



# Sustainability in Coffee Shops: A Triple-Layered Business Model Canvas Approach

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## Abstract

This study examines how coffee shops in Bandung implement the Triple Layered Business Model Canvas (TLBMC) to balance profitability with ecological stewardship and social responsibility. Its primary aim is to simultaneously highlight the core factors enabling such establishments to thrive within economic, environmental, and social dimensions. Employing a qualitative method, the research collects data from interviews and detailed on-site observations. The findings indicate that revenue diversification and efficient resource management result in economic benefits, while environmentally conscious initiatives such as local sourcing, composting practices, and reusable packaging reduce costs and enhance public image. Social engagement through staff development programs, community events, and transparent supply chain practices fosters greater customer loyalty and a positive brand reputation. The synergy among these three layers demonstrates the potential of the TLBMC framework to support holistic value creation, even for small-scale enterprises with limited resources. In conclusion, the study provides practical evidence that adopting a TLBMC-centered strategy can yield multiple tangible and intangible gains, thereby encouraging broader sustainability transformations in local coffee shop contexts. These findings underscore the value of integrating economic, environmental, and social considerations as a cohesive framework for fostering long-term business resilience and community well-being. However, this study is limited to coffee shops within a single urban context, which may reduce the generalizability of the findings. Future research could expand the geographical scope or employ longitudinal designs to strengthen the study's broader applicability.

**Keywords:** *Triple Layered Business Model Canvas, Sustainability, Coffee Shops, Business Resilience*

## INTRODUCTION

The global Food and Beverage (F&B) industry faces increasing challenges related to sustainability, driven by consumer awareness, environmental regulations, and evolving market pressures. Coffee shops, in particular, are at the forefront of these challenges because they rely on natural resources, global supply chains, and the need to maintain social responsibility toward stakeholders.

In Bandung alone, according to data from Dinas Pariwisata Kota Bandung, there were over 1,200 coffee shops in 2024, reflecting an annual growth rate of around 10%. This rapid expansion underscores the magnitude and urgency of implementing sustainable practices in the local coffee shop sector. Additionally, the hospitality industry is one of the world's largest and fastest-growing sectors (Alfandi et al., 2023), while entrepreneurship is experiencing significant and dynamic development (Bagis et al., 2024).

Over the past decade, researchers and practitioners have begun to explore more comprehensive business frameworks that integrate not only economic but also environmental and social dimensions of sustainability (Joyce & Paquin, 2016). These dimensions have gained traction as growing evidence shows that businesses adapt to societal and ecological constraints by

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balancing multiple forms of value creation (Pardalis et al., 2020). A more holistic approach to business modeling is particularly significant for coffee shops, given the complex interplay between local retail operations and global agricultural production networks. Recent studies emphasize that multi-layered sustainability strategies in coffee-centric businesses can support enhanced stakeholder engagement, improved resource efficiency, and a stronger market reputation (Hernández Aguilera et al., 2018).

Simultaneously, the emphasis on sustainability within the coffee sector aligns with shifting consumer demand for ethically sourced and ecologically friendly products (Belyaeva et al., 2020). Many small to medium-sized enterprises (SMEs) in both developed and emerging markets are looking beyond profit alone to incorporate practices that promote social welfare and reduce environmental impact (Mili & Loukil, 2023). These businesses often face difficulties related to resource limitations, data inadequacies, and operational complexities, particularly when attempting to adopt integrated frameworks that cover a wide spectrum of sustainability factors (Hutchinson et al., 2012). Nonetheless, the success stories of certain F&B companies illustrate that structured approaches can effectively manage transitioning toward a more sustainability-oriented model. In this light, the Triple Layer Business Model Canvas (TLBMC) has emerged as a promising template for capturing, articulating, and implementing sustainability strategies in a single coherent framework (Joyce & Paquin, 2016; López Nicolás et al., 2021; López Nicolás et al., 2021).

Despite this growing interest, coffee shops encounter specific barriers that make their sustainability journey challenging. One primary concern involves ensuring a reliable supply of ethically grown coffee beans while keeping production costs manageable despite commodity price volatility (Samper & Quiñones Ruiz, 2017). Moreover, smallholder farmers, who produce a large portion of the world's coffee supply, often lack access to advanced cultivation techniques, financial credit, and stable market linkages (Van Meter et al., 2023). Such conditions not only threaten farmers' livelihoods but also amplify environmental degradation, especially if unsustainable farming practices are adopted (Ngure & Watanabe, 2024). Consequently, coffee shops that depend on these farmers must navigate complex supply chain relationships and develop robust strategies for addressing environmental and social constraints from the "seed to cup" perspective.

While prior studies have explored the theoretical potential of TLBMC, empirical evidence demonstrating its application in small-scale coffee shops, particularly in developing country contexts, is still lacking. Moreover, the existing literature often lacks specific indicators to measure the success of sustainability implementation, such as metrics for waste reduction, energy use, fair labor practices, and community engagement. These gaps hinder the evaluation of the real-world impact of TLBMC-driven strategies, limiting their scalability and policy relevance. A deeper understanding of what constitutes measurable success in sustainability for microenterprises remains underdeveloped.

A recognized path to overcoming these challenges is implementing multifaceted solutions that combine process innovation, stakeholder collaboration, and capacity building (Hutchinson et al., 2012). Generally, solutions revolve around developing stronger partnerships with local suppliers, adopting fair trade or certified organic sourcing, and offering transparency in production and distribution processes. However, these measures, while beneficial, can be fragmented if they are not organized within a cohesive framework (Pardalis et al., 2020). The TLBMC serves as a general solution by integrating economic, environmental, and social perspectives in a single template, thereby allowing businesses to more systematically track multiple forms of value creation and potential trade-offs (Joyce & Paquin, 2016). This structured perspective can direct coffee shops to plan for sustainable packaging, reduce waste, support local communities, and maintain competitive product offerings, all while embedding ethical and ecological considerations into core business activities (López Nicolás et al., 2021).

Given these considerations, this study seeks to answer the following research questions: (1) How do independent coffee shops in Bandung implement the Triple Layered Business Model Canvas across economic, environmental, and social dimensions? (2) What are the key challenges and opportunities faced by small-scale coffee shops in operationalizing sustainability within the TLBMC framework? (3) What indicators or practices can serve as effective measures of sustainability success in such settings?

