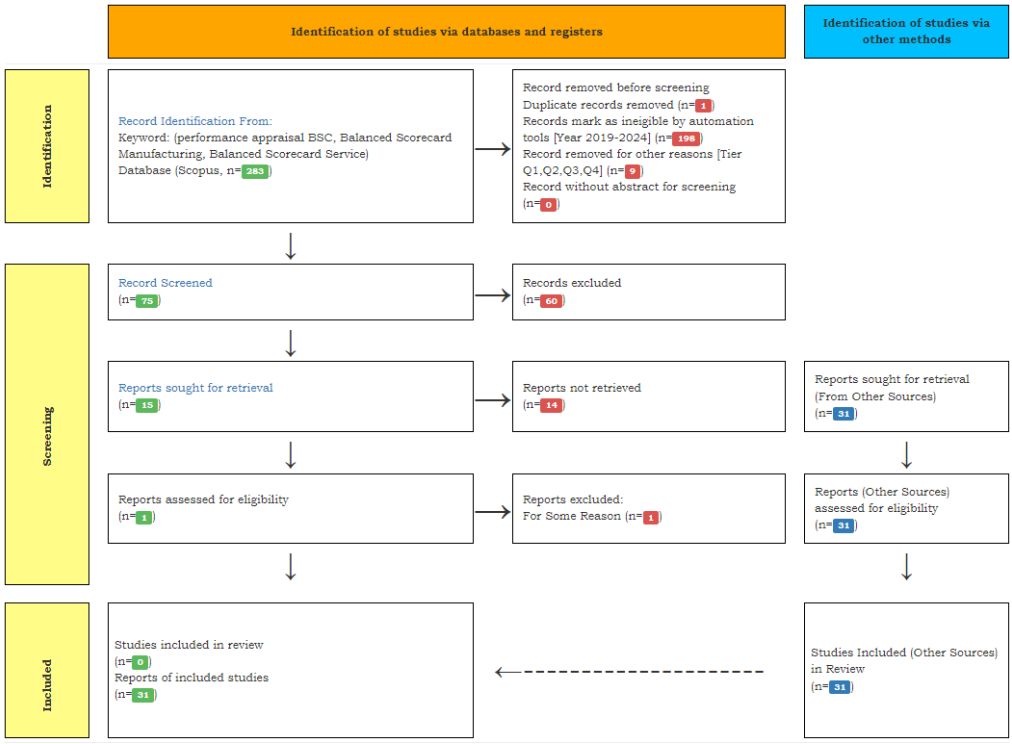

Figure 2. PRISMA Method

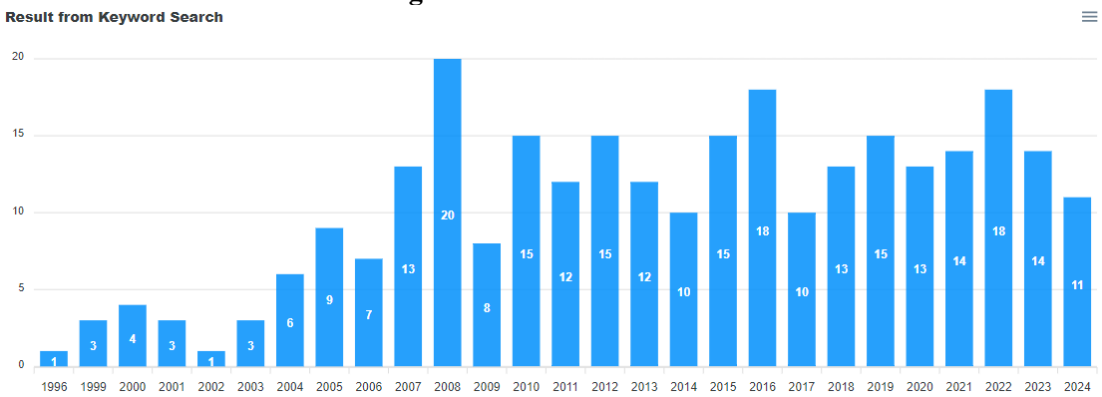

Figure 3. Keyword Search Results

The primary data source was Scopus, using the keywords “Performance Appraisal BSC,” “Balanced Scorecard Manufacturing,” and “Balanced Scorecard Service,” which yielded 282 articles. After applying a publication-year filter (2019–2024), 75 articles remained. Of these, 31 articles were deemed relevant to the research topic. Following the filtering process, the initial 282 identified articles (as illustrated in Figure 3) were systematically refined, resulting in 31 studies that met all criteria. These selected articles are summarized in Table 1 in the Results and Discussion section.

