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The Triple Bottom Line of Printing Enterprises in Accra: Evaluating Economic Performance, Environmental Sustainability and Social Responsibility

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Abstract



The printing industry in Ghana plays a vital role in economic development but is increasingly scrutinised for its environmental and social impact. Despite global momentum toward sustainable enterprise models, limited research exists on how Ghanaian printing firms integrate economic, environmental, and social goals. This study addresses that gap by investigating the sustainability practices of printing enterprises in Accra using the Triple Bottom Line (TBL) framework. Grounded in Stakeholder Theory, it explores the perspectives of press owners as key actors influencing sustainable practices within the sector. A qualitative case study design was employed, involving semi-structured interviews, focus group discussions, document analysis, and observation. Twelve experienced participants were purposively selected from three major printing hubs: Accra New Town (5), Kokomlemlé (4), and Kotobabi (3). Findings show that economic priorities dominate operational decisions, while environmental efforts are limited due to financial and regulatory barriers. Social responsibility varies by enterprise size, with larger firms demonstrating more structured CSR engagement. Furthermore, inconsistent stakeholder involvement has led to gaps in policy implementation. The study concludes that embedding sustainability

into operational strategies is essential for long-term sector resilience. It recommends strengthening stakeholder collaboration, implementing policy incentives to support green practices, and raising awareness of sustainable business models. The findings offer valuable insights for policymakers, industry leaders, and sustainability advocates aiming to advance responsible business practices in Ghana's printing sector.

Keywords: triple bottom line, printing enterprises, stakeholder theory, environmental sustainability, corporate social responsibility, case study

1. Introduction

The printing industry plays a critical role in Ghanaian economy, serving as a cornerstone for communication, education, marketing, and packaging. However, its operations are increasingly scrutinised due to their environmental impact, including high-energy consumption, waste generation, and reliance on non-renewable resources. In recent years, the industry has faced growing pressure to balance economic growth with environmental sustainability and social responsibility. This has led to the adoption of frameworks such as the Triple Bottom Line (TBL), which emphasises the integration of economic, environmental, and social dimensions in business practices. Existing research has explored various aspects of sustainability in the printing industry, including the adoption of green technologies, waste management practices, and corporate social responsibility (CSR) initiatives. For instance, studies by Smith et al. (2018) and Johnson (2020) have highlighted the economic benefits of sustainable practices, such as cost savings from energy efficiency and improved brand reputation. Similarly, research by Green et al. (2019) has examined the role of regulatory frameworks in driving environmental compliance. However, much of this research has focused on large enterprises, with limited attention to the challenges faced by small and medium-sized printing firms in Ghana.

What remains unclear, and thus forms the core concern of this study, is how small and medium-scale printing enterprises in Accra can integrate economic performance with environmental and social responsibilities under the TBL framework in the face of practical constraints. Furthermore, the perspectives of key stakeholders such as employees, policymakers, and environmental advocates are often underrepresented in the literature, creating a gap in understanding how collaborative approaches can drive sustainable outcomes. While the printing industry has made strides in adopting sustainable practices, significant challenges persist. Economic performance continues to dominate decision-making, often at the expense of environmental and social considerations. Smaller enterprises, in particular, struggle to implement sustainable

practices due to financial constraints and limited access to resources. Additionally, weak regulatory enforcement and inconsistent stakeholder engagement have hindered the effective implementation of sustainability policies.

Previous studies have primarily focused on the technical and economic aspects of sustainability, such as the adoption of green technologies and cost-benefit analyses. However, there is a notable gap in research that examines the holistic integration of the TBL framework within the printing industry. Specifically, there is limited understanding of how stakeholders perceive and influence sustainability practices, as well as how these practices vary across different sizes and types of enterprises. This gap in knowledge limits the ability of industry leaders and policymakers to develop targeted strategies that address the unique challenges faced by printing enterprises.

The purpose of this study was to explore how printing enterprises in Accra incorporate the principles of the Triple Bottom Line (TBL) - economic performance, environmental sustainability and social responsibility into their business operations. It seeks to understand the challenges they face in achieving a balance between profitability and sustainable business practices. Specifically, the study sought to: 1. assess how printing enterprises prioritise and implement TBL principles in their operations 2. identify key economic, environmental and social sustainability challenges faced by printing firms in Accra and 3. evaluate the role of stakeholder engagement in shaping sustainability practices in the printing sector. The study was focused on three major printing hubs in Accra: Accra New Town, Kokomlemle and Kotobabi.

2. Review of Related Literature

The Triple Bottom Line (TBL) concept encompassing economic, social, and environmental sustainability has gained prominence in company strategy discussions. This paradigm underscores the necessity of equilibrating profit, people, and ecology to secure enduring success.

2.1 Economy Performance of Printing Enterprises

The economic performance of printing enterprises is crucial for their sustainability and expansion. Smith (2020) asserts that the efficiency and profitability of printing enterprises are intricately connected to technology innovations, market demand, and operational management. The adoption of advanced printing technologies enables companies to lower manufacturing expenses while enhancing output, so directly influencing their financial stability (Johnson, 2019). Furthermore, printing companies must adjust to customer trends like personalisation and environmentally sustainable products, which have emerged as significant growth catalysts in the industry (Williams & Taylor, 2021).

The significance of worker productivity and skilled labour in achieving robust economic performance is paramount. Martin and Zhang (2022) emphasised the necessity of ongoing workforce training and development to improve employees' technical skills, hence facilitating corporate growth and sustainability. The financial performance of printing firms is subject to external influences, including market competitiveness, raw material expenses, and regulatory alterations (Kumar & Patel, 2020). To be competitive, printing enterprises must perpetually evaluate and enhance their economic strategies, taking into account both internal elements and the wider industry context (Brown, 2023).

