Triple Bottom-Line: A Critical Review and Need for Strategic Renewal

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Abstract

The concept of Triple Bottom Line (TBL), as proposed by John Elkington in 1994, is centered on three pillars of sustainability: Economic Performance, Social Performance and Environmental Performance. The TBL initially received much attention from industry and academia. Nevertheless, given the rapidly changing global corporate landscape, there is an overarching need for a more balanced and comprehensive perspective for deriving sustainable performance outcomes. Several authors, including Elkington, have identified some limitations in the current TBL framework. Keeping this in mind, this paper critically identified and evaluated the critique done by the prior researchers. In this regard, the data were collected using the Scopus database by using Boolean search terms. A systematic search of 156 studies was performed, followed by removal of duplicates, relevance screening and quality assessment to achieve 36 critically analyzed articles. These were coded and categorized to recognize gaps and suggested solutions regarding the TBL framework. Based on a critical review and literature inquiry, this research identified and discussed seven major criticisms on the TBL approach. This research recommends that if contemporary business firms ought to reap maximum value benefit, the underlying criticisms must be addressed as part of the strategic renewal of the existing TBL framework. The renewed TBL framework would consequently assist the business firms in creating, sustaining and maximizing the performance advantage for diverse organizational stakeholders.

Keywords: Triple bottom line; critical review; sustainability; sustainable firm performance; sustainable development; economic performance; environmental performance; social performance.

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1. Introduction

Given the member countries' adoption of the UN's SDGs, sustainability and sustainable development have been at the forefront of contemporary business firms. Sustainability is particularly crucial when resources are limited, and their irrational use may result in scarcity. John Elkington first addressed the issue in 1994, when he coined the Triple Bottom Line (TBL) concept while co-founding the consultancy company Sustain Ability (Elkington, 1994). Elkington explored in detail the pillars of TBL in his book 'Cannibals with Forks (Elkington, 1999) to assess current performance measures and added the TBL framework to achieve higher organizational efficiency. Primarily, TBL was an accounting model that quantified an organization's performance on three pillars, i.e., economic bottom-line, social bottom-line, and environmental bottom-line. This model was warmly accepted universally and widely used in business and research communities (Hasan et al., 2025; Hashim et al., 2023; Sridhar, 2011; Wu et al., 2024). The idea was highly appreciated and put into practice by companies and researchers alike (Neri et al., 2021; Sridhar, 2011). Organizations consider TBL philosophy in their operations to ensure that processes are eco-friendly and societal concerns along with financial benefits are also considered (Mushi et al., 2022). TBL framework promotes firms to develop a business model that brings value for other stakeholders along with profit maximization (Hultberg & Pal, 2023). The businesses generate profit along with creating value for people and the planet.

However, this concept also has to face criticism. Although Elkington elaborated TBL philosophy in detail in his book, Srivastava et al. (2021) argued that the limitations of this concept are not sufficiently discussed. The lack of exploring the limitations and gaps of the TBL concept resulted in the lack of its applicability as expected by Elkington (Elkington, 2018). Therefore, there is a need to investigate such gaps, which are explored in previous literature. The sustainability of the organization can be enhanced by addressing these gaps. Previous literature has already pinpointed several gaps in the TBL concept including the lack of measuring instruments (Dissanayake & Pal, 2023; Sridhar, 2011), integration, and value creation (Cahyadi et al., 2022; Neri et al., 2021). These criticisms have helped guide the development of extended versions of TBL. Elkington (2018) also recommended re-examining the TBL framework to address these issues. Scholars have suggested that some of these gaps be resolved through various solutions. For example, extensions to the TBL framework have appeared in the Quadruple Bottom Line or Quintuple Bottom Line (Panneels, 2023). Some research has also introduced TBL in a new application based on the People, Process, and Technology (PPT) principle (Machado et al., 2024). Nonetheless, no study has put together all the gaps identified in the TBL concept to be researched and redressed in the future. Since sustainability practitioners must be aware of these gaps and find solutions to apply sustainability strategies within organizations, the current study identifies the gaps in the TBL framework presented in prior literature. Accordingly, two important research questions are evaluated in this study: (i) What gaps exist in the TBL concept? (ii) What gaps have been addressed through existing research, and which areas have remained unevaluated and warrant further investigations? Accordingly, this research will assist scholars, academics, and

businesses in scanning these gaps before applying sustainability measures within organizations, helping them avoid problems.

This paper is henceforth structured around six sections. Section 2 focuses on the literature on the TBL concept with discussions on contributions provided by several researchers; Section 3 discusses research methodology; Section 4 highlights Criticisms of the TBL idea; Section 5 discusses proposed solutions; Section 6 is about discussion Section 7 discusses limitations and recommendations for future research; and Section 8 concludes the study.

2. Literature Review

2.1 Conventional Financial Metrics: Pre-Triple Bottom Line

Traditionally, the performance of supply chains was determined using financial measurements such as profitability ratios, efficiency ratios, solvency ratios, and activity ratios (Gunasekaran & Kobu, 2007). Such measures were usually used to gauge organizations' cost-effectiveness and operational performance. Although these financial measures give information on economic performance, they can only capture a minor part of the value of an organization. Lambert and Cooper (2000) also pointed out the focal point of cost-related measures in measuring supply chain processes.

With time, businesses began to recognize the importance of sustainability in using natural resources. To ensure resource availability for future generations, organizational performance gradually expanded beyond traditional financial metrics to include sustainability indicators. This shift represents a broader view of operational performance, aligning with corporate social responsibility and environmental stewardship. Chandra and Verma (2023) noted that living sustainably involves making lifestyle and business choices that support happy, healthy, and economically viable lives without compromising the planet's well-being. In the supply chain management (SCM) perspective, sustainability means the procedures followed that help to minimize the utilization of packaging material, waste reduction, implementing reduced carbon emission processes, and eco-efficient practices during production, operations, and delivery of eco-friendly products (Osei et al., 2023). This sustainability concept was derived from TBL philosophy by integrating environmental, social, and economic dimensions into business performance evaluation.