The study investigated how independent coffee shops in emerging markets adopt the TLBMC framework to enhance their sustainability performance while maintaining economic viability. Novelty arises from a multifaceted approach that incorporates actual operational data, stakeholder input, and local market conditions, thus bridging a gap in existing literature that often focuses on broader or more generic F&B contexts (Pardalis et al., 2020). This research provides insights into the practicalities of implementing a triple-layered sustainability framework in coffee shops by identifying actionable steps and context-specific strategies within each TLBMC layer. The scope of this study is intentionally focused on small- to medium-sized coffee outlets, given their prevalence in many urban areas and their potential to serve as catalysts for sustainable development at the community level. This investigation endeavors to support coffee entrepreneurs, policymakers, and academics who seek effective methods of aligning economic, environmental, and social objectives in a dynamic and competitive marketplace.

In the specific realm of coffee shops, previous literature underscores practical techniques that address these challenges. For instance, many studies highlight the importance of waste management strategies, such as composting coffee grounds and employing reusable or biodegradable materials, to reduce environmental impact (Mili & Loukil, 2023). Other research has pointed to consumer-facing strategies, like implementing loyalty programs that reward environmentally conscious behaviors and hosting public workshops to educate customers about sustainable practices in coffee cultivation (Van Meter et al., 2023). On the supplier side, documented solutions include the establishment of long-term contracts with smallholder farmers to stabilize prices and encourage sustainable farming methods (Hernandez Aguilera et al., 2018). Coffee shops can help improve farmers' livelihoods and strengthen the local economy by forging closer relationships with producers while also ensuring the consistency and quality of coffee beans sourced.

Additionally, scholars exploring the TLBMC within various F&B contexts have illuminated specific success factors that are directly transferable to coffee shops (Belyaeva et al., 2020; Pardalis et al., 2020). These include adopting cross-functional teams tasked with periodically reviewing sustainability metrics, implementing digital tracking systems for environmental and social indicators, and creating flexible business processes that can adapt to emerging standards or certifications. Studies also demonstrate how coffee shops can leverage social impact strategies by collaborating with non-governmental organizations (NGOs) focused on rural development, thereby fostering community empowerment and raising consumer awareness about responsible sourcing (Van Meter et al., 2023). Taken together, these findings suggest that structured methodologies, such as TLBMC, can systematically align economic imperatives with broader social and environmental goals in a manner suitable for coffee-centric enterprises.

Nonetheless, a significant research gap persists regarding the practical adaptation of TLBMC in independent or small-scale coffee shops, where financial and human resources may be more limited. While large corporations can afford sophisticated sustainability initiatives, smaller coffee shops may struggle to gather the necessary data to populate all three TLBMC layers (Hutchinson et al., 2012). Moreover, the existing academic literature highlights uneven emphasis across dimensions: some studies focus extensively on the environmental component, while others prioritize social or economic aspects (Joyce & Paquin, 2016; Mili & Loukil, 2023). Thus, a more

holistic analysis is needed that addresses how coffee shops can harmonize every layer of TLBMC without sacrificing operational feasibility. Concurrently, evidence regarding the best practices for measuring the specific impact of TLBMC adoption in real-world scenarios remains fragmented, including metrics that capture improvements in waste reduction, carbon footprint, and fair labor practices in coffee supply chains (Ngure & Watanabe, 2024).

With these considerations in mind, the present study investigates how independent coffee shops in emerging markets can adopt the TLBMC to enhance their overall sustainability profile. Novelty arises from a multifaceted approach that incorporates actual operational data, stakeholder input, and local market conditions, thus bridging a gap in existing literature that often focuses on broader or more generic F&B contexts (Pardalis et al., 2020). By identifying actionable steps and context-specific strategies within each TLBMC layer, this research provides insights into the practicalities of implementing a triple-layered sustainability framework in coffee shops. The scope of this study is intentionally focused on small- to medium-sized coffee outlets, given their prevalence in many urban areas and their potential to serve as catalysts for sustainable development at the community level. This investigation endeavors to support coffee entrepreneurs, policymakers, and academics who seek effective methods of aligning economic, environmental, and social objectives in a dynamic and competitive marketplace.

## LITERATURE REVIEW

Numerous scholars have explored how the Triple Layered Business Model Canvas (TLBMC) can foster sustainability by integrating economic, environmental, and social dimensions. This section critically synthesizes the empirical evidence supporting the effectiveness of TLBMC in various industries, with particular attention to its potential relevance for the Food and Beverage (F&B) sector. Additionally, a comparative discussion of frameworks that share overlapping goals with TLBMC clarifies how TLBMC's layered structure can address particular gaps in existing models. Nevertheless, while many studies highlight TLBMC's adaptability and clarity, some critics question whether its separation of layers might oversimplify or silo complex trade-offs between the three dimensions. Thus, further scrutiny is needed to determine whether TLBMC can offer a truly integrated lens that captures the interplay among economic viability, environmental stewardship, and social responsibility.

A growing body of work has demonstrated the positive synergy between advanced manufacturing technologies and sustainability in the realm of economic performance. For example, Sahoo and Upadhyay (2024) reported that the integration of Industry 4.0 and Lean Six Sigma practices within supply chain management led to improvements in the triple bottom line (TBL) performance, particularly by reducing operational costs and enhancing resource efficiency. Similarly, Bortolotti et al. (2023) found that applying Industry 4.0 tools in tandem with Lean methodologies can reduce waste and streamline processes, thereby improving economic outcomes. Beyond direct cost efficiency, research by Solovida and Latan (2021) indicated that environmental management accounting (EMA) plays a mediating role in connecting sustainability investments with better economic performance because it provides granular data that enables companies to measure cost savings tied to environmental initiatives. Although these examples originate from sectors such as manufacturing and logistics, the principle of harnessing technology and data to bolster profitability and sustainability goals can be readily extended to F&B industries, including coffee shops with potentially limited operational capacity. However, it is crucial to note that effective economic performance does not occur in a vacuum. Performance management, as emphasized by Arifin et al. (2023), is an ongoing process that involves identifying, monitoring, and developing the effectiveness of individuals and teams in organizations. This underscores the importance of robust systems for tracking and evaluating how economic gains intersect with

broader sustainability targets, a challenge that TLBMC is designed to address more holistically than traditional single bottom line frameworks.