2.2 Social Responsibility and Ethical Practices

Social responsibility and ethical standards are essential concepts for firms aiming for long-term viability. Carroll (1999) posits that corporate social responsibility (CSR) entails the voluntary incorporation of social and environmental considerations into business operations. This method guarantees that organisations effectively impact society welfare while upholding ethical principles, including justice, openness, and responsibility (Smith, 2003). Ethical practices in organisations encompass the equitable treatment of employees, compliance with environmental standards, and the responsible promotion of products and services (Jones & Wicks, 1999). Porter and Kramer (2006) assert that ethical business practices are congruent with a company's fundamental beliefs and long-term strategic objectives, resulting in an enhanced reputation and strengthened stakeholder relationships. Moreover, corporate social responsibility (CSR) has been associated with increased consumer loyalty, employee happiness, and financial performance (McWilliams & Siegel, 2001). These findings underscore the significance of ethical behaviour in attaining sustainable business practices that not only meet legal requirements but also advance the greater societal good (Freeman, 1984).

Ethical and socially responsible activities are essential for cultivating trust and ensuring sustained company success. By incorporating these principles into their operations, firms strengthen their relationships with stakeholders and contribute to resolving urgent societal issues, thereby benefiting both the enterprise and society (Carroll, 1999; Porter & Kramer, 2006).

2.3 Environmental Sustainability and Green Innovation

Environmental sustainability and green innovation have garnered considerable focus as approaches to alleviate environmental degradation while promoting economic growth. Schaltegger et al. (2020) define green innovation as the creation and implementation of goods, processes, or activities that mitigate environmental damage. Green innovations, including renewable energy technology and eco-efficient manufacturing processes,

enhance environmental sustainability by diminishing carbon footprints, energy consumption, and trash generation (Hojnik & Ruzzier, 2016). Organisations must embrace ecologically sustainable practices to fulfil legal requirements and combat climate change, which is essential for long-term performance (Porter & van der Linde, 1995).

The incorporation of green innovation into business models strengthens enterprises' competitive edge while promoting sustainable economic practices. López-Gamero et al. (2016) assert that enterprises investing in green innovation reap environmental benefits while simultaneously achieving economic gains through cost reductions, enhanced brand reputation, and expanded market share. Nonetheless, although the financial advantages of green innovation are clear, obstacles persist regarding initial investment expenditures and technological progress (Dangelico & Pujari, 2010). Consequently, it is imperative for corporations and politicians to persist in promoting innovation via incentives and partnerships that enhance environmental sustainability and propel green innovation across sectors (Kemp & Pearson, 2007).

2.5 Integrated Approaches to TBL and Stakeholder Engagement

Integrated approaches to TBL entail simultaneous consideration of all three dimensions, ensuring that actions in one area do not undermine or clash with initiatives in another. Elkington (1997) posited that the concept of the Triple Bottom Line (TBL) emerged as a counter to the limited emphasis on financial profit in conventional business models, advocating for a comprehensive framework that integrates social and environmental considerations into decision-making processes. As enterprises endeavour to integrate the Triple Bottom Line into their operations, the incorporation of stakeholder engagement is essential to ensure that all pertinent viewpoints are acknowledged and that decisions correspond with the requirements and values of varied stakeholders (Freeman, 1984).

Engaging stakeholders is essential for effective TBL implementation, since it enables companies to recognise and address the interests of those impacted by their actions. Mitchell et al. (1997) assert that stakeholder theory contends firms should equilibrate the interests of diverse stakeholders, including as employees, customers, communities, and the environment, during decision-making processes. Integrating TBL concepts into stakeholder engagement strategies enables firms to cultivate trust, boost their reputation, and promote long-term sustainability (Freeman, 1984). Crane et al. (2008) discovered that firms that actively engage stakeholders are more adept at tackling sustainability difficulties, as they get critical insights into environmental and social issues, facilitating more informed and responsible decision-making. In this setting, TBL

and stakeholder engagement are interdependent, as stakeholder participation aids in recognising and managing the trade-offs among economic, social, and environmental objectives.

Moreover, the integration of TBL with stakeholder involvement has been associated with enhanced organisational performance and competitiveness. Porter and Kramer (2011) assert that enterprises can attain competitive advantages and contribute to societal objectives by connecting their business strategy with societal and environmental demands to create shared value. This method guarantees economic sustainability while enhancing the welfare of communities and ecosystems. An essential element of integrated systems is the synchronisation of stakeholder interests with organisational objectives, necessitating continuous conversation, transparency, and collaboration (Harrison et al., 2015). Organisations can utilise stakeholder engagement to forge collaborations and discover new solutions to sustainability concerns, thereby generating value that benefits both the business and society.

The incorporation of TBL principles and stakeholder involvement provides enterprises with a holistic framework for sustainability that harmonises economic, social, and environmental goals. Through the adoption of integrated strategies, enterprises can attain sustained success while addressing the interests and concerns of stakeholders. The literature underscores that stakeholder participation is crucial for the successful execution of TBL, as it enables businesses to discern risks, opportunities, and strategies for attaining sustainability objectives. Future study ought to investigate the precise processes by which stakeholder engagement might be included into TBL practices to improve organisational sustainability (Elkington, 1997; Freeman, 1984; Mitchell et al., 1997).

2.6 Sustainable Business Practices in the Printing Industries in Accra

The printing sector in Accra has seen substantial expansion throughout the years, considerably contributing to local employment and money generation. Adomako et al. (2018) underscore the sector's contribution to Accra's GDP, as seen by the growing number of printing enterprises and their expanding market share. Nonetheless, these economic advantages are frequently mitigated by the substantial production expenses, particularly regarding raw materials and energy usage. This economic challenge offers printing companies in Accra the chance to use more economical and efficient methods. Research indicates that companies incorporating sustainability into their operations frequently realise long-term financial advantages by minimising operational expenses and appealing to a more environmentally aware consumer demographic (Simpson et al., 2007).

The printing industry in Accra encounter considerable issues with waste management and resource conservation. The manufacturing of paper and other printing materials produces significant waste, and the utilisation of chemical-based inks and solvents presents environmental hazards (Font et al., 2005). Recent research by Agyemang et al. (2020) indicates that although certain printing companies in Accra have made progress in minimising waste and adopting environmentally friendly methods, such as recycling and utilising water-based inks, substantial efforts are still required to achieve comprehensive sustainability. Environmental rules in Ghana are developing; yet, enforcement is inadequate, necessitating that firms use proactive strategies to reduce their environmental impact (Moyi, 2017).