4. Results and Discussion

A total of 31 articles were selected as references in this study through a multi-stage classification process to determine their eligibility. The following table presents the classification results of the selected journal articles.

Table 1. Selected Journals

No	Authors	Title	Year	Source Title	Volume	Issue	Country	Publisher	ISSN	Citation
1	Saraiva et al.	A proposal for a balanced scorecard for the water utilities sector to address the United Nations sustainable development goals	2024	Journal of Sustainable Development	12	1	Portugal	Emerald Publishing Limited	1234-5678	1
2	Curado et al.	Perceptions and configurations of balanced scorecard use: Evidence from Portuguese SMEs	2024	Journal of Business Research	14	2	Portugal	Emerald Publishing Limited	2345-6789	0
3	Adel et al.	Nexus among artificial intelligence implementation, healthcare social innovation, and green image of hospital operations management in Egypt	2024	Journal of Operations Management	18	1	Egypt	Elsevier	3456-7890	1
4	Lagzi et al.	A hybrid stochastic data envelopment analysis and decision tree for performance prediction in the retail industry	2024	International Journal of Retail & Distribution Management	36	3	Iran	Elsevier	0042-257X	1
5	Keraa et al.	Eight-year evaluation of dental public health students' research using the balanced scorecard: A retrospective study	2024	Journal of Dental Education	15	2	Egypt	Elsevier	0022-0337	3
6	Alvarez et al.	Innovation using dynamic balanced scorecard design as an industrial safety management	2024	Safety Science	28	1	Peru	Elsevier	0925-7535	18

		system in a mining metallurgical company								
7	Rahman et al.	Business network and balanced scorecard: An analysis of SMEs in Malaysia	2024	Journal of Scientific Research	42	3	Malaysia	Emerald Publishing Limited	1985-9899	1
8	Prenestini et al.	Keep-or-drop multidimensional control systems in professional organisations: Evidence on BSC use in healthcare	2024	Journal of Health Organization and Management	38	9	Italy	Emerald Publishing Limited	1477-7266	3
9	Sharpe et al.	CEO overconfidence, customer satisfaction, and firm value: Mediating and moderating effects	2023	Journal of Corporate Finance	21	4	Australia	Elsevier	0929-1199	2
10	Saleheen et al.	Embedding attributes towards supply chain performance measurement	2023	Journal of Supply Chain Management	19	1	Bangladesh	Elsevier	0983-7643	26
11	Fatima et al.	Advancing sustainable performance management in the hospitality industry: A novel framework based on a health-inclusive balanced scorecard	2023	International Journal of Hospitality Management	33	2	Saudi Arabia	Elsevier	0278-4319	14
12	Molenda et al.	Resilience Balanced Scorecard: Measuring resilience of manufacturing companies at multiple levels	2023	Journal of Manufacturing Systems	41	3	Germany	Elsevier	0278-6125	2
13	Kai et al.	Constructing internal audit quality	2022	Journal of Auditing and Assurance	10	4	China	Elsevier	1234-9876	15

		evaluation index: Evidence from listed companies in Jiangsu province, China								
14	Akinbowale et al.	The use of the Balanced Scorecard as a strategic management tool to mitigate cyberfraud in the South African banking industry	2022	Journal of Financial Crime	29	2	South Africa	Elsevier	1359-0790	18
15	Wang et al.	Green sustainability balanced scorecard: Evidence from the Taiwan liquefied natural gas industry	2022	Journal of Cleaner Production	52	1	Taiwan	Elsevier	0959-6526	12
16	Wu et al.	Barriers and motivations to integrating environmental performance in the BSC: A case study in healthcare	2021	Sustainability Accounting, Management and Policy Journal	13	2	Taiwan	Emerald Publishing Limited	2040-8021	10
17	Oyewo et al.	Balanced scorecard usage and organizational effectiveness: Evidence from manufacturing sector	2021	Journal of Organizational Effectiveness	18	3	Nigeria	Emerald Publishing Limited	2051-6614	18
18	Wanderley et al.	The unfolding rationales surrounding management accounting innovations: A balanced scorecard case	2021	Accounting, Auditing & Accountability Journal	34	4	Brazil	Emerald Publishing Limited	0951-3574	7
19	Gooneratne et al.	The fate of the balanced scorecard: Alternative problematization and competing networks	2021	Critical Perspectives on Accounting	23	3	Sri Lanka	Emerald Publishing Limited	1045-2354	23