Parallel to these economic benefits, environmental performance features strongly in much of the TLBMC literature. Recent studies have underscored the role of the circular economy principles in catalyzing eco-efficiency. [Tamak et al. \(2024\)](#) documented how circular design, refurbishment, and recycling can significantly reduce resource use, lowering the carbon footprint across diverse manufacturing processes. Such insights resonate with F&B settings, where packaging material, energy consumption, and waste disposal often have high environmental impacts. [Gimenez et al. \(2012\)](#) underscore how internal environmental programs improve all three TBL dimensions—particularly the environmental dimension, by fostering employee engagement in emissions reduction and waste management. Moreover, [Waheed et al. \(2022\)](#) highlight how Industry 5.0 technologies can moderate shared economy practices to mitigate negative ecological impacts in business operations. Although these explorations do not exclusively target coffee shops, the notion of “closing the loop” (e.g., using coffee grounds for compost) aligns with TLBMC’s environmental layer, emphasizing how innovative practices can reduce ecological harm while offering new economic opportunities. At the same time, critics argue that some environmental metrics remain underreported or inconsistently applied in small enterprises, raising concerns about data integrity ([Solovida & Latan, 2021](#)). Hence, while the TLBMC outlines clear environmental objectives, the actual implementation may require more rigorous performance tracking systems to fully capture the complexities of ecological sustainability.

The social dimension of the TLBMC has similarly received robust support. Research examining social initiatives finds that businesses implementing fair labor conditions, community-based projects, and participatory governance often experience significant improvements in their reputations and overall stakeholder satisfaction ([Gimenez et al., 2012](#)). According to [Lee et al. \(2024\)](#), Environmental, Social, and Governance (ESG) strategies mediate the links between institutional pressures, digitalization capability, and TBL performance, further suggesting that social investments are not merely philanthropic but can be deeply integrated into operational models. In agriculture-specific contexts social enablers, including farmer training programs and community development initiatives, directly lead to better economic and environmental performance. This finding highlights the importance of local stakeholder engagement, an especially pertinent issue in the global coffee supply chain, where smallholders often lack adequate market information, financing, or technological support. Nonetheless, one potential limitation is that quantifying social outcomes is notoriously difficult, particularly for smaller businesses. While TLBMC flags social responsibility as a distinct pillar, coffee shops may struggle to track or measure the direct impacts of their social initiatives without formal structures or clear key performance indicators (KPIs), echoing the concerns raised by [Arifin et al. \(2023\)](#) regarding ongoing performance monitoring.

A recurring theme across these empirical studies is that integrated approaches produce more pronounced TBL benefits than siloed ones. [Wu et al. \(2015\)](#) demonstrated that combining lean, green, and social responsibility programs yields synergistic effects on sustainability metrics, particularly in high market volatility contexts, such as the fashion supply chain. The parallel in coffee shops is clear: uncertain commodity prices, consumer demand for authenticity, and evolving regulatory environments necessitate robust frameworks that link efficiency, circular economy principles, and community well-being. An integrated methodology incorporating Life Cycle Analysis with TBL metrics, aiding in planning and evaluating sustainability efforts. By systematically accounting for direct and indirect impacts, businesses can proactively address each TLBMC layer ([Joyce & Paquin, 2016](#)). Critically, these integrated strategies align well with TLBMC’s structure, which segregates economic, environmental, and social aspects for clear articulation and



encourages cross-layer coherence (Mili & Loukil, 2023).

Notwithstanding the robust endorsement of TLBMC, several alternative or complementary frameworks have emerged, each addressing sustainability in distinct ways. Scholars have compared TLBMC to Sustainable Business Models (SBM), Circular Business Models (CBM), Green Business Models (GBM), and other conceptual tools (Torgersen et al., 2022; Lamolinara et al., 2023). While SBMs also emphasize economic, environmental, and social balance, the TLBMC uniquely structures these elements into separate but interlocking layers, offering a more precise mechanism to evaluate interdependencies (Mili & Loukil, 2023). CBMs foreground resource loops and often delve more deeply into specific logistics of material reuse, for instance, some coffee chains have experimented with returning used grounds to local farms, yet they might overlook social justice or community development issues if not explicitly integrated (Lamolinara et al., 2023). Green Business Models (GBM), on the other hand, focus primarily on eco-friendly measures and may not address social complexities, such as fair wages or community relations (Torgersen et al., 2022). Thus, TLBMC's advantage lies in its capacity to comprehensively integrate social dimensions alongside circular or green strategies.

Further distinctions arise when comparing TLBMC to the Framework for Strategic Sustainable Development (FSSD) and the Value Triangle Framework. FSSD emphasizes strategic planning tools, which can be combined with the original Business Model Canvas to improve goal setting and stakeholder alignment (França et al., 2017). However, it generally lacks explicit tripartite segmentation of TLBMC, potentially obscuring the unique nuances of social or environmental innovations in certain industries (Pardalis et al., 2020). The Value Triangle Framework, proposed by Biloslavo et al. (2018), integrates society, the natural environment, and future generations into a co-created value paradigm. Although forward-looking, it may not offer the structured layering of TLBMC, which enables businesses to systematically address current-day challenges across each sustainability pillar. Equally, the System of Systems (SoS) perspective on Business Models for Sustainability (BMfS) extends beyond individual firms to examine interconnected stakeholders and industries (Dormeier et al. 2024). This holistic vantage might prove pivotal for large-scale transformations, but can be less practical for smaller enterprises that require a more direct, firm-level tool like TLBMC (Joyce & Paquin, 2016).

By comparing and contrasting TLBMC with these alternative approaches, it becomes clear that context specificity often dictates framework choice. Large multinational corporations or multi-industry alliances may benefit from SoS or FSSD approaches due to their expansive reach and need for macro-level strategies (França et al., 2017). Conversely, SMEs or smaller coffee shops, which require an itemized and manageable structure for implementing incremental sustainability steps, may find TLBMC's layered approach to be an ideal fit (Pardalis et al., 2020). TLBMC's intentional separation of economic, environmental, and social layers can guide these smaller entities in systematically mapping out revenue streams, waste management processes, and stakeholder engagement activities in ways that are both sequentially transparent and strategically aligned (Joyce & Paquin, 2016).