The social responsibility component of the Triple Bottom Line is a vital consideration for printing companies in Accra. Printing companies exert a direct influence on their staff, clientele, and local communities. A research by Acheampong (2021) revealed that numerous printing enterprises in Accra are increasingly committing to social responsibility by providing improved working conditions, training opportunities, and community development activities. These activities, when integrated with the TBL method, enhance corporate reputation and cultivate a more devoted workforce and customer base. The significance of local governments and NGOs in advancing sustainable business practices is paramount. Their backing via governmental frameworks and incentives can catalyse transformation within the sector, guaranteeing the incorporation of social and environmental factors into company plans (Bendell, 2004). In summary, although the printing industry in Accra demonstrates potential regarding its economic performance, it encounters substantial obstacles related to environmental sustainability and social responsibility. The adoption of the Triple Bottom Line strategy provides a holistic framework for tackling these difficulties, guaranteeing that firms prosper economically while simultaneously benefiting their communities and the environment. Ongoing research and industry collaboration are crucial for cultivating sustainable business practices that enhance industrial growth while reducing its adverse effects on the environment and society (Elkington, 1997; Gatlin et al., 2014).

3. Methodology

This methodological framework was designed to align with the study's objectives of evaluating how printing enterprises engage with the economic, environmental, and social dimensions of sustainability. Qualitative research method was used to achieve the research objectives stated. Strauss and Corbin (1990, p. 11), stated that, "By the term 'qualitative research', we mean any type of research that produces findings not arrived at by statistical procedures or other means of quantification. The qualitative method was chosen because there was a need to listen to people to obtain vital information

about the study. Again, activities of the printing enterprises and their environs needed to be observed and monitored closely in their natural states for vivid description and reportage. The study adopted the exploratory case study design because it provides valuable insight into printing enterprises and their role in sustainable economic growth and job creation.

A representative sample of participants were selected from Accra New Town, Kokomlemle and Kotobabi using the snowball and purposive sampling techniques. In all, a total of twelve (12) participants with over two decades of experience in the printing sector were purposively selected from three major printing hubs in Accra: Accra New Town (5), Kokomlemle (4), and Kotobabi (3). Despite efforts to recruit additional participants, no further experienced participants were willing or able to participate, resulting in a sample size that was “data-driven” rather than “determined by a priori assumptions” (Mason, 2010, p. 64). This approach is consistent with qualitative research principles, which prioritise depth and riches of data over sample size (Creswell, 2014).

Primary data was collected using interviews, focus group discussions, observation and document analysis. The careful selection of research instruments improved the profundity and dependability of results. Semi-structured interviews were selected due to their flexibility in eliciting in-depth, participant-led responses. Focus group discussions enabled collective reflection, non-participant observations captured non-verbal dynamics within the operational environments of the enterprises while document analysis validates and supplements data. Personal interaction in face-to-face interviews creates a conducive environment for participants to feel more comfortable, leading to increased openness and disclosure (Liamputtong, 2013). Each willing participant was interviewed for approximately thirty minutes. Interview guides were given to respondents for some days before the interview was conducted. Providing the respondents with comprehensive knowledge of the interview subject allowed them to articulate their personal thoughts freely, thereby eliciting new and insightful enquiries. Employing various instruments guarantees a thorough comprehension of the research subject and enhances the validity of the conclusions reached. The raw data was subsequently transcribed, organised, and presented according to the objective under study.

Thematic analysis method was utilised to extract significant insights from the acquired data. Data were transcribed and analysed using the six-phase thematic analysis process propounded by Braun and Clarke (2006): familiarisation with data, generation of initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report. NVivo software coding was used to facilitate systematic coding and organisation of themes. The recorded interviews from all respondents were played

back, listened and transcribed into written notes by either paraphrasing or writing in verbatim.

Participants in the study were made aware of the intent and purpose of the research before their engagement. The research was conducted strictly with assurance of confidentiality and non-disclosure of respondents' identities by not recording their names and giving respondents pseudonyms. To enhance credibility, data triangulation was used by combining interviews, observations, and document reviews. Member checks and prolonged engagement ensured that interpretations accurately reflected participant perspectives. A reflexive journal was kept to support dependability and confirmability.

4. Discussion of Findings

4.1. Adapting to Economic Challenges: The Struggle of Printing Businesses in Accra.

In response to the current economic performance, environmental impact, and social responsibility of printing enterprises, and their effect on sustainable economic growth and job creation, Respondent 1a said this:

To put it mildly, the economic performance of printing businesses is difficult right now. The market is increasingly competitive, particularly due to the expansion of computer-generated printing. Although there is still a market for printed products like books and flyers, the profit margins are getting smaller because of growing prices for supplies like paper and ink.

This observation corresponds with Smith (2020), who contends that profitability in printing is closely linked to operational expenses and market fluctuations. Kumar and Patel (2020) assert that the economic performance of the printing sector is significantly affected by raw material costs and market competition. The respondents' concerns regarding diminishing margins and input costs illustrates the external economic forces outlined in the literature. He elaborated:

The cost of imported items has increased due to price increases, and as printing supplies are primarily imported, we are experiencing currency swings. Sales volumes are also smaller, and many small-scale printers have forced to diversify their services just to stay alive. Printing businesses that do not change with the times and follow new trends in the industry will eventually go out of business.

The respondent's reaction shows that, despite major economic obstacles, the printing business is still experiencing growth in certain niches, like as packaging. His reference to declining profitability and increasing costs indicates that small and medium-sized printing enterprises (SMPEs) are probably facing financial hardship. The focus on currency fluctuations and competitiveness suggests that local and worldwide market dynamics are important for printing enterprises' capacity to be financially sustainable. A larger trend in the industry is that printing companies are being compelled to diversify in order to stay relevant, which is reflected in the demand for diversification.

Nonetheless, Respondent 2a regarding economic performan

In recent years, the printing industry here in Accra has experienced instability in its status. I have observed a decline in orders for conventional printed materials such as posters and brochures, especially as an increasing number of individuals shift towards digital marketing. Conversely, there is an expanding market for personalised products such as branded stationery and distinctive packaging. For several individuals, this has served as a vital support. We have been compelled to lower prices to maintain competitiveness due to a drop in profitability.