2.2 Triple Bottom Line: A Modern Sustainability Framework

In 1994, John Elkington proposed the TBL concept. He discussed its three bottom lines in his article published in 1998. His book "Cannibals with Forks" explored the foundation of these three pillars in detail, which helps to develop the sustainability reporting system (Elkington, 1999; Srivastava et al., 2021). The TBL approach extended the corporate performance concept from

an economic perspective by including social and environmental performance dimensions. This holistic concept achieved tremendous support from stakeholders. The urge organizations to switch their focus from a purely economic perspective to TBL approach (Nogueira et al., 2023). Three pillars of the TBL concept are based on the 3P principle, including planet, people, and profit. It is a paradigm to investigate the performance of the products, services, and organizations based on economic prosperity, social justice, and environmental quality (Rosario & Traverso, 2023). It considers that for long-term business success, societal and environmental concerns should also be considered along with economic profitability.

The economic bottom-line is related to the conventional financial measures, including return on investment, profitability, liquidity, and competitiveness. The environmental bottom-line is concerned with reducing harmful ecological effects like waste production, pollution, and excessive use of resources. Finally, the social bottom-line measures an organization's social contributions, such as creating jobs, promoting social fairness, and the well-being of communities at large (Hultberg & Pal, 2023). With the TBL approach, companies are urged to make profits without undermining environmental integrity and human well-being, connecting long-term prosperity to sustainability principles. Figure 1 below shows the concept of TBL from a sustainability point of view. The figure shows three overlapping circles symbolizing the economic, environmental, and social dimensions. Sustainable performance overlaps the three, implying that sustainability occurs only when combined. Therefore, the TBL framework emphasizes that sustainability is only possible when economic, environmental, and social dimensions are all considered together.

Figure 1: Sustainability Concept in TBL (Ghahremani-Nahr et al., 2022)

2.2.1 Economic Bottom Line

The primary goal of every organization is to conduct its operations in a manner that creates economic value and achieves profitability (Elkington, 1998). The economic bottom line of the TBL system assesses the extent to which business activities affect the organization's economic system without hindering future generations' capability to satisfy their needs (Hashim et al., 2023). Historically, economic performance has been quantified by financial measures and accounting-based figures, including profit margins, return on investment (ROI), and cost-effectiveness. Elkington (1999) developed the idea of economic capital, the sum of an organization's assets minus its liabilities. In sustainability, Isil and Hernke (2017) found two primary viewpoints: weak and strong. Weak sustainability suggests that growth can continue even at the cost of nature, provided that total capital resources are fixed. On the other hand, strong sustainability suggests that economic activity should occur without losing or degrading natural resources to ensure that nature is undiminished for the next generation.

Seuring and Müller (2008) recommended measuring economic value beyond typical financial metrics. Gangwar et al. (2023) noted that economic sustainability encompasses cost reduction, strategic resource management, and delivering value to stakeholders. While economic performance continues to be an important dimension for organizational effectiveness, contemporary discussions state that to be properly sustainable, the economic bottom line has to be integrated with environmental and social factors that make up the complete foundation of the TBL model.

2.2.2 Social Bottom Line

The social aspect of TBL deals with problems concerning the well-being of people, organizations' ethics, and societal development. It discussed fundamental social issues like gender inequality, child labor, social justice, and overall society's well-being (Bubicz et al., 2019; Dias et al., 2024; Govindan et al., 2021). As per Hashim et al. (2023), social performance is adopting business practices that contribute to the organization and generate positive value for the larger community. Previous studies have conceptualized social performance in the context of ethical labor practices, responsible sourcing, local consumption, community involvement, and social capital and support system (Charatsari et al., 2018; Giampietri et al., 2016; Jamali et al., 2006; Elkington, 1999; Jamali et al., 2006; Milne & Gray, 2013; Srivastava et al., 2021; Zaharia & Zaharia, 2021). These practices utilize social resources to improve people and society through poverty reduction, employee welfare, and organizational openness (Govindan et al., 2021).

Although its importance cannot be underestimated, the social aspect of sustainability has long been less prioritized by the TBL framework's economic and environmental pillars (Denu et al., 2023). Elkington (1998, 1999), nonetheless, pointed out that failure to address social and ethical issues can slow down long-term organizational development and public trust. He contended that businesses not investing in social causes risk their reputation and lower stakeholder trust.

2.2.3 Environmental Bottom-Line

The environmental aspect is the third of the three pillars of TBL. It focuses on preserving environmental resources to remain sustainable for future generations. Strong environmental performance encompasses strategies that promote low resource utilization and lower the ecological impact of production and operation activities (Charatsari et al., 2023). To redress increasing environmental issues, regulatory authorities across the globe have issued guidelines and regulations focused on environmental protection (Yang et al., 2023). Environmental performance could be significantly enhanced by implementing green practices and mitigating adverse environmental effects (Ibrahim et al., 2024; Seuring & Müller, 2008). Several organizations have implemented green practices in order to increase their environmental performance. For instance, General Motors introduced a reusable materials program with suppliers that assisted in decreasing the cost of disposal by around $12 million (Murray, 2019; Yang et al., 2023). An analysis pinpointed some factors responsible for causing environmental damage, such as ecosystem disturbance, air pollution, emission of toxic materials, and overuse of water (Bhat et al., 2024). As indicated by the National Aeronautics and Space Administration (2025), the year 2024 was logged as the hottest on record, a reminder of the environmental difficulties that befall humankind. In response to such concerns, prevention of environmental degradation has emerged as a priority among organizations globally. Organizations now prioritize environmental care and resource preservation as fundamental aspects of sustainable business operations.

2.3 Critiques and Limitations of the Triple Bottom Line

TBL has been seen globally as a practical framework for directing organizational strategy, planning, coordination, and long-term sustainability (Senyo & Osabutey, 2023). Many businesses and academics have endorsed the concept, with thousands of search results on the internet available on its usage. It is an official standard for most organizations (Sridhar, 2011). Nevertheless, with its extensive usage, TBL has not been criticism-free (Isil & Hernke, 2017). One of the main criticisms of the TBL is that it is more concerned with public relations and external image than with dealing with the company's particular issues (Sridhar, 2011).