Overall, the literature suggests that the TLBMC framework holds strong promise for improving corporate performance on all facets of the triple bottom line, supported by empirical findings in multiple industries. The synergy of advanced technological integration, like Industry 4.0, combined with responsible waste management practices, robust social initiatives, and stakeholder collaboration, is particularly effective. Moreover, the TLBMC's capacity to dovetail with other conceptual models, circular or green business principles, while maintaining a clear triple layer separation, offers adaptability for a range of business sizes and sectors. Within the F&B industry, TLBMC could help businesses navigate the complexities of sustainable sourcing, production, and distribution, ultimately strengthening financial stability and stakeholder relations (Mili & Loukil,

2023; Sahoo & Upadhyay, 2024). However, scholars also recognize the significance of data integrity and organizational readiness: if a company cannot capture reliable metrics for social or environmental performance, the full potential of TLBMC may remain unrealized (Solovida & Latan, 2021).

In summary, the literature underlines TLBMC's robust theoretical and empirical foundation for driving improvements in economic, environmental, and social outcomes. The evidence spans manufacturing, agriculture, energy, and service industries, implying broad applicability and success when TLBMC is tailored to meet context-specific needs. Compared with other frameworks, TLBMC's layered structure offers clarity and completeness, which is particularly beneficial for smaller enterprises seeking a systematic yet flexible road map toward sustainability. This supports the notion that TLBMC can effectively guide coffee shops and related businesses through the multifarious processes of adopting more sustainable business models with proper resource allocation and stakeholder collaboration.

## RESEARCH METHOD

This study employed an exclusively qualitative approach to examine how independent coffee shops implement and evaluate the Triple Layered Business Model Canvas (TLBMC). Although some prior research combines quantitative methods, such as surveys and exploratory factor analysis, to measure sustainability outcomes in small businesses (Michelle Lee et al., 2018), the present study contends that a qualitative design alone provides sufficient depth and rigor for understanding the complex, context-specific processes underlying TLBMC adoption. By focusing on interviews, focus groups, case studies, and, where applicable, ethnography, this research captures the nuanced experiences, motivations, and operational realities of coffee shop owners and their stakeholders (Bressan & Pedrini, 2020; Addisie & Tebarek, 2023). Moreover, this study employed multiple validation strategies across each qualitative method to mitigate bias and ensure data credibility, including reflexivity, triangulation of sources, and transparent documentation of coding procedures.

In the initial phase, semi-structured interviews were conducted with a purposive sample of coffee shop owners, managers, baristas, and a small set of key suppliers. Participants were selected based on the following inclusion criteria: (1) the business had been operating for at least one year, (2) the shop had implemented at least one sustainability initiative (e.g., use of local ingredients, waste reduction, or community events), and (3) the location was within the urban boundaries of Bandung. Purposive sampling ensured the inclusion of informants with sufficient experience and relevance to the TLBMC framework. Drawing on recommendations by Bressan and Pedrini (2020), each interview began with open-ended questions about the participants' backgrounds and reasons for exploring the TLBMC. Further questions probed more specific topics: for instance, how owners perceive the TLBMC's economic layer in daily operations, what steps they have taken to reduce environmental impact, and how they manage social responsibilities such as fair labor conditions or local community engagement (Addisie & Tebarek, 2023). The majority of these interviews lasted between 30 and 60 minutes, were audio recorded with participant consent, and were later transcribed verbatim. In line with ethical guidelines, all respondents were informed about the research purpose, assured of confidentiality, and offered the opportunity to withdraw at any time. The research team practiced reflexivity by documenting personal assumptions in a reflexivity journal before and after each interview session to reduce interviewer bias. This helped maintain a critical awareness of how the viewpoints of the researchers might influence the interview dynamics.

Focus group discussions complemented the individual interviews to capture collective viewpoints and foster dynamic interaction. Each focus group comprised four to six participants,

often comprising coffee shop staff, local community members, and supplier representatives. The primary objective of this study was to observe how diverse stakeholders negotiate and prioritize different elements of TLBMC in practice, aligning with the approach used by [Addisie and Tebarek \(2023\)](#) when investigating the collaborative decision-making processes of small coffee producers. Moderators used a semi-structured guide with thematic prompts, such as “What hurdles do you face in implementing environmentally friendly measures in your cafe?” and “How do you perceive the social benefits of your coffee shop in this neighborhood?” The group setting enabled participants to respond to each other’s perspectives, thereby revealing underlying shared values or disagreements that individual interviews might have missed. These interactions frequently unearthed insights about resource constraints, supply chain bottlenecks, and the cultural significance of coffee consumption, all of which provide a nuanced view of TLBMC’s social layer.

Following these discussions, the research advanced into a case study phase involving detailed observations of practices in coffee shops. Two coffee shops were selected on the basis of their self-identification as adopters of sustainability-oriented practices aligned with TLBMC dimensions. Selection was also guided by the public communication of sustainability values (e.g., on social media or in-store signage), engagement in local sourcing or community programs, and operational transparency. These case studies provided a focused context for observing how sustainability was embedded in real-time operations. The researchers conducted direct observations of daily activities, paying particular attention to waste management procedures, staff–customer interactions, local sourcing habits, and community outreach programs. Consistent with [Carrigan et al. \(2024\)](#), secondary documents, such as marketing materials, website content, and basic financial summaries, were also gathered to understand how sustainability initiatives are communicated externally and integrated into strategic planning.

A netnographic component was incorporated where appropriate to ensure that consumer perspectives were not overlooked. This method addresses the importance of consumer perception in shaping the success and credibility of sustainability initiatives. Coffee shops often rely on brand image and customer loyalty, both of which are heavily influenced by how sustainability efforts are communicated and perceived in digital spaces. Netnography, as described by [De Luca and Pegan \(2014\)](#), entails examining digital platforms such as social media pages, online consumer reviews, and discussion forums to gain insights into how customers perceive a particular brand or product. In this study, publicly accessible social media posts and customer feedback on platforms such as Instagram and Google Reviews were examined for each selected coffee shop. Researchers systematically coded the content of these online conversations to identify themes related to sustainability, such as comments praising eco-friendly packaging or suggestions criticizing perceived greenwashing. In validating ethnographic data, the research team cross-checked user profiles, timestamp consistency, and repeated themes across multiple online platforms to ensure authenticity and minimize the risk of encountering spam or unreliable sources. This digital observation provided a valuable data triangulation by comparing consumer sentiment with managerial intentions and operational practices.