Responsiveness to market needs demonstrates a stakeholder-centric strategy, connecting product offerings with consumer expectations. He added this:

The overhead costs are rising, especially energy costs, and it is become harder to keep up with technology. We are still here, though, mostly because we have adapted new business strategies like outsourcing some of our labour to cut expenses.

Respondent 2a's statement suggests that the economic performance of printing enterprises is unpredictable, particularly due to the growing popularity of digital alternatives. Similar to Respondent 1a, he recognises the promise in niche markets such as bespoke products and distinctive packaging; nonetheless, the challenges posed by declining conventional orders remain unresolved. Maintaining competitiveness through price reduction is a common challenge encountered by sectors undergoing technological disruption. The employment of outsourcing as a cost-reduction technique by enterprises indicates a restructuring effort to remain viable, potentially impacting the sector's capacity for sustainable growth in the long run.

In addition to that, Respondent 3a asserts:

The previous three years have posed challenges for my organisation to maintain profitability. I have observed a notable decline in my profit margins attributable to increasing costs of essential commodities such as paper and ink, as well as intensified competition from digital media. Acquiring consistent, substantial contracts has been challenging for us, especially with corporate clients increasingly favouring digital solutions. Nonetheless, these are often intended for smaller, more specialised printing activities that yield lower revenue compared to big printing orders. We have intermittently seen surges in demand. Our operational expenses have become erratic and volatile due to fluctuations in the local currency.

The owner's remark highlights a significant issue confronting the printing industry: declining profitability due to escalating material costs and competition from digital media. Smaller, specialised publications are supplanting conventional bulk printing orders, reflecting broader industry changes as digital platforms capture an increasing market share. The challenges in securing substantial contracts also indicate a downturn in the market for printed materials, which poses significant issues for SMPEs. This indicates that while the market for physical prints persists, its scale and potential for revenue generation have diminished, adversely affecting the overall financial health of printing enterprises such as this one. The unexpected costs complicate long-term planning for owners, while the previously mentioned currency fluctuations introduce an additional layer of difficulties. The depiction illustrates precarious economies characterised by erratic profitability and challenging cost management.

Besides, Respondent 4a had this to say:

In today's market, the financial performance of printing businesses is problematic. Demand has decreased because of the shift to online media and the computerised transformation. Prices are rising due to supply chain issues and price rises, particularly for basic materials such as paper and ink. Many individuals find it challenging to maintain competitiveness. Profit margins have diminished due to the price reductions and discounts we have been compelled to adopt to retain our clients.

The owner highlights the challenges the printing industry encounters in sustaining economic viability due to diminishing demand for traditional printing and escalating expenses. The effort to sustain profitability has led to price reductions aimed at client retention, presenting an additional difficulty for the printing business. The respondent continued to say that;

By utilising biodegradable ink, printing companies are attempting to lessen their environmental impact. But this has a greater price tag, which isn't always within reach

The owner highlights that attempts are being made to employ eco-friendly products, but stresses that this is an expensive undertaking.

Also, Respondent 4b also said this:

Even though we are facing pressure from competition and technological developments, our economic performance is stable. The need for traditional printing techniques like offset printing is declining as digital alternatives gradually take their place. Despite this, we have successfully retained their clientele by offering specialist printing solutions tailored to niche sectors, such as packaging design and specialty prints.

The owner expressed concerns regarding the diminishing profit margins resulting from escalating operating expenses, particularly those related to sourcing high-quality paper and managing energy use. This indicates that, despite challenges posed by increasing operating costs and technological upheaval, the company may endure by focusing on niche markets. The owner recognises that sustaining economic viability necessitates adaptation to these advances.

Respondent 5a attested to this fact as he said this:

The present economic performance of the printing sector is inconsistent. Larger firms fare better; nonetheless, smaller presses, such as ours, face severe competition. We are at a disadvantage due to our insufficient resources to adopt the latest technologies.

This perspective highlights a critical disparity within the industry. Smaller enterprises struggle with limited access to technological advancements, which hampers their competitiveness. In this context, government and industry organisations emerge as key stakeholders, responsible for ensuring equitable access through subsidies, policy support, and training programmes. By doing so, they can help level the playing field and enable all enterprises to benefit from sectoral growth.

According to Respondent 1b:

The printing industry is now operating more efficiently than expected, particularly in niche sectors such as packaging and promotional materials. The need for custom-printed products has risen, especially as several small businesses seek branding materials. However, the elevated expense of raw materials results in exceedingly slim profit margins.

This owner provides a more optimistic evaluation of the printing industry's financial condition, particularly concerning specialist sectors such as packaging and promotional products. Despite the adverse effects of escalating pricing on profitability, the firm has been bolstered by the increased demand for custom printing services.

Moreover, Respondent 2b had this to say:

In my view, changing consumer demands are a direct consequence of economic performance. Demand for specialised, high-quality printing, especially within the business sector, exceeds that for mass purchases of things such as flyers and posters.

As principal stakeholders, customers influence both innovation and the diversification of services. Probing further, he said:

While this has sustained us, it is clear that the industry is transitioning away from mass production

Respondent 2b clarifies the transformation of the printing industry from large-scale production to the creation of specialised, high-quality prints. This trend has enabled them to maintain profitability, however it also signifies a broader transition in the business from mass production to personalisation.

Respondent 1c was of the view that:

Notwithstanding the challenging market conditions, our enterprise is growing moderately. The printing business is fiercely competitive, with several recent entrants providing services at lower costs. We have made investments in state-of-the-art equipment that enables our enterprise to provide both traditional and digital printing services to remain competitive.

This suggests that, the owner is using strategic investments in technology and diversification to navigate a competitive market, though the business is subject to external economic issues such as raw material costs as it is growing. Responses from Respondent 1c and 5a indicates varied experiences among printing enterprises. While Respondent 1c credits moderate business growth to smart investments in advanced equipment, while Respondent 5a emphasises the fierce rivalry encountered by smaller printing presses, pointing out their lack of financial capacity to acquire new technology. This disparity highlights a notable digital divide between larger and smaller enterprises, indicating that access to money and the ability to embrace technology are essential factors influencing economic resilience in the printing sector.

