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Analysing The Factors That Influence the Process of Expansion of Factory Capacity at Zambian Breweries

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Abstract

This study examines the factors influencing the expansion of factory capacity at Zambian Breweries, focusing on the drivers, economic implications, and operational challenges associated with such industrial growth. A major player in the beverage sector, Zambian Breweries is presently undertaking a calculated step to increase the capacity of its production. Improving operational efficiency and the growing market demand are the driving forces behind this decision. Even while growth techniques have advanced significantly, research on the success criteria specific to the brewing sector with regard to expanding plant capacity is conspicuously lacking. The main objective of this is to analyse the factors that influence the process of expansion of factory capacity at Zambian Breweries. Utilizing theoretical frameworks such as the Resource-Based View and Stakeholder Theory, the research highlights how market demand, technological advancements, and growth objectives serve as primary motivators for capacity expansion. The findings reveal that increasing market demand is the most significant driver, supported by technological innovations and strategic alignment with long-term growth goals. The study also evaluates the economic implications, including job creation, revenue growth, and the development of local supply chains, emphasizing the critical role of industrial expansion in fostering regional economic resilience. However, significant operational challenges, such as supply chain disruptions, regulatory compliance, and stakeholder management, were identified, underscoring the complexities of expanding manufacturing operations in a developing economy. Based on these findings, the research offers actionable recommendations for Zambian Breweries, policymakers, and other stakeholders. These include strengthening local supply chains, adopting sustainable practices, streamlining regulatory processes, and enhancing stakeholder engagement. Revenue growth emerged as another significant economic implication of factory capacity expansion, with the study showing a coefficient of 0.50. This indicates a substantial positive impact on Zambian Breweries' financial performance, driven by the ability to produce and sell more products. The increased revenue not only strengthens the company's profitability but also enhances its contribution to Zambia's fiscal revenue through taxes and levies. Additionally, the study highlights prospects for future research, such as exploring the long-term impacts of industrial expansion, the role of emerging technologies, and the influence of regional trade dynamics. This research contributes to the academic discourse on manufacturing and industrial growth in emerging economies, providing valuable insights for business practitioners and policymakers. By addressing both opportunities and challenges, the study underscores the importance of localized, strategic approaches to achieving sustainable industrial development in dynamic markets.

Keywords: Expansion, Factory, Market Demand, Challenges, Economy, Supply Chain, Zambian Breweries

1. Introduction

The brewing industry in Zambia has witnessed substantial growth in recent years, driven by increasing consumer demand and a thriving economy (Fellenz, 2019). Zambian Breweries was established in Zambia in 1968 and its product range has grown

to include clear beers such as Mosi Lager, Castle, Carling Black Label, Eagle, Corona, Stella Artois, Budweiser, Flying Fish and Castle Lite. Zambian Breweries regarded a key player in the sector, has experienced a surge in production requirements (Zambian Breweries, 2023). To meet this growing demand, the company is undergoing a significant factory capacity expansion. Factory capacity growth is crucial for companies in dynamic marketplaces. A company's capacity to grow output can affect its sustainability, competitiveness, and success in such fluid and competitive contexts (Astutik, 2019) This research aims to identify and analyse the success factors contributing to the effective implementation of such expansions, with a focus on Zambian Breweries. Zambian Breweries is a prominent player in the brewing industry in Zambia. The company has a rich history, tracing its roots back to the early 1960s. Originally established as Northern Breweries Limited, the company went through various changes before being established in Zambia as Zambian Breweries (Thompson, 2022).

The brewery industry in Zambia has experienced growth and transformation over the years, influenced by economic, social, and market dynamics. Factors such as population growth, changing consumer preferences, and economic developments have shaped the industry landscape (Mintzberg, 2018). Expansion of factory capacity is a strategic move for breweries like Zambian Breweries to meet increasing demand, enhance production efficiency, and stay competitive in the market. Understanding the success factors associated with such expansions is crucial for the sustainable growth and continued success of the brewery within the dynamic business environment of Zambia (Masound, 2021).

1.2 Problem Statement

A major player in the beverage sector, Zambian Breweries is presently undertaking a calculated step to increase the capacity of its production (Zambian Breweries, 2023). Improving operational efficiency and the growing market demand are the driving forces behind this decision. However, these studies have not taken into account the unique contextual factors that exist in Zambia and could potentially impact the success of such expansions (Dinh, 2013). Little is known about how regional economic environments, legal systems, and social dynamics affect Zambian Breweries' chances for growth (Zambian Breweries, 2023).