Moreover, previous studies argued that TBL combined both financial (economic) and non-financial (social and environmental) pillars. It creates difficulty in measuring and evaluating each pillar (Dubey et al., 2017; Isil & Hernke, 2017; Sridhar, 2011). Srivastava et al. (2021) argued that Elkington did not discuss the limitations of the concept. Elkington also realized that the gaps and limitations prevent the organizations to achieve sustainability benefits as desired. Another strong criticism is that most of the company use sustainability as a marketing tool and do not show their interest in practically implementing this concept (Srivastava et al., 2021). Elkington himself realized that this concept is not truly implemented as desired. Therefore, he suggested rethinking the concept to address the gaps and lacks identified in previous literature (Elkington, 2018). In this study, a critical review of the triple bottom-line is conducted to investigate the gaps as discussed

in previous literature. This study also discussed solutions to these gaps, which are discussed in previous literature.

3. Methodology

This section defines the procedure related to data collection, keywords and the database used for the collection of data, and how the analysis of data was performed. In this study, the data were collected from Scopus. Scopus is a reliable and prominent database containing well-reputed, highly reliable, impactful, and quality studies. As this study aims to provide a critical analysis of the TBL concept from previous literature, the data was collected by implementing the Boolean operation "AND" to combine keywords related to the TBL. Search results against different search terms collected from the Scopus database are summarized in Table 1.

Table 1
Number of Studies Related to TBL Gaps

Search Term	No of studies
"Triple Bottom Line" NOT" benefits"	82
"Triple Bottom Line" AND "critical review"	17
"Sustainable supply chain" AND "critical review"	14
"Triple Bottom Line" AND "measure"	14
"Triple Bottom Line" AND "limitation"	12
"critiques" AND "Triple Bottom Line"	11
"Triple Bottom Line ethical issue"	1
"Sustainability reporting"	1
"Triple bottom line issues"	1
"Criticisms of Triple Bottom Line"	1
"Critique of sustainability reporting"	1
"Challenges of Triple Bottom Line"	1
Total papers	**156**

Using the above keywords, a total of 156 studies were found. English is an international language that most of the community can easily understand. Moreover, most of the literature is available in this language. Therefore, the English language was selected to evaluate the studies. The detailed process of this critical review is shown in Figure 2. Although Elkington admitted that the TBL concept, as desired, had not achieved the desired results (Elkington, 2018; Srivastava et al., 2021), limited studies have worked on extending this concept. Therefore, after inquiring multiple times, as mentioned in Table 1, only 156 articles were found. After downloading their CSV files, the data was checked to identify duplicates. A total of 17 duplicates were found, which were then removed. After removing the duplicates, a quality assessment of the remaining studies was performed in two steps. In the first step, the title and abstract of each article were studied to investigate the relevance of the study to the RQs.

This step identified 70 articles irrelevant to the RQs of this study. In the second step, the remaining sixty-nine articles were thoroughly studied. This step led to the selection of only 36 articles discussing the critiques and resolutions of the TBL concept, the critiques and resolution of the TBL concept. This study critically reviewed these thirty-six articles to identify gaps and proposed academic solutions for these gaps. These articles were read and re-read to achieve immersion in the data and gain an overall understanding of the data. Relevant sections of each article were assigned codes. These codes help to identify the gaps and solutions discussed in these articles. These codes also helped to group different articles, identifying similar gaps with different context and identifying solutions to the gaps defined. These articles are grouped in table 3 and table 4.

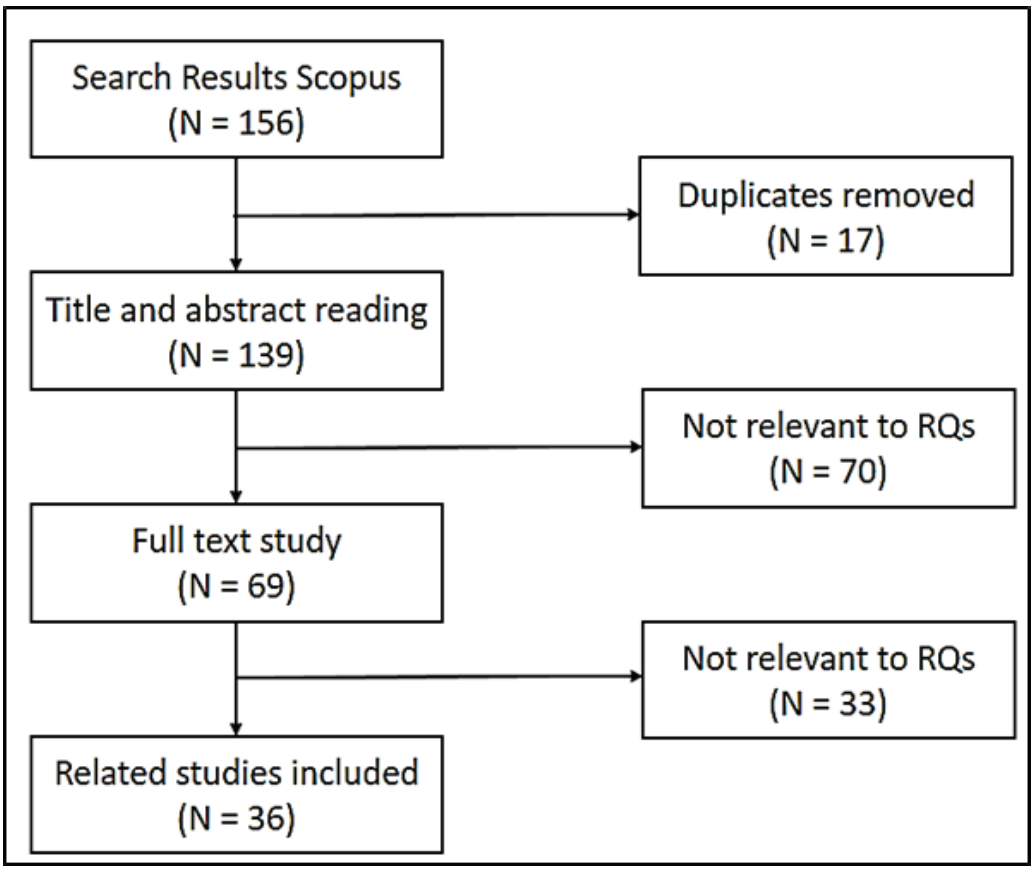

Figure 2: Literature Review Process Followed

Table 2 shows the year-wise data of search results at Scopus. This table shows that in 2017 and after 2021, the trend of identifying the gaps in the TBL philosophy is increasing. The same results are presented in Figure 2. It implies that the need to enhance the TBL concept increases with time. Srivastava et al. (2021) explored that TBL deviates from its goal of attainment. Elkington

(2018) insisted on recalling the TBL concept to include value creation so that fruitful results can be achieved. After his prediction, the trend of discussing the gaps in the TBL concept has vastly increased.