The principle of transparency was maintained throughout the data collection and analysis stages to facilitate reproducibility ([Carrigan et al., 2024](#)). A detailed research protocol outlined the interview guides, focus group prompts, observational checklists, and coding frameworks used in both offline and online contexts. Transcribed interviews and focus group discussions were initially coded using a thematic approach, wherein each transcript was analyzed line by line to identify recurring themes aligned with TLBMC elements: economic, environmental, and social ([Addisie & Tebarek, 2023](#)). Two independent coders reviewed each transcript, and discrepancies were resolved through discussion until a consensus was reached. In this manner, the inter-coder reliability was enhanced, thereby reducing the risk of subjective bias. Notably, while some scholars



employ software-assisted qualitative analysis tools for coding (Bressan & Pedrini, 2020), the current study used a manual approach to maintain closer interpretive contact with the data and accommodate the relatively small volume of transcripts.

Where relevant, the research design acknowledged that certain prior studies have opted for quantitative methods, such as surveys or exploratory factor analysis, to investigate consumer preferences or measure TLBMC outcomes systematically (Michelle Lee et al., 2018). However, this study deliberately chose a qualitative-only framework to capture rich, contextual insights that might be overlooked in numerical data. The assumption here was that sustainability integration within small coffee shops is a deeply contextual process shaped by personal motivations, localized supply chain configurations, and community-level interactions. As a result, a purely qualitative design was deemed sufficiently rigorous and, in many respects, better suited to uncovering the intricate social dynamics and subtleties of environmental stewardship. This decision aligns with previous research asserting that qualitative approaches often reveal unquantifiable dimensions of stakeholder relationships, particularly in small-scale, community-oriented businesses (Bressan & Pedrini, 2020; Addisie & Tebarek, 2023).

By focusing exclusively on qualitative methods, interviews, focus groups, case studies, and selective ethnography, this study presents a depth of understanding regarding how independent coffee shops conceptualize, implement, and adapt the TLBMC in daily operations. The triangulation of multiple data sources compensates for the lack of direct quantitative measurement, enabling an in-depth investigation of causal inferences around why and how sustainability thrives or falters at the microenterprise level. Such an approach is consistent with methodological precedents in small business sustainability research, demonstrating that qualitative inquiry not only captures the complexities of stakeholder experiences but also helps illuminate the pathways for future best practices (Sáenz Segura et al., 2023; Carrigan et al., 2024).

Overall, the reliance on a qualitative methodology ensures that this study remains closely attuned to the lived realities of coffee shop operators who endeavor to incorporate TLBMC principles. The resulting rich descriptions, grounded in stakeholder narratives and real-world observations, offer a nuanced portrait of sustainability in action, validating the efficacy of a qualitative design for exploring TLBMC implementation. Researchers and practitioners can apply this methodological blueprint to other small-scale enterprises, refining or adapting it as necessary to capture the evolving patterns of sustainability-oriented innovation within the broader Food and Beverage (F&B) industry.

## **FINDINGS AND DISCUSSION**

The findings and discussion in this section examine how coffee shops in Bandung implement the Triple Layered Business Model Canvas (TLBMC) across economic, environmental, and social dimensions. Following Joyce and Paquin (2016), this integrated framework provides a lens through which businesses can balance financial viability, ecological stewardship, and community well-being. Building on prior studies in the F&B sector (Mili & Loukil, 2023; Pardalis et al., 2020), the research reveals that TLBMC adoption yields a combination of tangible (financial) and intangible benefits. At the same time, it poses specific challenges related to organizational culture, consumer expectations, and resource management. Each of the following subsections, Economic Layer, Environmental Layer, and Social Layer, presents empirical observations from Bandung's coffee shops and situates them within broader scholarly discussions.

### **Economic Layer**

Coffee shops in Bandung typically begin by emphasizing economic viability through classic Business Model Canvas components such as value propositions, revenue streams, and customer

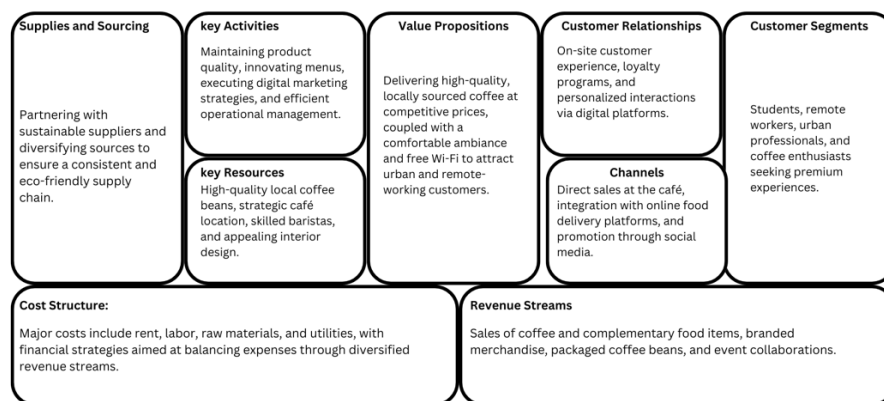
relationships (Joyce & Paquin, 2016). In many cases, owners cite consistent demand from students, professionals, and urban residents seeking both an affordable and aesthetically pleasing environment. These features align with prior observations of stable customer segments in small cafe contexts (Hurriyati et al., 2023). Notably, the TLBMC prompts deeper analysis beyond merely maximizing profit; it compels operators to consider how revenue diversification and innovative partnerships can reinforce long-term competitiveness.

*"We realized that simply selling coffee is not enough anymore. We started offering handmade local snacks and merchandise to create more value for our customers."* - Owner, cafe with local artisan collaborations.