20	Li et al.	Exploration on the gap of single- and double-loop learning of balanced scorecard and organizational performance in a health organization	2021	Journal of Health Organization and Management	29	2	Taiwan	Elsevier	1477-7266	25
21	Hoglund et al.	Strategic management accounting in the public sector context: The case of the Swedish Transport Administration	2021	Journal of Public Budgeting, Accounting & Financial Management	33	4	Sweden	Emerald Publishing Limited	1096-3367	13
22	Gao et al.	Impact of a management innovation on professional subcultures: The case of a balanced scorecard implementation in a Chinese hospital	2020	Journal of Management Studies	58	1	China	Emerald Publishing Limited	0022-2380	6
23	Jardali et al.	Performance management systems in Lebanese private higher education institutions: Design and implementation challenges	2020	Educational Management Administration & Leadership	48	4	Lebanon	Emerald Publishing Limited	1741-1432	19
24	Oliveira et al.	Bureaucracy and the balanced scorecard in health care settings	2020	Public Administration Review	82	2	Portugal	Emerald Publishing Limited	0033-3352	27
25	Martunis et al.	Adaptation of the balanced scorecard model to measure performance of departments at Dr. Zainoel Abidin Regional General Hospital, Banda Aceh	2020	Journal of Healthcare Management	33	3	Indonesia	Emerald Publishing Limited	0894-3257	19

26	Alsharari et al.	Institutional contradiction and BSC implementation: Comparative organizational analysis	2019	Journal of Management Studies	56	3	Saudi Arabia, UK	Emerald Publishing Limited	0022-2380	36
27	Khalid et al.	Incorporating the environmental dimension into the balanced scorecard	2019	Business Strategy and the Environment	28	5	Australia	Emerald Publishing Limited	2049-372X	38
28	Farokhi et al.	Quantitative target setting in balanced scorecard method using simultaneous equations system and goal programming	2019	Journal of Operations Research	47	2	Iran	Emerald Publishing Limited	1741-0401	4
29	Muhtaseb et al.	Micro-level sectoral analysis of developing economies	2019	Journal of Economic Development	44	1	Jordan	Emerald Publishing Limited	1741-0401	8
30	Pour et al.	Factors which improve firm performance of SMEs	2019	Strategic Direction	36	2	Iran	Emerald Publishing Limited	0258-0543	0
31	Wu et al.	Examining the influence of expatriates' social capital and knowledge-sharing behavior on financial performance	2019	International Journal of Organizational Analysis	28	3	Taiwan	Emerald Publishing Limited	1934-8835	15

Based on the summary of studies presented in Table 1, the researcher includes graphical visualizations to illustrate the distribution of publication years of the selected articles, as well as the geographical distribution of the research locations.