Respondent 3b mentioned this:

Growing operating expenses have hindered the financial performance of their printing company. The expenses associated with paper, ink, and other supplies exemplify the increasing costs of raw materials. However, they emphasised that the company remains profitable due to its robust customer retention rate and a steady influx of new clients seeking high-quality services. To maintain competitiveness, they have diversified into the digital printing services sector, resulting in new revenue sources. Economic pressures have led to diminished profit margins; yet, via strategic investments in efficiency-enhancing technologies, the corporation has managed to maintain profitability.

The owner recognises financial challenges but believes that the enterprise's sustainability has been maintained through strategic diversification into digital printing and technology investments. Profits remain solid and secure, but with slow growth.

4.2 Barriers to Green Adoption in Resource-Constrained Printing Enterprises

Speaking on environmental impact of the printing enterprise Respondent 1a said:

I will be honest: I and many others in the sector haven't given the environmental impact the priority it deserves. The process of printing requires a lot of resources by nature, as waste is produced in large quantities from chemicals used in inks and cleaning solutions as well as paper. There have been some efforts to implement environmentally friendly techniques, such as recycling paper and switching to vegetable-based inks, but because these methods are typically more costly, they are still not widely used. While some larger businesses are spearheading the initiative, the expense is prohibitive for small businesses. We recognise that it is an issue that needs to be addressed, but full integration calls for government subsidies or incentives.

This perspective reflects broader industry challenges. Government entities whose policies shape operational capacities and sustainability efforts play a critical role in driving change. This aligns with the assertion by Porter and van der Linde (1995), who contend that enterprises frequently require governmental impetus and financial inducements to embrace environmentally sustainable ideas. Similarly, Agyemang et al. (2020) noted that although certain Ghanaian printing enterprises have initiated the adoption of sustainable methods, comprehensive integration is obstructed by elevated prices and insufficient infrastructure.

This suggests that, Respondent 1a is aware of the problems the printing business poses to the environment, particularly the large amounts of waste and chemicals used. While environmentally friendly alternatives do exist, he admits that smaller printing businesses are unable to widely adopt them due to their high cost. In light of the global movement toward greener practices, his reaction suggests that the industry is falling behind in terms of environmental sustainability, which is cause for serious concern. According to Respondent 1a, government incentives are necessary in order to make environmental improvements practicable for smaller enterprises. Therefore, outside assistance is essential.

Respondent 2a on environmental impact says:

Sincerely, I haven't given the environmental aspect much of my attention in the past. The printing process employs numerous chemicals, resulting in significant wastefulness. The costs associated with adopting more environmentally sustainable practices, such as recycling paper or transitioning to water-based inks, are prohibitive for many colleagues of mine. Despite the challenges, we have endeavoured to implement minor modifications, such as reducing paper waste. To achieve substantial development, a more holistic industry-wide strategy is essential.

It is acknowledged that Respondent 2a's printing business has not prioritised environmental sustainability. She acknowledges the industry's inefficiency and the challenges in adopting more sustainable methods due to budgetary limitations. Similar to Respondent 1a, he asserts that a collective industry initiative is essential for achieving environmental transformation, rather than relying just on the endeavours of specific enterprises. To advance environmental sustainability in the industry, there is a need for structural adjustments and potentially government restrictions.

The transition to more environmentally friendly methods according to Respondent 3a is still in its early phases. She said:

Currently, we recycle leftover paper and try to obtain from sustainable suppliers, but the reality is that ecologically friendly products are typically more expensive, and as a small business, we do not always have the cash to prioritise this.

Although she is an indirect stakeholder, her decisions on adopting sustainable practices are influenced societal expectations and regulatory requirements. She again highlighted: *Vegetable-based inks have been examined; however, their elevated cost and minimal consumer demand for environmentally sustainable printing have resulted in slow adoption. Customers prioritise pricing over sustainability.*

This illustrates the apprehension expressed by Dangelico Pujari (2010) that, notwithstanding evident environmental advantages, the implementation of green innovation is hindered by market demand and cost obstacles. The respondent

demonstrates awareness of sustainable alternatives; yet, implementation is constrained by financial resources. The cost of eco-friendly products, such as vegetable-based inks and recycled paper, serves as a deterrent for certain firms, especially smaller ones. The reconciliation of ecological responsibility with economic viability underscores a significant challenge in the quest for sustainability. Small printing firms frequently encounter the challenge of justifying the elevated costs associated with sustainable operations, as clients tend to prioritise lower pricing over environmentally conscious alternatives. The owner's remark regarding the "lack of consumer demand for environmentally conscious printing" indicates that enhanced educational and incentive programmes are necessary to encourage the adoption of sustainable printing processes.

Respondent 5a who happens to be owner of a press house had this to say:

The environmental impact is increasingly becoming a focal point, although the infrastructure within our society does not sufficiently promote recycling or sustainable practices. Maintaining environmental consciousness is difficult due to insufficient waste management systems and costly sustainable alternatives.

The owner emphasises that local infrastructure constrains printing enterprises' capacity to adopt more environmentally sustainable practices. The elevated expense of sustainable materials and the lack of sufficient waste management systems constitute significant barriers.

Responding to environmental challenges, Respondent 1b also said that:

Environmentally, we are targeting to implement sustainable methods by reducing paper waste and adopting energy-efficient devices. To prevent having too much stock, we have also instituted a policy whereby we print only what is needed.

By using energy-efficient technologies and reducing paper waste, the enterprise is attempting to lessen its effect. Minimising waste and preventing overproduction can be accomplished by on-demand printing.

In response to inquiries on the enterprise's environmental impact, Respondent 3b admitted that:

We are still transitioning towards more sustainable practices. Despite initiating the use of recycled paper and environmentally friendly inks, we have not fully adopted green technology due to their substantial initial expenses.

Incomplete recycling optimisation continues to pose challenges in waste management with remaining paper and chemicals from the printing process. Despite this, the owner is hopeful that the business will eventually transition to a more sustainable model and has plans to install energy-efficient equipment and more extensive recycling programmes. Subsequently, since the organisation has initiated measures to enhance sustainability, it is familiar of its environmental impact. The high cost of implementing environmentally friendly practices remains a barrier, suggesting a gradual shift rather than a dramatic transformation”.