*"Now, we collaborate with nearby pastry vendors and invite local musicians."* *"It brings in new people and strengthens our community ties."* - Community-based cafe owner

*"We want to go digital; however, managing an app or platform takes time and extra cost."* *We focus more on word-of-mouth."* - manager, mid-sized coffee shop

These reflections illustrate how Bandung's independent coffee shops are beginning to rethink their value creation strategies beyond transactional sales. Several owners emphasized the importance of diversifying revenue through local partnerships and creative product offerings, often combining food, retail, and events to build a loyal customer base. However, while many expressed enthusiasm for these innovations, digital adaptation remains a barrier. Financial and technical resource limitations prevent smaller cafes from fully leveraging online platforms. This tension underscores a broader theme: TLBMC's economic value is most effective when innovation is community-driven, yet its full potential requires digital fluency and strategic support.



**Figure 1.** TLBMC Economic Layer

One notable finding concerns how coffee shops expand their product offerings to generate alternative revenue. Earlier studies by Mili and Loukil (2023) documented improved economic performance in businesses that integrate sustainability aspects directly into their product or service innovations, such as developing specialty menus or collaborating with local artisans. In Bandung, several coffee shops adopt this approach by introducing co-branded merchandise, sourcing local pastries for "limited edition" menu items, and partnering with event organizers for weekly workshops. These creative revenue streams do more than enhance financial resilience; they also tap into intangible benefits such as brand loyalty and community goodwill. This finding mirrors the outcomes reported in the Spanish fruit and vegetable sector, where TLBMC-based models led

to improved profit margins and heightened consumer engagement ([Mili & Loukil, 2023](#)).

Despite these promising developments, there are still challenges in fully optimizing digital channels for increased visibility and sales. Similar to the scenario described by [Pardalis et al. \(2020\)](#), some Bandung coffee shop owners hesitate to invest in robust online ordering systems or targeted digital advertisements, citing concerns over cost and technological barriers. While more tech-savvy competitors leverage delivery apps and social media marketing to increase sales volumes, smaller operators occasionally struggle to keep pace. This tension between opportunity and limited capacity suggests that local coffee shops must develop strategic digital competencies to exploit the TLBMC's full economic potential. In contrast to prior studies that focus on large-scale F&B chains ([Kwak et al., 2019](#)), the Bandung setting demonstrates how, when suitably guided, micro-enterprises operate within stricter resource constraints yet profit from incremental technological integration.

By and large, the TLBMC helps coffee shops identify and address operational inefficiencies. For instance, referencing cost structures in the economic layer encourages owners to reexamine sourcing relationships, staff allocation, and overhead expenses. In line with findings from the Indonesian fashion industry ([Hurriyati et al., 2023](#)), owners who adopt TLBMC-based strategies often discover that eco-friendly improvements like optimizing production processes or embracing local supply chains, can also yield cost savings. Furthermore, intangible benefits arise from a stronger sense of brand differentiation; consumers increasingly prefer businesses that openly champion ethical sourcing or fair labor. Collectively, these observations highlight how the TLBMC's economic layer motivates not only profit-oriented adaptations but also synergy with other layers, reinforcing integrated forms of sustainable value creation. From a solution perspective, coffee shop owners could consider small-scale investments in digital infrastructure (e.g., social media marketing workshops, shared delivery platforms) to overcome technological barriers. In addition, local government agencies or industry associations might offer subsidized training sessions, enabling micro-enterprises to enhance their online presence and thus maximize the TLBMC's potential for revenue diversification.

### **Environmental Layer**

The environmental layer in TLBMC draws explicit attention to life cycle thinking, material usage, and waste management, which are crucial elements in the coffee sector ([Sultan et al., 2021](#)). Most Bandung coffee shops rely heavily on local beans, a practice that reduces transport-related emissions. However, the extent to which local sourcing is effectively communicated to consumers varies significantly. As [Mili and Loukil \(2023\)](#) note, businesses that convey their commitment to eco-friendly sourcing can cultivate stronger consumer loyalty. However, many smaller establishments in Bandung underutilize marketing strategies that highlight environmental benefits.

"Our beans come from West Java." We need to support local farmers and reduce logistics."

(Owner, eco-conscious cafe)

"I want to monitor electricity usage, but we don't have the tools or time." We try small steps—like switching to LEDs."

(Barista, university-area cafe)

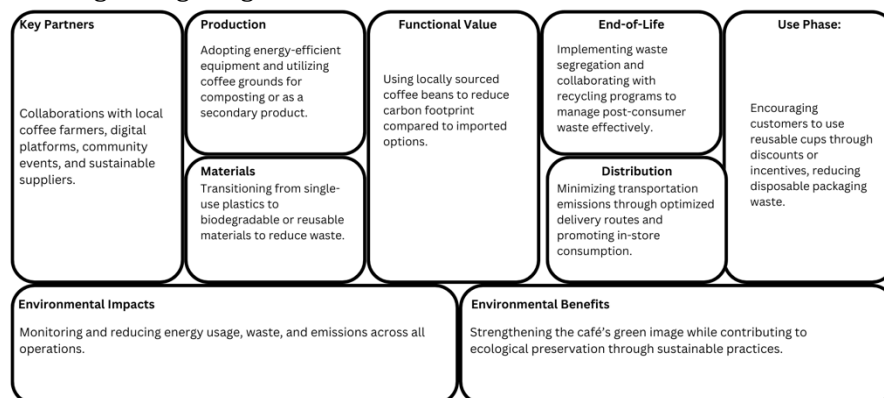
"We offer discounts for reusable cups, but not many customers bring them."

"Disposable is still easier."

(Staff member, mid-traffic cafe)

These quotes reflect the varied environmental awareness among Bandung's coffee shop operators. Local sourcing is widely practiced and positively perceived, often framed as a dual benefit: ecological responsibility and support for local farmers. However, deeper environmental strategies, such as energy monitoring or structured waste reduction, proved difficult to implement due to resource and time constraints. Even simple initiatives, like promoting reusable cups, often face low consumer uptake, highlighting the need for broader behavior change alongside internal adjustments. In these contexts, environmental sustainability emerges as a series of small, good-faith efforts rather than a comprehensive system, underscoring the value of scalability, visibility, and public engagement for broader impact.