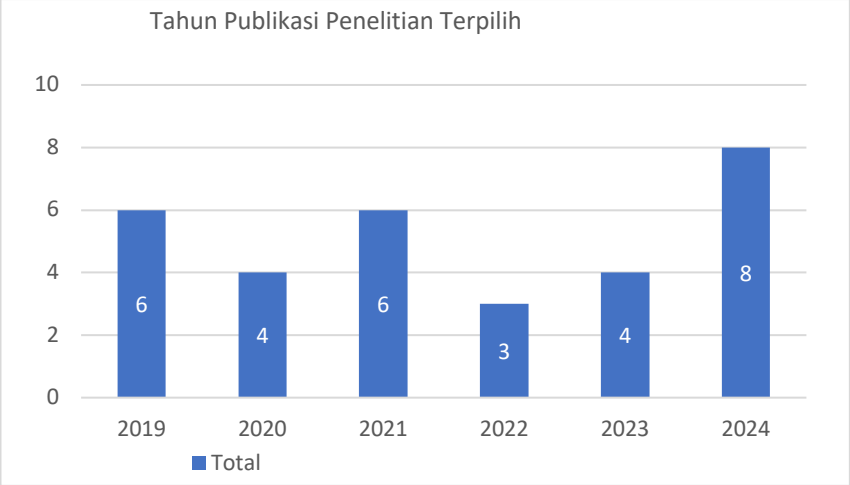

Figure 1. Publication Year of Selected Journals

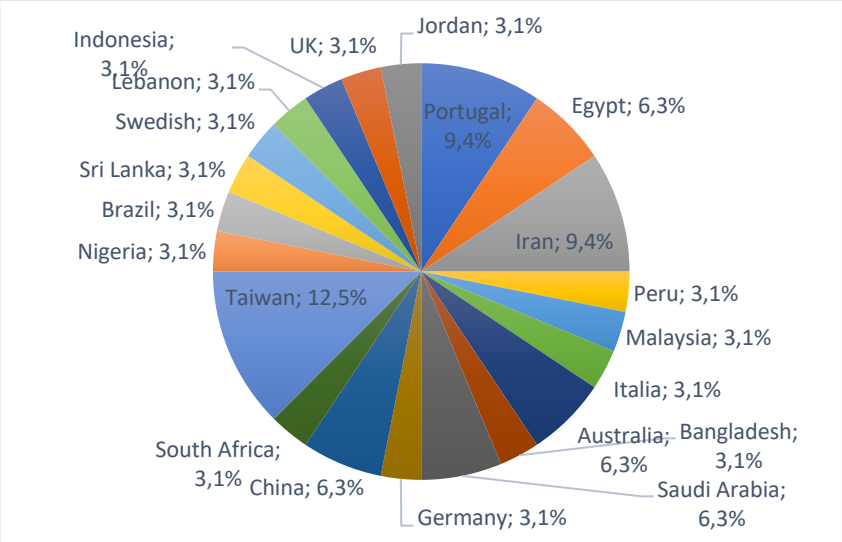

Figure 2. Geographical Distribution of Research

Following the filtering process, the selected articles consist of 6 studies published in 2019, 4 in 2020, 6 in 2021, 3 in 2022, 4 in 2023, and 8 in 2024. In terms of geographical distribution, Taiwan represents the highest proportion (12.5%), followed by Saudi Arabia (6.3%). Furthermore, the researcher identifies journals with the highest citation counts, as highly cited articles are considered to have substantial academic influence. This is illustrated in Figure 3.