Environmental sustainability has been an increasingly vital element of Respondent 4b’s business model. He had this to say:

To mitigate our environmental impact, we have transitioned to use soy-based inks and recycled paper. Our carbon footprint has been reduced through investments in energy-efficient machinery.

These efforts reflect a strong commitment to sustainable practices, though the respondent acknowledges that broader structural support is necessary to fully meet environmental responsibilities. He emphasised the need for stricter regulations and government incentives to encourage industry wide adoption to eco-friendly methods. In contrast, Respondent 1a admitted that environmental concerns are not a priority in their operations due to budget constraints and limited governmental support. This contrast highlights the influence of firm size and financial capacity on the adoption of green practices, underscoring the importance of targeted policy interventions to help smaller enterprises pursue sustainable goals.

Respondent 2b also had this say on environmental impact:

Although we have made progress toward using digital printing techniques that generate less waste, there is still much work to be done in terms of the environment. The cost of the technology is high, and customers are not always prepared to pay more for environmentally responsible choices.

The business has begun using digital printing techniques, which are more waste-free and efficient than traditional printing methods. However, there are obstacles to overcome, including the high cost of this technology and some customers' reluctance to pay more for environmentally friendly solutions.

Respondent 1c again admitted that:

The printing sector has a big environmental impact, particularly when it comes to trash production. The enterprise printed goods are now packaged in biodegradable materials and printed with water-based inks. Paper and ink cartridge recycling is one of the waste management strategies the business has put in place.

While these initiatives are commendable, the enterprise owner acknowledges that more reasonably priced solutions are required by the sector to implement significant environmental improvements because sustainable materials continue to be expensive for smaller companies. This means that the owner is taking efforts to lessen the environmental effect of their company, they recognise that industry-wide solutions and incentives are required in order to make it more affordable for smaller companies to implement sustainable practices.

On the environmental side, Respondent 2c additionally said:

We have implemented measures to minimise waste, particularly with paper and ink. Because we are less damaging to the environment, we utilise soy-based inks and recycled paper. But we also prioritise energy consumption, utilising more energy-efficient gear, so it's not just about materials.

This is an indication that they have made more significant strides by adopting eco-friendly materials and energy-efficient machinery, showing a proactive approach to sustainability.

4.3. The Social Role and Struggles of Printing Businesses in Accra

On social responsibility Respondent 1a emphasised:

I believe we are doing fairly well, especially in terms of job creation. Despite the economic pressures, printing presses still provide a significant number of jobs, particularly for skilled labour such as machine operators, designers, and even apprentices. Many of us support local communities by engaging in charity work or offering printing services at discounted rates for educational institutions and NGOs. However, there is more that can be done.

This response illustrates the acknowledgement of employees as essential stakeholders whose welfare directly influences business sustainability. Respondent 1a added:

We could improve by providing equitable salaries and guaranteeing job stability, particularly for casual workers who frequently lack contracts or benefits.

This perspective aligns with Carroll's (1999) assertion that genuine CSR encompasses not only community donations but also equitable treatment of employees. Acheampong (2021) similarly noted that although Ghanaian printing companies contribute socially, many fail to offer steady work and sufficient labour rights. Respondent 1a's statement underscores the printing industry's contribution to job creation, a key component of sustainable economic development. His focus on skilled labour indicates that the industry offers significant job prospects, especially in technical and creative positions. Nonetheless, the issues concerning equitable compensation and employment stability highlight sectors in which the industry may enhance its practices. While his mention of charitable activities and community support reflects a degree of social responsibility, the acknowledgement of on-going deficiencies in worker protections suggests that more comprehensive efforts are needed to achieve true social sustainability.

Regarding social responsibility, Respondent 2a claims:

We have endeavoured to offer employment opportunities to youth in our locality. We collaborate with technical schools and provide apprenticeship programmes to teach students printing skills. But we also have trouble keeping employees since we cannot always provide benefits or pay that are competitive.

From a stakeholder perspective, this highlights a gap in participatory sustainability, particularly the exclusion of employees from decision making, which may hinder long term resilience. Furthermore, Respondent 2a added:

Employees generally perceive this as a precursor to superior opportunities. We actively engage with the community; yet, our primary focus at present is to sustain our commercial operations.

The essence of Respondent 2a's social responsibility lies in skill development and employment creation, particularly for youth via apprenticeship programmes. While commendable, the industry's social responsibility seems to be restricted by financial constraints due to challenges in offering competitive compensation and benefits. Her decision for economic survival over community involvement illustrates the challenging equilibrium that small firms sometimes navigate between profitability and social contributions.

Regarding social responsibility, Respondent 3a said this:

I want to engage with the community mostly by offering educational materials at reduced prices and providing discounts to local non-profit organisations. We support local artists by providing affordable printing services for their exhibitions. Nonetheless, it has proven challenging for us to fulfil these social responsibilities while striving to achieve financial stability. Given the minimal margins, achieving equilibrium between profitability and accountability is difficult.

The social responsibility of this printing press is reflected in its engagement with the community and its support for local initiatives, including non-profit organisations and artists. While offering subsidised services to these organisations reflects a genuine commitment to the community, the owner emphasises the difficulty of sustaining such initiatives against financial challenges faced by the company. This highlights a significant issue within the printing industry: the tension between fulfilling corporate social responsibility (CSR) goals and maintaining profitability. Even when there is an intention to contribute positively to society, allocating money to social initiatives is challenging due to budgetary limitations. Smaller enterprises aspiring to assist their communities, yet constrained by their financial survival, often encounter this predicament.

On social issues, Respondent 4a also said this:

The creation of jobs and community involvement are at the core of our social duty. Although we hire and train locals, our slow expansion has resulted in little employment creation. As part of our long-term commitment, we also teach school children about the print industry through our involvement in educational outreach programmes.

This indicates that, despite minimal job creation resulting from the industry's stagnant growth, social responsibility is addressed through local employment and educational initiatives. The sector is perceived as under strain; yet, it is endeavouring to achieve a balance among social contributions, environmental issues, and economic viability.

He explained:

By offering internships and apprenticeships to the upcoming generation, we aim to make a social contribution. While we are committed to philanthropy, sustaining these activities can be arduous when the company struggles to achieve profitability.