Table 2
Year-wise publications related to TBL criticism

Year	No of Papers published
2006	4
2008	4
2009	3
2010	1
2011	4
2012	3
2013	6
2014	5
2015	4
2016	6
2017	16
2018	11
2019	11
2020	11
2021	14
2022	16
2023	17
2024	18
2025	2
No of Papers	**156**

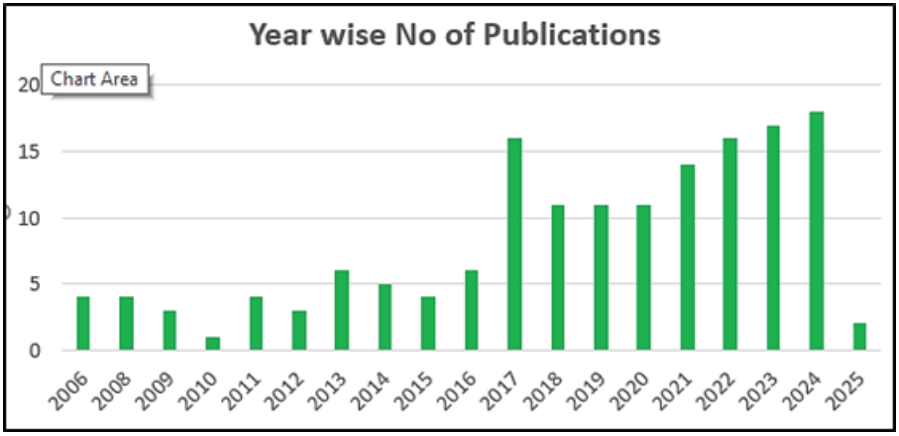

Figure 3: Year-wise Publications Related to Gaps in TBL

4. Critique of the Triple Bottom Line Concept

This research systematically examines the TBL-related extensions and gaps revealed in earlier studies. For this purpose, applicable data were extracted from the Scopus database. After a thorough screening, 36 peer-reviewed articles were shortlisted for in-depth examination. A rigorous review of the articles identified seven major critiques often debated in the literature. The critiques are briefed and graphically illustrated in Figure 3.

The critiques do not suggest that the TBL idea has failed outright. Instead, filling such gaps may significantly improve the effectiveness and real-world application of the TBL model. The gaps thus identified are presented in Table 3. Elkington (2018) recognized the necessity of refocusing on the original idea and called for attempts at yielding solutions capable of enhancing its implementation and effect. Earlier research has suggested different methods to fill these gaps. These suggested solutions are given in Table 4. However, there is an urgent need to look for other, more effective, efficient, and responsive strategies to implement sustainability successfully. The subsequent sections elaborate on these gaps and their respective solutions in detail.

Figure 4: Summary of Gaps in Prior Literature on TBL

4.1 Absence of Contextual Factor

The framework's effectiveness can be significantly enhanced by rectifying its shortcomings, most notably by including influential contextual elements. Past research underlines the value of considering these elements in implementing the TBL method to gain desirable outcomes. Some studies have highlighted that including a rationale behind the adoption of sustainability, like the cause or the objective, can assist in ensuring the effective adoption of TBL (Hamidi et al., 2025; Inayatullah, 2005), which is presently missing.

4.2 Difficult to Measure

Another pertinent criticism against the TBL is its lack of sound measures. TBL's economic, social and environmental pillars are measured by employing various means, complicating the integration and interpretation aspects. The bottom line of economic issues is

best gauged via quantitative measurement methods, as TBL's social and environmental pillars have more qualitative applications (Kiel et al., 2017). Data collection for the pillars encompasses different approaches drawn from different internal and external stakeholders at various levels (Kiel et al., 2017). Also, each dimension calls for different functional units used in measuring them (Oppon et al., 2024) and combining qualitative and quantitative data to measure overall TBL performance proves challenging. TBL is also limited when quantifying non-financial effects, especially regarding the social pillar, for which there is no organized solution for measurement (Isil & Hernke, 2017; Srivastava et al., 2021). Another issue is defining the relative weight of each pillar within the overall TBL concept. Whereas some research takes equal weight for all pillars for granted, in reality, it is usually impossible (Zaharia & Zaharia, 2021).

4.3 Lack of Integration

One of the significant challenges under the TPL is the non-integration between its three pillars. Integration indicates the interrelations between TBL's economic, social, and environmental aspects (Zaharia & Zaharia, 2021). Earlier research has pointed out that these pillars are separate and generally addressed separately, as opposed to being integrated as part of an overall system (Cahyadi et al., 2022; Kiel et al., 2017; Sridhar & Jones, 2013; Zaharia & Zaharia, 2021). For instance, the economic bottom line is quantifiable, but the social and environmental pillars do not have equally structured, quantitative measures (Isil & Hernke, 2017). In addition, most academic contributions have been in the economic aspect, while issues related to the environment have mainly been discussed in the context of green supply chains. Conversely, the social pillar is usually regarded as the weakest and has been addressed relatively less (Neri et al., 2021). Sridhar (2011) posited that TBL mainly responds to public concern but does not enhance or define indicators of organizational wellness. It is also impossible for each of the three pillars to generate homogeneous outcomes, adding further complexity to incorporating TBL into a singular framework (Zaharia & Zaharia, 2021).