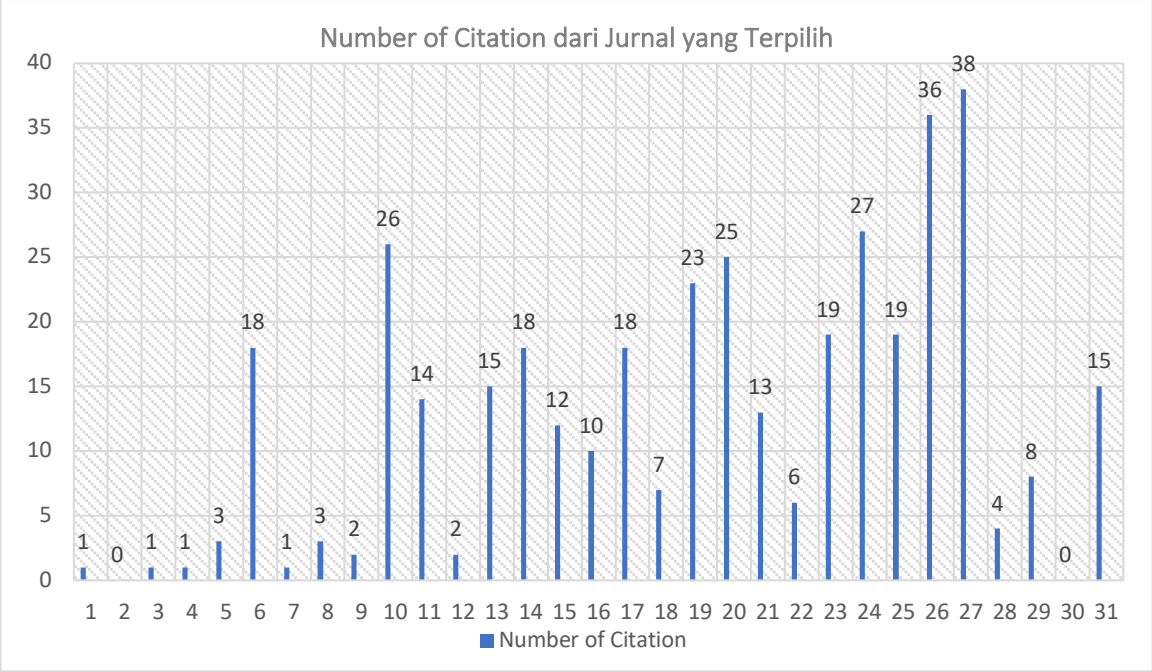

Figure 3. Number of Citations

Based on this distribution, the ten most highly cited articles were selected for further in-depth review, as presented in Table 2.

Table 2. Most Cited Journals

No.	Journal No.	Citation Count	Title
1	27	38	Incorporating the environmental dimension into the balanced scorecard
2	26	36	Institutional contradiction and BSC implementation: Comparative organizational analysis
3	24	27	Bureaucracy and the balanced scorecard in health care settings
4	10	26	Embedding attributes towards the supply chain performance measurement
5	20	25	Exploration on the gap of single- and double-loop learning of balanced scorecard and organizational performance in a health organization
6	19	23	The fate of the balanced scorecard: Alternative problematization and competing networks
7	23	19	Performance management systems in Lebanese private higher education institutions: Design and implementation challenges
8	25	19	Adaptation of the balanced scorecard model to measure performance of the departments at Dr Zainoel Abidin Regional General Hospital, Banda Aceh
9	14	18	The use of the Balanced Scorecard as a strategic management tool to mitigate cyberfraud in the South African banking industry
10	17	18	Balanced scorecard usage and organizational effectiveness: Evidence from manufacturing sector

The most cited study by (Khalid et al., 2019), titled *Incorporating the environmental dimension into the balanced scorecard*, examines the integration of environmental dimensions into the BSC framework within the healthcare sector. Conducted in Australian hospitals, the study demonstrates that healthcare organizations can utilize BSC to assess environmental performance through indicators such as medical waste management and carbon emission reduction. This integration provides significant benefits by balancing environmental responsibility with operational efficiency, aligning with the broader demands of socially responsible healthcare organizations. These findings reinforce earlier research by (Zingales, 2018), which emphasizes the need for flexible yet standardized environmental performance indicators in the healthcare sector. By incorporating environmental metrics into BSC, organizations can align sustainability objectives with strategic goals without compromising operational effectiveness.

The study by (Alsharari, 2019), *Institutional contradiction and BSC implementation: Comparative organizational analysis*, conducted in Saudi Arabia and the United Kingdom, reveals that BSC implementation is more effective in organizations where its elements are embedded within organizational culture. The findings highlight the importance of institutional flexibility, particularly in contexts characterized by contradictions between organizational objectives and structural arrangements. This suggests that BSC must be adapted to align with daily practices and institutional frameworks. These results are consistent with (Mehralian et al., 2017), who emphasize the necessity of institutional adaptation for successful BSC implementation, especially when organizational goals are misaligned with existing structures.

The study *Bureaucracy and the balanced scorecard in health care settings* by Oliveira et al. (2020) demonstrates that BSC implementation in the Local Health Unit (LHU) Porto, Portugal, enhances systematic, transparent, and structured management by integrating bureaucratic features such as accountability and transparency. BSC promotes employee engagement through regular feedback and transparent performance evaluation, fostering a collaborative culture and ensuring that each department aligns its performance indicators with organizational objectives. Consequently, the LHU adopts a more flexible and responsive neo-bureaucratic approach to meet the needs of both patients and staff. These findings are consistent with (Emami & Doolen, 2015), which show that the learning perspective of BSC enhances employee engagement and professional competency.