In day-to-day operations, coffee grounds and disposable cups generate the highest waste outputs. Similar to the challenges identified by [Pardalis et al. \(2020\)](#), numerous coffee shop operators in Bandung lack formal systems for separating compostable waste from plastics. Although they express interest in biodegradable materials, high costs and inconsistent supplier availability complicate the transition. Nevertheless, a subset of more forward-thinking establishments has taken steps to mitigate environmental impacts. For instance, one cafe regularly donates used coffee grounds to local farmers for compost, mirroring the cost-effective sustainability approaches documented in Indonesian MSMEs in the fashion sector ([Hurriyati et al., 2023](#)). Such partnerships reduce landfill contributions and enhance the brand's eco-friendly reputation, reinforcing intangible gains that transcend immediate financial metrics.



**Figure 2.** TLBMC Environmental Layer

Further complexity emerges around energy usage. Bandung coffee shops often operate for extended hours, catering to late-night study sessions or social gatherings, which can increase electricity consumption. While prior research suggests that systematic energy auditing can lower utility costs and carbon emissions ([Wit et al., 2021](#)), none of the coffee shops investigated in this study implemented formal energy assessments. Instead, they rely on ad hoc measures, such as upgrading air conditioning units or adopting LED lighting. Similar to the findings of [Kwak et al. \(2019\)](#) in the context of digital service providers, the TLBMC's environmental layer highlights the importance of robust data collection for evidence-based action. However, owners often cite time and resource limitations that make thorough energy consumption measurement a lower priority. This shortfall contrasts with studies like those in the Spanish F&B industry ([Mili & Loukil, 2023](#)), where more advanced resource monitoring mechanisms facilitated broader sustainability strategies.

Packaging represents another key node in the environmental discussion. Single-use plastic cups and lids remain commonplace due to convenience and lower immediate costs, a pattern aligned with earlier descriptions of the fast food sector ([Kwak et al., 2019](#)). A handful of Bandung

cafes now offer discounts to customers who bring reusable tumblers or sell reusable cups themselves. Although this initiative has not yet reached widespread adoption, it signals a growing recognition of the TLBMC's emphasis on end of life considerations (Joyce & Paquin, 2016). As observed in other research contexts, if scaled effectively, these incremental shifts could accumulate into significant environmental impact reductions if scaled effectively (Hurriyati et al., 2023). The challenge, however, is convincing both owners and consumers that the long-term benefits outweigh short-term costs and behavioral inconveniences.

Regarding carbon footprint reduction, some coffee shop operators acknowledge that ongoing partnerships with local farmers effectively reduce transportation distance, lowering greenhouse gas emissions (Mili & Loukil, 2023). This practice parallels the synergy reported in specialized agricultural supply chains, where local sourcing fosters minimal transport footprints and direct relationships with farmers (Pardalis et al., 2020). In Bandung, however, supply chain diversification is less developed. Only a few coffee shops maintain multiple sources of beans or other key ingredients, leaving them vulnerable to disruptions. Nonetheless, the TLBMC perspective encourages a more holistic supply chain outlook, underscoring the environmental vulnerabilities that can arise from overdependence on a single supplier (Joyce & Paquin, 2016). Ultimately, a balanced approach incorporating local sourcing, minimal packaging, and energy-conscious operations seems vital for coffee shops aspiring to strengthen their environmental performance while maintaining economic stability. In terms of potential solutions, coffee shops could implement simple waste sorting stations and partner with local recycling or composting services to effectively manage coffee grounds. Government incentives or collaborations with environmental NGOs might further motivate small cafes to adopt energy auditing and upgrade to eco-friendly equipment. The development of local supplier networks coordinated by local business associations would mitigate disruptions and reinforce a shared commitment to environmental stewardship.

### Social Layer

The social layer of TLBMC underscores how coffee shops, particularly those in Bandung, engage with stakeholders such as employees, local communities, and end users. This facet often yields intangible benefits related to public image, brand loyalty, and social capital (Kwak et al., 2019). Many cafes in Bandung position themselves as "community spaces" by offering free Wi-Fi, comfortable seating, and occasional cultural events. This resonates with the notion advanced by Joyce and Paquin (2016) that enabling social interactions can shape a cafe's distinctive identity, leading to repeat visits and positive word-of-mouth.

"We don't just sell coffee." We want people to feel at home, to talk, to work, and to share ideas."

(Owner, creative hub-style cafe)

"We train our staff in-house, especially in customer service and basic sustainability practices." But we cannot afford formal programs."

(manager, small independent shop)

"After we posted our farmer visit on Instagram, many customers said they appreciated the transparency. It made them feel good about supporting us."

(Owner, café with direct sourcing model)

The social role of Bandung coffee shops emerges vividly through these narratives. Owners view their cafés not just as commercial venues but also as inclusive spaces for community gathering,



informal education, and human connection. In-house staff development is an essential, if modest, investment, even in the absence of formalized training frameworks. Public storytelling, especially on social media, helps extend the café's social mission beyond its walls, enhancing trust and emotional resonance with customers. However, most initiatives remain informal and reliant on personal values rather than institutional structures. This highlights both the strength and fragility of the social layer: its power lies in authenticity and proximity, but its scalability demands clearer policies and sustained collaboration.

However, these establishments' social impact remains uneven. While some coffee shops invest in barista training programs and staff development, leading to enhanced employee satisfaction and lower turnover, others struggle to allocate resources for systematic human capital improvements (Mili & Loukil, 2023). Similarly, initiatives that benefit surrounding communities, such as hosting local art exhibitions or fundraising drives, are not uniformly adopted. Such programs, if well executed, can reinforce a coffee shop's alignment with TLBMC-driven values by enhancing community goodwill and potentially attracting new patrons (Hurriyati et al., 2023). However, limited managerial bandwidth often hampers consistent efforts, mirroring the constraints observed in other sectors' microbusinesses (Bressan & Pedrini, 2020).

From a governance standpoint, clear policy statements on fair wages or inclusive hiring remain uncommon among Bandung coffee shops. In contrast to corporate-level sustainability programs that typically document social commitments (Kwak et al., 2019), most local cafe owners rely on informal relationships and trust-based arrangements. While this fosters a familial atmosphere, it can hinder accountability and transparency. Pardalis et al. (2020) emphasized that well-structured governance, highlighting diversity, transparency, and formal roles, strengthens stakeholder confidence and offers a blueprint for long-term strategic planning. Thus, the absence of robust governance protocols in some Bandung coffee shops represents a gap between TLBMC theory and real-world practice.