4.4 Lack of Operational Performance

Sridhar (2011) contended that the TBL operates more as a decision-based algorithm than a model that effectively deals with operational performance. This lack of emphasis on operations has been noted by other scholars as well (Nawaz et al., 2016; Sridhar, 2011). Tseng et al. (2020) noted that the operational performance construct has been widely researched for over two decades, and hundreds of studies are on the subject. However, operational performance continues to be omitted mainly from the TBL approach.

4.5 Lack of Ranking Different Stakeholders

In organizational processes, stakeholders, such as suppliers, employees, owners, shareholders and customers, pursue shared objectives. Sustainable operations are dependent on

the active engagement of every stakeholder. Consequently, it is essential to ascertain and prioritize each stakeholder's contribution based on their influence. The TBL framework does not provide for or rank these contributions (Cahyadi et al., 2022; Sridhar, 2011). Moreover, TBL does not define the contribution of each pillar (economic, social, and environmental) as an individual contribution to the overall framework (Zaharia & Zaharia, 2021). Hence, attaining a three-pillar balanced integration is still a significant challenge.

4.6 Barrier of Regulatory Measures Implementation

Srivastava et al. (2021) have contended that the TBL framework tends to deviate from its true purpose since it does not have definite directions on how it should be applied at the organizational and societal levels. Although governments' regulatory agencies across nations try to implement sustainability-related regulations, a lack of strong enforcement mechanisms prevents the achievement of TBL's environmental and social aspects. Therefore, these two pillars are usually not applied in their letter and spirit (Dissanayake & Pal, 2023).

4.7 Lack of Overlapping Dimensions of Triple Bottom Line

Recent studies have highlighted that current technological advancements in the corporate sector make the traditional TBL concept insufficient to address complexities (Panneels, 2023; Tseng et al., 2020; Wu et al., 2024). Due to the scarcity of natural resources, sustainability integration challenges are becoming more demanding in business environment. There is an alarming need to overlap TBL pillars. Tseng et al. (2020) advocated to overlap dimensions of the TBL concept. Organizations can achieve co-benefits and more meaningful sustainability as compared to the results achieved from three pillars in isolation. These hybrid dimensions like socio-environmental, eco-efficiency, and socio-economic provide more holistic approach of sustainability by reflecting the interdependence between the pillars of TBL. It supports for developing operational strategies of the organizations in broader perspective align with environmental and societal goals. However, current TBL philosophy does not provide such type of integrative dimension. It reduces the effectiveness of sustainability operations in the organization.

Table 3
Critiques on the Triple Bottom Line Concept

S #	Critiques	Description	Reference
1	**Contextual Factor**	TBL does not include contextual factors. These factors may enhance the effectiveness of TBL in the organization. (Inayatullah, 2005; Panneels, 2023) or 5P (Rhama, 2023).	(Inayatullah,2005;Panneels, 2023; Purvis et al., 2019; Rhama, 2023)
2	**Difficult to Measure**	It is not easy to measure TBL dimensions that contain both qualitative and quantitative data.	(Cahyadi et al., 2022; Dissanayake & Pal, 2023; Isil & Hernke, 2017; Kiel et al., 2017; Milne & Gray, 2013; Neri et al., 2021; Oppon et al.,2024; Sridhar, 2011; Srivastava et al., 2021; Waite, 2009)
3	**Lack of Integration**	Previous studies criticized TBL as a problematic process due to the failure to integrate the three distinct dimensions. Due to this conflict, it provided an unclear solution.	(Cahyadi et al., 2022; Jamali et al., 2006;Kiel et al., 2017; Kravchenko et al., 2020; Machado et al., 2024; Milne & Gray, 2013; Nawaz et al., 2016; Neri et al., 2021; Oppon et al., 2024; Sridhar, 2011; Sridhar & Jones, 2013; Zaharia & Zaharia, 2021)
4	**Lack of Operational Performance**	Operational performance is not included in the TBL concept. It is considered a decision algorithm and fails to deal with operations.	(Dubey et al., 2017; Li et al., 2025; Nawaz et al., 2016; Sridhar, 2011; Srivastava et al., 2021; Tseng et al., 2020)
5	**Lack of Ranking**	TBL fails to rank different stakeholder groups according to their performance and value creation.	(Cahyadi et al., 2022; Sridhar, 2011; Zaharia & Zaharia, 2021)
6	**Lack of Regulatory Measures**	In most countries, regulatory measures regarding social and environmental issues are not truly practiced.	(Davidson, 2010; Dissanayake & Pal, 2023; Lopez-Arboleda et al., 2021; Srivastava et al., 2021)
7	**Lack of Overlapping TBL Dimensions**	TBL's traditional perspective is insufficient for implementing sustainability in the organization.	(Tseng et al., 2020; Wu et al., 2018)

5. Gaps in TBL Framework and Suggested Scholarly Improvements

Though the criticisms of the TBL approach point out critical weaknesses, they do not make the concept useless or irrelevant. Instead, the criticisms are helpful pointers that set the stage for improving and enhancing the TBL method to deliver more meaningful and concrete sustainability results. Studies have suggested improvements and alternative models to overcome the loopholes identified when using TBL. For instance, Panneels (2023) developed the Quintuple Bottom Line model, building on the conventional three pillars of a 5P model: purpose, people, planet, profit, and place. The model is centered on incorporating contextual elements, providing a more integrated and wide-ranging sustainability focus. Seuring and Müller (2008) promoted stronger sustainability metrics to respond to the chronic problem of TBL measurement issues. Dubey et al. (2017) proposed a comprehensive construct named World Class Sustainable Supply

Chain Management (WCSSCM). He described the sustainability concept in six dimensions, including operational assessment as one of them. This enriches operational decision-making in the sustainability of the organization. Likewise, Kiel et al. (2017) proposed three additional dimensions: technical integration, data, and information along with TBL to resolve the gap regarding lack of integration. Similarly, multiple studies suggested to include Operational practices for effectiveness and better results of sustainability performance (Li et al., 2025; Tseng et al., 2020). Proposed solutions for the identified gaps are explained in Table 4. A more detailed explanation of the resolutions for each gap are given in the subsequent paragraphs.