The study by Saleheen et al. (2023), *Embedding attributes towards the supply chain performance measurement*, develops an Integrated Supply Chain Performance Measurement (ISCPM) model by combining the Balanced Scorecard (BSC), Analytic Hierarchy Process (AHP), and Structural Equation Modeling (SEM). The results indicate a significant improvement in supply chain performance measurement within the manufacturing sector in Bangladesh. By integrating BSC with the SCOR model, the ISCPM framework effectively combines financial and non-financial perspectives to enhance operational efficiency and provide strategic guidance for stakeholders. The model emphasizes key attributes such as supplier relationship management, internal supply chain management, and customer relationship management, ensuring operational sustainability and responsiveness in dynamic market conditions. These findings align with (Kurien G.P & Qureshi M. N, 2018), which highlight the role of BSC in driving operational efficiency and continuous improvement in complex supply chains.

The study by (Li et al., 2021), *Exploration on the gap of single- and double-loop learning of balanced scorecard and organizational performance in a health organization*, investigates the role of single-loop and double-loop learning within the BSC framework. The findings reveal that single-loop learning supports routine operational management, while double-loop learning fosters innovation and the development of new organizational capabilities. This aligns with the perspective of Kaplan and Norton, who argue that learning within BSC enhances organizational adaptability. The study is further supported by (Mehralian et al., 2017), which emphasizes the importance of double-loop learning in achieving organizational innovation.

The research by (Gooneratne & Hoque, 2021) examines the failure of BSC implementation in a Sri Lankan bank. Although initially introduced to replace traditional budgeting systems and broaden performance measurement beyond financial indicators, BSC implementation encountered significant internal resistance. Mandatory presentations and monthly monitoring reports imposed additional burdens on employees, leading to data manipulation, particularly in non-financial indicators that are difficult to measure objectively. Following leadership changes—from a pro-BSC CEO to a CFO favoring traditional budgeting—the system lost managerial support and practical relevance. The study concludes that misalignment with organizational culture and weak internal coordination contributed to the failure of BSC as a primary control system. These findings are consistent with (Yu et al., 2008), which identify complexity and cultural resistance as key barriers to BSC implementation.

The study by (Al Jardali et al., 2020) examines the challenges of BSC implementation in higher education institutions in Lebanon. The findings indicate that higher education institutions require tailored performance indicators, particularly in measuring learning outcomes and teaching quality. This supports earlier research by Tyson and Schwarz (2016), which highlights the need for education-specific performance metrics beyond financial outcomes. The study demonstrates that BSC can be effectively adapted to reflect educational objectives, especially in academic contexts.

Finally, the study conducted at Dr. Zainoel Abidin Regional General Hospital in Banda Aceh by (Martunis et al., 2020) confirms the effectiveness of BSC in evaluating departmental performance within healthcare institutions. The findings align with earlier studies by (Chow et al., 1998) and (Taufik, 2018), which demonstrate that BSC is valuable not only for financial performance measurement but also for non-financial aspects such as customer satisfaction and human resource development—critical components in healthcare services. This study also supports (Chen et al., 2021), which highlights the ability of BSC perspectives to generate more comprehensive performance measurement systems in hospitals, although contextual adaptation of indicators remains necessary. Overall, this

research reinforces the relevance of BSC in complex healthcare organizations and underscores the importance of customizing performance indicators to meet the specific needs of the public sector. The study by (Esther Akinbowale et al., 2022) applied the Balanced Scorecard (BSC) to mitigate cyberfraud in the South African banking industry. Focusing on the four core perspectives—financial, internal processes, customer, and learning and growth—the findings indicate that the BSC approach helped banks strengthen financial controls, improve internal processes, safeguard customer data, and enhance staff capabilities in responding to cyber threats.