In addition, the scope of social engagement often remains confined to local neighborhoods. Although some cafes sporadically participate in citywide coffee festivals, few undertake sustained collaborations with broader cultural or educational institutions. This limited outreach curtails the potential for shared knowledge, market expansion, and cross-pollination of sustainability innovations (Kwak et al., 2019). A parallel can be drawn with the case of tourism-based TLBMC implementations in rural areas (Gunarta & Hanggara, 2018), where forging multi-stakeholder alliances significantly amplified social and economic outcomes. For Bandung coffee shops, the TLBMC's social layer essentially encourages them to formalize relationships with local nonprofits, schools, or industry associations, thereby elevating both brand identity and broader communal benefits.

Finally, end users in Bandung's coffee shops display varying degrees of engagement with social causes. While younger consumers often resonate with fair trade practices and community-driven content, older patrons may prioritize convenience or pricing. This generational gap in social awareness corroborates earlier studies that highlight the importance of tailoring messages to distinct customer segments (Mili & Loukil, 2023). Some coffee shops bridge this gap by transparently showcasing farmer profiles, supporting smallholder cooperatives, or inviting farmers to share their experiences during "meet the grower" events. Such efforts help humanize the supply chain, fostering empathy and loyalty among a diverse customer base. However, the frequent lack of consistent storytelling or marketing means that these advantages remain underexploited, underscoring the necessity for ongoing strategy refinement in line with TLBMC principles.

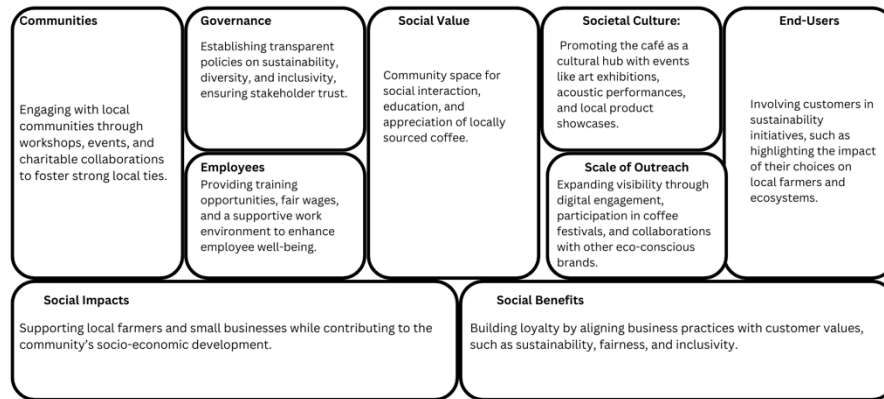


Figure 3. TLBMC Social Layer

Examining Bandung coffee shops through TLBMC's economic, environmental, and social lenses reveals a multifaceted landscape of progress and challenges. Economically, coffee shops tend to thrive by broadening revenue streams and aligning product innovation with sustainability goals, although digital integration remains sporadic. Environmentally, smaller businesses face obstacles in waste management and energy optimization, yet local sourcing and modest packaging reforms demonstrate significant potential for carbon footprint reduction. Socially, coffee shops serve as dynamic community spaces that can augment brand loyalty and foster intangible benefits. However, the absence of formal governance mechanisms and inconsistent regional network expansions limit the overall impact. These findings largely align with, but also expand upon, previous scholarship on TLBMC adoption (Joyce & Paquin, 2016; Mili & Loukil, 2023; Pardalis et al., 2020). Compared to studies highlighting large-scale enterprises, Bandung coffee shops present a context of resource-limited but community-driven operations, suggesting that TLBMC's three layers can be successfully integrated with thoughtful planning and stakeholder collaboration by even smaller actors. The results indicate that sustainable transformations are based on an intricate interplay of organizational culture, consumer demand, and supportive local ecosystems. As the TLBMC framework continues to gain international traction, future investigations could delve into formalized governance strategies, advanced environmental auditing, and cross-sector partnerships that help coffee shops amplify their positive social and ecological footprints.

## CONCLUSIONS

This study underscores the viability of applying the Triple Layered Business Model Canvas (TLBMC) to coffee shops, particularly in urban contexts like Bandung. Findings reveal that concurrently addressing economic, environmental, and social dimensions can significantly enhance overall sustainability and business resilience. On the economic front, local coffee shops benefit from revenue diversification, cost efficiencies, and heightened brand differentiation, thus creating multiple tangible gains. Small-scale initiatives such as local sourcing, composting coffee grounds, and adopting reusable cups not only reduce waste but also foster positive consumer perception. Engaging local communities through inclusive events and transparent supply chain practices promotes loyalty and goodwill, which are essential for maintaining a competitive edge. In practical terms, coffee shop owners could strengthen sustainability implementation by establishing strategic partnerships with local suppliers, government bodies, and non-government organizations (NGOs) to share resources. From the policymaking perspective, stakeholders can support these efforts by creating fiscal incentives, such as tax breaks or grants, for small enterprises adopting green initiatives. These results have substantial implications for smaller enterprises seeking to balance profitability with responsible governance, as they demonstrate that resource limitations do not impede the successful integration of TLBMC principles.

More broadly, this research contributes to the existing body of knowledge by demonstrating how micro-level enterprises can align with larger sustainability goals without sacrificing financial stability. By illustrating a nuanced, practice-oriented view of the TLBMC in action, it aids policymakers, coffee entrepreneurs, and other stakeholders in formulating strategies that address local market needs while remaining globally responsive to environmental and social concerns. Future TLBMC adoption in similar contexts may strengthen collaborative networks, spurring broader innovations in the Food and Beverage sector.

### **LIMITATION & FURTHER RESEARCH**

A key limitation of this study is its reliance on qualitative data gathered from a limited number of coffee shops within a single urban region, which may restrict the generalizability of findings to other geographies or business formats. Additionally, the absence of longitudinal analysis limits the understanding of how TLBMC-driven initiatives evolve. Future research could extend this work by incorporating quantitative metrics to systematically measure environmental and social impacts, thereby complementing qualitative insights. Comparative studies across diverse regions would further elucidate the range of contextual factors affecting the adoption of TLBMC. Researchers might also investigate longitudinal shifts in consumer and employee behaviors, examining how incremental changes in coffee shop practices translate into sustained competitiveness and deeper community engagement.

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