5.1 Contextual Factor

To resolve the TBL gap regarding lack of contextual factor, previous studied explored the importance and way to add contextual factor. Previous studies proposed Quadruple Bottom Line (QBL) concept to extend 3P to 4P concept by inclusion of "Purpose" as fourth pillar. i.e Purpose, Planet, People, and Profit. QBL, basically, encourages organizations to link their strategic plans to the cause of actions to achieve their long-term goals (Schneider, 2015). It also adds an internal moral compass that informs decision-making over and above compliance with laws, focusing on values-led management and purpose-led performance (Dyllick & Muff, 2016; Visser, 2019). Inayatullah (2005) and Hamidi et al. (2025) link "purpose" to spiritual values, whereas Rhama (2023) emphasizes culture as an essential contextual factor. Adding purpose as a contextual factor lays a motivational ground for sustainability practices. It creates a feeling of responsibility that can trigger the implementation of TBL principles at the organizational and societal levels. The purpose is to re-engineer TBL from a compliance-based framework to a value-driven way of thinking and reorient organizational goals toward wider human and environmental causes.

Nawaz et al. (2016) added to this discussion by presenting a "Sustainability Wheel", a theoretical model of four overlapping triangles, one for each TBL dimension, with an additional culture element as described in Figure 5. These triangles point inwards, reflecting support for one another as dimensions to create ongoing improvement. Around the model lies a ring indicating time, reinforcing the importance of long-term, ongoing commitment and the dynamic aspect of contextual drivers. Paneels (2023) also criticized the TBL concept and proposed a resolution in 5P perspective called Quintuple Bottom Line. This extended framework includes five dimensions Purpose, Planet, People, Profit, and Place. "Place" is the local context, insisting organizations to consider geographical, regional, and cultural aspects in sustainability approach. He elaborated that organizations should include environmental, social, and local values in fundamental decision-making to achieve sustainable fiscal results. Moreover, adding the 5th P, i.e., place, enables organizations to include spatial justice and local equity, which was previously neglected in global sustainability (Brennan & O'Connor, 2020). Place-based and geographical differences consideration make this sustainability model more responsive and actionable (Foster et al., 2016). It also incorporates systems thinking, because it considers a strong linkage of the sustainable development with community resilience, local ecosystems, and participatory governance

(Meadow, 2008; Folke et al., 2010). Hence, the contextual factors' adoption enhances the performance of the TBL concept by integration of suitable drivers along with site-specific applicability. Such additions allow for a more comprehensive and practical approach to sustainability. On the other hand, the increased trend of adding extensions to the TBL concept may result in a complex concept that cannot be implemented. Therefore, there is a need to redefine the idea of covering contextual factors to implement these in the organization.

5.2 Measurement Gap

As the problem related to the lack of measuring the three pillars of the TBL, previous studies suggested enhancing it as a sustainability framework. Seuring and Müller (2008) argued that employing the sustainability concept can help to overcome limitations in TBL's measurement. Nonetheless, even with these developments, there remains an urgent need for more research to develop standardized and widely used metrics. Elkington (1998) also addressed this issue and suggested that each pillar should be given equal weightage. However, in reality, each pillar could not take equal weightage (Zaharia & Zaharia, 2021). Elkington also asserted that environmental performance is taking on an increasingly important role among business organizations, for which it must receive more attention and improved measurements. Elkington subsequently called for a "recall" of TBL as an idea, compelling a reassessment of its significance and application in the context of value creation. The concept of value creation presents a possible avenue for bridging the measurement gap. By considering how organizations create value not only financially, socially and environmentally, scholars and practitioners can start to measure the contribution of each stakeholder to sustainability results. This approach will help to investigate the contribution of each stakeholder across the three pillars and encourage transparency and accountability in stakeholder involvement through TBL adoption. More studies are required to investigate integrated tools and frameworks that can support measuring the multi-dimensional and dynamic nature of sustainability performance.

5.3 Integration Gap

One of the most common gaps identified in previous literature is the lack of integration of all three bottom lines, including environmental, social and economic (Cahyadi et al., 2022; Kiel et al., 2017; Bhatti et al., 2019; Sridhar & Jones, 2013; Zaharia & Zaharia, 2021). Due to the separate nature of these bottom lines (quantitative and qualitative), these bottom lines are treated separately. It may result in reduced effectiveness of the framework in achieving sustainability goals comprehensively. Previous studies proposed multiple solutions for the TBL integration. Nawaz et al. (2016) proposed the Sustainability Wheel as described in Figure 5. The model contains four triangles in the center connected, indicating that all dimensions are interconnected. This model advocates that each dimension is connected and dependent on the others, and necessitates collaboration with others to gain sustainability over time. Recently, Machado et al. (2024) proposed PPT model containing three dimensions: People, Process, and Technology. This

model explores how employees (People) are interconnected with each other with the help of technology to optimize the organizational processes. This approach enriches integration between TBL pillars by focusing on integration of human capital, digital capabilities, and business procedures.

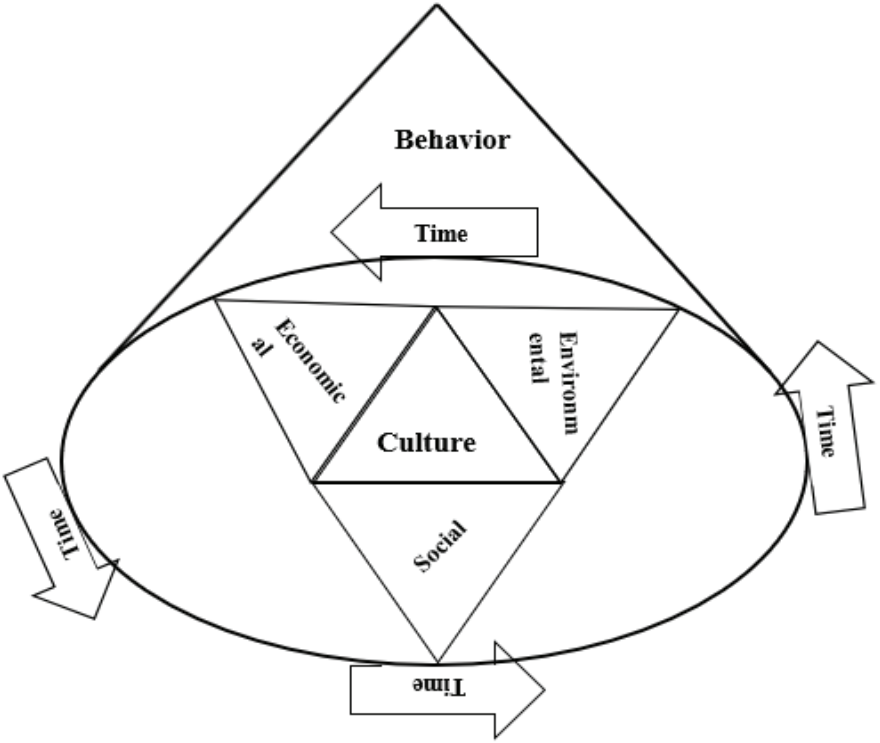

Figure 5: Sustainability Wheel (Source Nawaz et al., 2016)