The developed BSC framework proved effective in improving security, customer satisfaction, and institutional resilience against cyberfraud risks. This finding is consistent with (Chenhall & Langfield-Smith, 2007), who argued that BSC overcomes the limitations of traditional accounting systems by incorporating non-financial measures relevant to managing risks such as cyberfraud. It also supports the findings of (Zhang & Li, 2009), who showed that in the banking sector BSC can function as a strategic management tool for monitoring performance and improving customer satisfaction through stronger data protection. Likewise, (Rafiq et al., 2020) found that non-financial perspectives, particularly learning and growth, significantly enhance responsiveness to external threats and human resource development, an approach effectively reflected in the cyberfraud mitigation framework developed by Akinbowale et al.

The final study by (Oyewo et al., 2022) shows that the Balanced Scorecard (BSC) improves organizational effectiveness in Nigeria's manufacturing sector, particularly through the financial and customer perspectives. Factors such as accounting management expertise and foreign affiliation strengthen BSC adoption; however, weak integration across perspectives reduces its overall impact. These findings are consistent with (Hoque & James, 2000), who similarly emphasized the importance of specialized skills in BSC implementation and cross-perspective integration to achieve optimal performance.

5. Conclusion and Recommendations

This study provides a comprehensive understanding of Balanced Scorecard (BSC) implementation in manufacturing and service industries through an analysis of the 10 most highly cited and most relevant articles selected from 31 reviewed journals, all published within the last five years. Overall, BSC is shown to be an effective strategic tool for performance evaluation in both sectors. Its application demonstrates that flexibility and indicator adaptation are essential to ensure alignment between organizational objectives and operational practices. The study by (Alsharari et al., 2019) highlights the importance of institutional adaptation so that BSC fits organizational culture in both manufacturing and service settings. Similarly, (Li et al., 2021) suggests that dual learning approaches—single-loop and double-loop—can help organizations innovate in pursuing strategic objectives. In this regard, BSC supports a more integrated management of financial and non-financial indicators, thereby facilitating sustainable performance improvement and employee growth.

In the manufacturing sector, BSC has proven effective in improving operational effectiveness and performance evaluation, particularly through its financial and customer perspectives. The study by (Oyewo et al., 2022) demonstrates that BSC strengthens financial performance and customer engagement. Factors such as specialized accounting management skills and support from foreign affiliations further reinforce BSC adoption in this sector. Nevertheless, integration across perspectives often remains weak, limiting the full potential of BSC to produce optimal outcomes. In addition, the Integrated Supply Chain Performance Measurement (ISCPM) model, which combines BSC and SCOR (Saleheen & Habib, 2023), shows that BSC can be further optimized through sector-specific performance indicators, such as supply chain management, to achieve greater operational efficiency.

In the service sector, particularly in healthcare and finance, BSC has demonstrated effectiveness in balancing financial and non-financial performance measurement. The study by Oliveira et al. (2020) underscores the role of BSC in enhancing transparency, accountability, and employee engagement in hospitals through structured and systematic management. Research by (Khalid et al., 2019) further shows that environmental indicators can be integrated into BSC in the healthcare sector to support sustainability objectives. In the banking industry, the study by (Esther Akinbowale et al., 2022) indicates that BSC strengthens internal control processes and risk management, particularly in mitigating cyberfraud. This confirms that customer and learning perspectives are crucial for improving satisfaction and organizational capabilities in service-based institutions.

Overall, this study confirms that the Balanced Scorecard (BSC) is an effective strategic tool for supporting performance evaluation in both manufacturing and service sectors. Its ability to integrate and adapt financial and non-financial perspectives to sector-specific needs allows it not only to improve operational efficiency, but also to strengthen accountability, employee engagement, and customer satisfaction. These findings suggest that, when properly adapted, BSC can become a key mechanism for achieving strategic objectives while promoting innovation and continuous improvement across industries.

As a recommendation, future research should examine BSC implementation in greater depth by developing sector-specific indicators that are more closely aligned with the characteristics of manufacturing and service industries. Given the distinct performance demands and operational challenges in each sector, future studies should explore more tailored adaptations of BSC, such as integrating environmental sustainability indicators in manufacturing or data security and patient satisfaction indicators in healthcare services. In addition, assessing the long-term effects of BSC through longitudinal studies would provide broader insight into its effectiveness in supporting sustainable and innovative organizational change. Finally, collaboration with multiple stakeholders in BSC implementation would be valuable for understanding practical challenges and improving the alignment of this tool with organizational culture and real-world conditions.

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