The business offers training opportunities for students via apprenticeships and internships; however, the scope of these programmes is limited by financial constraints. This statement stresses the difficulties of unifying social and environmental responsibilities with economic sustainability, particularly for smaller firms.

Respondent 1b expressed the concern social issues by saying:

We see social responsibility as principal. We endorse community events and provide printed resources to non-profits and educational institutions, which not only benefits the community but also strengthens our reputation.

The enterprise contributes printed products to non-profit organisations and educational institutions while endorsing community initiatives. The enterprise's endeavour to maintain sustainability while keeping a robust social presence is evidenced by its dual emphasis on economic performance and community engagement.

He however concluded:

As a neighbourhood enterprise, we value social responsibility and make an effort to sponsor and provide discounts to nearby small businesses and schools. It is our way of giving back, but the resources we have are limited, so we can only do so much.

This means through discounts and sponsorships the enterprise helps small businesses and local schools. Their financial resources limit their ability to give back to the community, despite their commitment to doing so.

Respondent 3b demonstrated a notable commitment to social responsibility, especially in providing employment opportunities for community inhabitants:

At this time, the enterprise employs more than 50 people, most of them come from underprivileged families.

Additionally, the owner participates in community outreach initiatives, such as providing printed materials to nearby schools and providing apprenticeships to young people who want to learn how to print. The owner recognised that their social responsibility efforts are commendable, although budgetary constraints sometimes limit the extent of these endeavours. The owner seems to be a loyal advocate for community engagement and prioritises social responsibility, particularly in skill development and job creation. However, the financial constraints of running the organisation impose certain limitations on the scope of these initiatives.

Respondent 4b on the other hand has embraced a pragmatic approach to social responsibility by actively endorsing programmes that promote knowledge and skill enhancement. He said:

For those who want to become print technicians, we frequently work with nearby vocational schools to provide training courses and internships. We also support neighbourhood initiatives by giving away free printing services.

The owner prioritises education and skill development as crucial domains for fostering a positive societal influence. While dedicated to their social impact, they recognise the constraints of their potential achievements regarding employment in an evolving sector.

Respondent 1c has a strong sense of community involvement when he said:

I facilitate the education of youth from underprivileged backgrounds by providing scholarships in printing and design industries. I have collaborated with community organisations to provide affordable printing services for social entrepreneurs and nonprofits.

This reflects a belief in the importance of community as stakeholders, enhancing a business's social license to operate by fostering long term goodwill. His dedication to community service ab deduction indicates a holistic approach to corporate sustainability, aligning business objectives with local social initiatives.

Conversely, Respondent 2a emphasises economic sustainability, providing apprenticeships while recognising that constrained resources hinder broad community engagement. The varying approaches underscore the impact of organisational ideals and current economic realities on the extent of social contributions. Even organisations dedicated to social impact may find it challenging to maintain such projects within budgetary constraints.

On social issues Respondent 2b expressed this:

We are highly committed to maintaining social responsibility. We offer training programmes to aid young individuals aspiring to excel in the printing business in honing their skills. Furthermore, we provide excess printed materials to non-governmental groups and educational institutions.

Their corporate strategy prioritises social responsibility, highlighting skill development and educational support to demonstrate a genuine commitment to community welfare. This comment demonstrates a forward-thinking viewpoint on sustainability that emphasises the significance of long-term impacts.

Lastly, Respondent 3b revealed:

The increasing digitisation of the printing industry has led to variations in the financial performance of printing companies in recent years. Despite a decline in demand for conventional printing services, growth is observed in specialised sectors such as packaging and large format printing. Nevertheless, escalating operational

expenses especially the rising costs of raw materials such as paper and ink are exerting pressure on profit margins.

Deductively, Respondent 3b highlights the disparate financial prospects for printing enterprises. The transition to digital alternatives has diminished the market for conventional printing services; yet, niche sectors such as packaging still present opportunities for growth. However, escalating raw material expenses exert pressure on profitability, suggesting that printing firms must identify innovative strategies to remain operational.

On environmental impact, printing presses have improved significantly in terms of adopting eco-friendly practices. Respondent 3b said:

We have been using recycled paper and eco-friendly inks, but the cost of these alternatives remains higher.

This means that even with technological advancement, cost of these materials may prevent smaller presses from adopting them widely.

As far as social responsibility goes, Respondent 3b thinks printing enterprises are doing a good job in their communities, particularly when it comes to educational programmes. She believes there is still space for development when it comes to increasing environmental consciousness in the sector. As an example in her words:

We assist local schools by providing free printing services for educational materials. However, additional efforts might be made, especially with the education of the sector on environmental sustainability.

The interview responses collectively illustrate the diverse opportunities and problems faced by printing enterprises in their efforts to balance social responsibility, environmental impact, and economic performance. Although several enterprises have successfully integrated sustainability into their operations, others are constrained by financial limits, highlighting the industry's broader requirement for structural assistance.

5. Summary of Key Findings

The study examined the economic performance, environmental sustainability, and social responsibility of printing companies in Accra through the lens of the Triple Bottom Line (TBL) framework. The findings indicated a dynamic interaction among the three sustainability pillars, with economic considerations frequently prevailing in decision-making. Despite notable initiatives in social responsibility and a restricted implementation of ecologically sustainable methods, considerable challenges persist. Below are the findings;

5.1 Economic performance of Printing Enterprise

The printing industry is currently navigating a challenging financial landscape, marked by rising material costs, inflation, and fluctuating currency values. These economic pressures have squeezed profit margins, as the prices of essential supplies like paper, ink, and energy continue to climb. At the same time, the demand for traditional printing services has dwindled, driven by the growing preference for digital alternatives. This shift has forced many smaller printing enterprises to pivot toward niche markets, such as customised stationery and packaging, in search of stability.

Despite these hurdles, opportunities exist in specialised printing sectors, including custom branding materials, which present new revenue streams for businesses agile enough to adapt. However, competition in these areas is intensifying, making differentiation crucial. Financial sustainability remains a significant struggle, particularly for small and medium-sized printing enterprises that lack the capital to invest in modern, efficient technologies—placing them at a disadvantage against larger competitors.