5.4 Operational Performance Induction

Without focusing on organizational operations, the TBL concept cannot be implemented successfully to improve the sustainability of the organization (Bhatti et al., 2019; Nawaz et al., 2016). Organizational operations perform as a backbone for processing sustainability from strategies to final results. Therefore, incorporating day-to-day operations with TBL principles is crucial for achieving long-term sustainability objectives. Nawaz et al. (2016) argued that organizations should focus on their operations to achieve economic, environmental and social goals. World Class Sustainable Supply Chain Management (WCSSCM) is another solution as postulated by Dubey et al. (2017). WCSSCM is composed of six dimensions, including operational performance along with the other three pillars of TBL. This construct emphasizes to incorporate the operational performance with other dimensions for integrating sustainability principles into

the supply chain. This will result in enhanced efficiency, value creation, and resilience. Similarly, Li et al. (2025) extended the sustainability concept by adding operational performance as a fourth dimension along with economic, environmental, and social performance. Thus, adding operational performance provides a more practical and action-oriented expansion of the TBL model. It guarantees that sustainability is not just a high-level strategy but is actively incorporated into the firm's day-to-day operations, rendering implementation measurable and effective.

5.5 Ranking Stakeholders Based on Value Creation

Since TBL does not rank the relative weight or contribution of each pillar (Zaharia & Zaharia, 2021) and also that practically, it is difficult to measure or sustain such the balance between each pillar, Elkington himself suggested a "recall" of the TBL framework, and that it should be re-visited in the context of value creation. Not only does this approach assist with the measurement gap, but it also provides the opportunity to assess the contribution of specific stakeholders towards organizational sustainability. By examining the value each stakeholder contributes economically, socially, or environmentally, organizations can more effectively measure their contributions towards pursuing sustainability objectives. Value creation provides a model of ranking stakeholders based on their tangible and intangible inputs. As environment-friendly and sustainable operations are driven by the cooperation of multiple stakeholders, employees, suppliers, customers, shareholders, and community partners, it is imperative to comprehend and quantify each side's contribution. In this way, a value creation approach enables organizations to realign TBL implementation and gain a more defined, organized sense of stakeholder roles and their relative significance in driving sustainable performance.

5.6 Barrier of Regulatory Measures Implementation

The environmental bottom line is increasingly considered a competitive and strategic priority for contemporary organizations (Elkington, 1998). However, even with this growing recognition, the successful implementation of environmental and social sustainability practices remains undermined by weak regulatory measures. In order to address this issue, governmental regulatory bodies are required to introduce and implement more robust regulatory frameworks to ensure sustainability practices. Regulatory bodies should craft such policies that not only have compliance and but also contain rewards for good behavior. These rewards may include certifications, recognitions, public awards, incentives in tax for good sustainability performance along with penalties including fines, bans, charges, reputational damage for non-compliance. Hence, a strong regulatory framework is necessary for implementation of sustainability practices for long time.

5.7 Development of Overlapping Dimensions of the TBL

Recent studies have advocated for the introduction of overlapping dimensions within the TBL framework to better capture the interconnectedness among its fundamental components (Panneels, 2023; Tseng et al., 2020; Wu et al., 2024). These dimensions, including eco-efficiency, socio-environmental, and socio-economic, are more realistic and holistic in addressing sustainability issues. As compared to the previous concept of three separate dimensions, the overlapping dimensions concept postulates that sustainability challenges and solutions are at the nexus of two or more dimensions. For instance, eco-efficiency integrates environmental and economic performance by focusing on cost reduction, resource optimization through environmentally friendly practices. Similarly, the socio-environmental dimension investigates how environmental efforts affect communities, societal equity, and public health. So that environmental benefits can be achieved along with social benefits. Whereas, the socio-economic dimension is related to the economic policies, practices, and performance, which is also related to the social welfare.

These hybrid dimensions equipped organizations to achieve co-benefits, where activities in one field also positively impact the other dimension. This method aligns two or more dimensions to enhance sustainability performance and make it a more practical and effective part of business operations. Organizations can operationalize these overlapping dimensions by adopting integrated sustainability reporting frameworks (GRI or SASB) that map indicators across multiple pillars (Eccles & Krzus, 2018; Khan et al., 2016). Community-inclusive environmental impact assessments can support addressing socio-environmental concerns (Esteves et al., 2012; Hariram et al., 2023;). Whereas socio-economic goals can be achieved by focusing on hiring policies, local sourcing, or social investment programs (Aina et al., 2022; Porter & Kramer, 2011; Aguinis & Glavas, 2012). Cross-functional teams and stakeholder dialogues can help to embed these practices in the operations and decision-making processes (Freeman et al., 2010; Waddock & McIntosh, 2011). These practical approaches help translate conceptual interconnections into measurable and actionable strategies, making sustainability frameworks more effective and grounded.