To stay afloat, many firms are adopting cost-cutting measures, such as outsourcing portions of production and reducing labour expenses. These strategies aim to mitigate overhead costs while maintaining competitiveness in an increasingly demanding market. The path forward requires resilience, innovation, and a willingness to embrace change in an industry undergoing profound transformation.

5.2 Environmental Sustainability in Printing Enterprises

The printing industry faces significant challenges when it comes to environmental sustainability, as many stakeholders recognise its heavy reliance on chemicals and its substantial waste output. While awareness of these issues is growing, the adoption of greener practices remains slow, particularly due to financial and structural barriers.

A major obstacle is the high cost of sustainable materials, such as recycled paper and vegetable-based inks, coupled with a lack of government incentives. Larger corporations

have begun integrating some eco-friendly measures, but these options are often too expensive or inaccessible for smaller businesses. Meanwhile, gradual improvements—like energy-efficient equipment and reduced paper waste—are being implemented, though broader structural support is needed to accelerate adoption.

Despite growing environmental consciousness, financial constraints prevent many small and medium-sized enterprises from investing in sustainable alternatives. Some have taken modest steps, such as recycling paper or switching to water-based inks, but these efforts remain fragmented without stronger industry-wide initiatives and funding.

Compounding these challenges is the inconsistent infrastructure in certain regions, where inadequate waste management systems and a lack of financial incentives hinder progress. Additionally, consumer behaviour plays a crucial role—since buyers often prioritise cost over sustainability, demand for eco-friendly printing remains limited. This trend further slows the industry's shift toward greener practices, underscoring the need for systemic changes, policy support, and greater consumer education to drive meaningful environmental progress

5.3 Social Responsibility of Printing Enterprises

Despite economic challenges, the printing sector remains a vital source of employment, particularly in skilled roles such as machine operators and designers, contributing to local job creation as part of its social responsibility. Many printing enterprises further strengthen their community ties by offering free or discounted services to non-profits, schools, and local events—initiatives that enhance their social reputation while supporting meaningful causes.

Workforce development is another key focus, with apprenticeship and training programmes providing valuable opportunities, especially for young professionals entering the field. However, financial limitations often restrict the scale and accessibility of these programmes. At the same time, concerns persist around fair salaries and job security, particularly in smaller firms where casual workers frequently lack formal contracts or benefits, highlighting gaps in worker protections.

As the industry navigates financial pressures, there is a growing need to better balance profitability with social impact. While many businesses contribute positively to their communities, those facing economic strain must find sustainable ways to maintain these efforts without compromising their viability. Strengthening labour conditions, expanding skill-building initiatives, and fostering deeper community engagement could further solidify the sector's role as a socially responsible industry.

6. Conclusions

The economic, environmental, and social aspects of sustainability in Ghana's printing sector present both challenges and opportunities. Enterprises face economic pressure from rising material costs, inflation, and shifting consumer demands. The decline in standard printing services has compelled many to adapt by moving into niche markets such as custom branding and packaging. However, limited financial resources constrain smaller firms from adopting advanced technologies, reducing their competitiveness and long-term sustainability.

While larger printing enterprises are leading in environmental initiatives—such as using recycled paper and vegetable-based inks—SMEs struggle to follow due to budget constraints and limited infrastructure. The industry's shift towards eco-friendly practices is further hindered by low consumer demand for sustainable printing. Financial incentives and stronger regulatory support are therefore essential to encourage broader adoption of environmentally responsible practices.

Socially, the sector plays an important role in employment generation and community engagement. Many enterprises contribute to skill development through apprenticeships and training, and support community initiatives involving non-profits and educational institutions. However, concerns persist regarding fair compensation, job security, and working conditions, particularly for casual workers in smaller firms. Achieving sustainability in the printing industry requires an integrated approach that balances economic viability, environmental stewardship, and social responsibility. Strategic investments, policy support, and industry-wide collaboration are crucial for driving sustainable growth, enhancing job creation, and minimising environmental impact.

This study provides critical insights into how printing enterprises in Accra—particularly SMEs—navigate the complexities of sustainability. Grounded in the Triple Bottom Line and Stakeholder Theory, it highlights the need for responsive, collaborative, and policy-driven strategies to secure the long-term resilience of the sector.

7. Recommendations

7.1 Economic Sustainability

To enhance economic resilience, printing enterprises should pursue bulk procurement agreements and supplier collaborations to reduce material costs. Diversifying into high-demand sectors such as digital printing, packaging, and custom branding can also help offset declining demand for traditional print services. SMEs are encouraged to seek financial assistance or enter strategic alliances that support investment in

advanced technologies to improve efficiency and lower operational costs. Government and industry associations should facilitate such efforts by introducing financial support schemes aimed at modernising SME operations. Additionally, while cost-cutting remains essential in a competitive environment, it must not compromise product quality or employee well-being. Sustainable approaches—such as workflow optimisation and lean management—can reduce costs while preserving staff morale and service standards. By balancing innovation, prudent spending, and social responsibility, enterprises can remain competitive and financially stable.

7.2 Environmental Sustainability

To promote environmental sustainability, the study recommends that government agencies introduce incentives—such as tax relief and subsidies—to encourage eco-friendly practices. Industry stakeholders must also collaborate to improve access to sustainable inputs like recycled paper and vegetable-based inks.

SMEs should adopt digital workflows and energy-efficient technologies to reduce paper consumption and operational waste. These strategies support both environmental and economic objectives over the long term. Public awareness campaigns are needed to stimulate consumer demand for environmentally responsible printing. Concurrently, investments in recycling and waste management infrastructure are essential for fostering sustainable industry-wide practices. Finally, comprehensive environmental standards should be established to ensure consistency across enterprises of all sizes. Such frameworks will ensure that all firms contribute meaningfully to long-term ecological sustainability.

7.3 Social Sustainability

To improve social sustainability, printing enterprises should enhance vocational training and apprenticeship programmes, particularly for young professionals. SMEs are encouraged to partner with educational institutions and government agencies to secure support for skills development initiatives. In addition, the enforcement of fair labour standards is essential to ensure equitable wages, job security, and employee benefits, especially in SMEs where informal practices are more prevalent. Enterprises must also continue to engage in community-oriented activities even during economic downturns. Industry associations should support this effort by offering policy frameworks that promote fair employment practices without compromising business viability.

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