Table 4
Tabulated Summary of Gaps and Suggested Scholarly Improvements in TBL Framework

S #	Critiques	Resolution	Reference
1	**Contextual Factor**	• Models with extensions have been suggested to extend the conventional TBL model. A notable example is the Quadruple Bottom Line (QBL), which adds a fourth 'P', i.e., Purpose over Planet, People, and Profit. Inayatullah (2005) explained this fourth P as spirituality, whereas Rhama (2023) defined it as culture. These 4Ps (Purpose, Planet, People, and Profit) help organizations seek profit alongside social, environmental, and purpose-based business values. • Drawing on this, Panneels (2023) added a fifth P—Place, meaning geographic location. His Quintuple Bottom Line approach (Purpose, Planet, People, Profit, and Place) urges companies to create strategies beyond financial success, incorporating local, environmental, and moral concerns into the business model.	(Inayatullah, 2005; Panneels, 2023; Purvis et al., 2019; Rhama, 2023)
2	**Difficult to Measure**	Previous studies have argued that a comprehensive approach is required to measure TBL's qualitative and quantitative dimensions. Elkington (2018) advised shifting toward the value creation perspective for better results.	(Elkington, 2018; Kiel et al., 2017; Sridhar, 2011)
3	**Lack of Integration**	• Previous literature extended the TBL (3P) concept by employing PPT (Machado et al., 2024), consisting of people, processes, and technology. This means that these three interdependent elements enable organizations to develop integrated processes. • Kiel et al. (2017) addressed this gap by introducing three additional elements, i.e. Information Technical Integration and Data concerning public context and data security.	(Machado et al., 2024; Kiel et al., 2017)

Table to be continued...

S #	Critiques	Resolution	Reference
4	**Ranking Different Stakeholders**	By examining the value each stakeholder contributes economically, socially, or environmentally, organizations can more effectively measure their contributions towards pursuing sustainability objectives. Value creation provides a model of ranking stakeholders based on their tangible and intangible inputs. As environment-friendly and sustainable operations are driven by the cooperation of multiple stakeholders, employees, suppliers, customers, shareholders, and community partners, it is imperative to comprehend and quantify each side's contribution.	(Elington, 2018; Sridhar, 2011)
5	**Lack of Operational Performance**	• Nawaz et al. (2016) introduced the continuous improvement wheel (Sustainability Wheel) to enhance operations. • World Class Sustainable Supply Chain Management (WCSSCM), as proposed by Dubey et al. (2017), which has operational performance as a fourth dimension, social values and ethics, environmental performance, and economic stability. • Tseng et al. (2020) recommended implementing operational practices to improve sustainability performance. • Li et al. (2025) extended the sustainability concept by adding operational performance.	(Li et al., 2025; (Dubey et al., 2017; Nawaz et al., 2016; Tseng et al., 2020)
6	**Overlapping Dimensions**	Previous literature advocates considering overlapping dimensions, i.e., socio-environmental and socio-economic, to achieve better results than individual elements of TBL.	(Tseng et al., 2020; Wu et al., 2018)
7	**Barrier to Regulatory Measures Implementation**	In order to break this barrier, governments need to create and implement more robust regulatory frameworks that facilitate sustainability efforts. Regulatory agencies are instrumental in doing so by crafting policies that not only require compliance but also reward good behavior. Such rewards can be in the form of tax incentives, certifications, or public awards for sustainability performance, as well as penalties such as fines, bans, or reputational damage for non-compliance	(Elkington, 1998)

6. Discussions

This paper critically examines the TBL concept, specifically its conceptual weaknesses and implementation difficulties. Evidence for the review was drawn from the Scopus database, chosen for its credibility, validity, and high-impact academic material. The primary aim was to find and consolidate the gaps in the literature concerning the TBL concept. First propounded by

Elkington as a 3P model (viz. People, Planet, and Profit), the TBL became a widely accepted framework in the organizational management context. Nevertheless, the framework was progressively considered inadequate with continuous technological developments, organizational practices, and increasing stakeholder demands. Consequently, several critiques surfaced, doubting the TBL's applicability and adequacy in addressing today's performance sustainability issues.

This research thus critically reviewed 36 journal articles, wherein seven broad critiques on the TBL approach were found (as outlined in Table 3). Importantly, this work is the first to comprehensively evaluate and summarize the entire collection of up-to-date gaps from the extant literature. Although some gaps have been partially addressed in recent studies, most are still unexplored. Accordingly, summarized in Table 4 are some proposed solutions and conceptual extensions suggested by some extant studies, such as the Quadruple and Quintuple Bottom Line models. One of the primary drivers behind this research was the gap between the adoption and real implementation of TBL. Elkington (2018) admitted that TBL is frequently deployed as a mere marketing catchphrase rather than a revolutionary business ethos. He thus invited a "recall" of the idea to reassess its relevance and consider making it more influential, practicable, and effective.

7. Limitations and Future Recommendations

While this study comprehensively concludes the gaps in the TBL concept, it has some limitations. First, as the data were collected only from the Scopus database due to its reliability, future studies should include other databases to ensure broader and more diverse literature coverage. Secondly, the gaps discussed in previous literature are identified in a single paper. Some of the gaps have already been addressed in previous studies. For instance, the concept of people, process, and technology (PPT) addressed the lack of integration in TBL. Although the PPT concept addressed this issue, more research is still required to test PPT quantitatively and advance the concept. Third, there could have been potential bias in article selection, especially at the subjective stage of assessing relevance and quality, even though the review proceeded systematically. Lastly, new studies should address any untapped gaps governing the TBL concept. Although Elkington suggested recalling this concept from a value creation perspective, limited studies have been conducted on it. A vast field is available to research the TBL concept and propose solutions for improving sustainability, e.g., future studies may create indicators for operationalizing overlapping dimensions.

8. Conclusion

The objective of this research was to identify, evaluate and critically examine the key factors that hamper the effectiveness of the current TBL framework and its subsequent implementation in the business firms. This research thus offers concrete recommendations for the contemporary firms in terms of how they can more meaningfully align their firm performance goals with the long-term strategy of creating value for the key organizational stakeholders. Theoretically

speaking, this study contributes to extant literature by identifying the gaps in and suggesting some scholarly recommendations to address the criticisms on the current TBL framework, thus guiding them to develop more holistic and actionable performance-driving research frameworks. Practically speaking, by considering the suggested recommendations, the managers can critically review and accordingly improve their existing value-creation and measurement mechanisms for the key organizational stakeholders. This renewed value-creation approach would additionally assist the managers in equitably rewarding the organizational members, thereby motivating them to more purposefully achieve the renewed TBL performance benchmarks.

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