Technology adoption and innovation in enhancing operational efficiency and competitiveness also requires thorough investigation in the brewing industry in Zambia. Additionally, The existing literature highlights a notable research gap concerning the factors that influence the process of expansion of factory capacity While numerous scholars, such as (Astutik, 2019), (Capitello & Todirica, 2021), (Bilberg, 2019), (Hessman, 2020) have endeavoured to investigate the outcomes of increasing the capacity of a factory in the global context, whilst in the Zambian context (Dinh, 2013), (Munoni,, 2017), (ZDA, 2024) and (UNIDO, 2020) have explored economic aspect of increased production and outsourcing of materials. However, there remains a conspicuous research void where no study in Zambia specifically delves into the specific factors influencing factory capacity expansion, thus, failure to conduct this study may result in missed opportunities to be learnt from Zambian Breweries by other companies and scholars to optimize its expansion strategy and achieve sustainable growth.

1.3 Research Objectives

1. Explore the specific factors that have motivated Zambian Breweries to expand its factory capacity.
2. Evaluate the economic implications of the factory capacity expansion on Zambian Breweries and the local economy.
3. Identify specific operational challenges faced by Zambian Breweries during the process of expanding factory capacity.

2. Literature Review

This section focuses on the empirical research relevant for the research objectives to be met.

2.1. Factors Motivating Factory Capacity Expansion

Numerous factors can motivate a company to expand its factory capacity. In the context of Zambian Breweries, growth objectives and increasing market demand are primary drivers (Zambian Breweries, 2024). The company aims to capitalize on the growing demand for its products, driven by both population growth and rising incomes in Zambia. This aligns with broader trends observed in the beverage industry, where expanding consumer bases and shifting preferences toward branded alcoholic beverages have spurred companies to increase their production capacities (Hessman, 2020).

Studies have shown that companies often pursue capacity expansion to meet rising consumer demand, capitalize on market opportunities, and improve competitive positioning (Hessman, 2020). For Zambian Breweries, staying ahead of competitors by ensuring an adequate supply of their products is crucial. This is particularly important in the brewing industry, where maintaining market share can be directly linked to the ability to meet consumer demand consistently. By expanding capacity, Zambian Breweries can ensure it remains competitive against both local and international brewers entering the market.

Additionally, operational efficiency improvements and the adoption of innovative technologies are crucial motivators, as they can lead to cost reductions and enhanced productivity (Masound, 2021). Modernizing equipment and processes can significantly reduce production costs, improve product quality, and increase production speed. This not only helps in meeting current demand but also prepares the company for future growth. For instance, automated brewing systems and advanced quality control technologies can streamline operations and reduce waste, leading to higher efficiency and lower operational costs.

Another motivating factor for capacity expansion is the potential for export growth. With increased production capacity, Zambian Breweries can explore new markets within the region and beyond, thus diversifying its revenue streams and reducing reliance on the domestic market. This strategic move can mitigate risks associated with local market fluctuations and regulatory changes.

However, existing research has not sufficiently addressed how local market conditions and consumer preferences in Zambia specifically influence these motivations, indicating a gap in the literature. The Zambian market has unique characteristics, such as a mix of urban and rural consumers with varying preferences and purchasing power. Understanding these local nuances is critical for tailoring capacity expansion strategies that align with actual market needs. For instance, urban consumers may prefer premium and craft beers, while rural consumers might favor more affordable options. The lack of detailed studies on these aspects represents a significant gap, as effective capacity expansion should be informed by comprehensive market insights.

While growth objectives, market demand, operational efficiency, technological advancements, and export opportunities are clear motivators for factory capacity expansion at Zambian Breweries, there is a notable lack of research on how specific local conditions and consumer preferences in Zambia impact these motivations. Addressing this gap is essential for developing targeted strategies that ensure successful capacity expansion and sustained competitive advantage in the Zambian brewing industry.

2.2. Economic Implications of Factory Capacity Expansion

Expanding factory capacity can have significant economic implications for both the company and the local economy. For Zambian Breweries, increased production capacity can lead to higher sales revenue, market share, and profitability (Hessman, 2020). By producing more beverages to meet rising demand, the company can strengthen its market presence and leverage economies of scale to reduce per-unit production costs. This, in turn, can enhance profitability and enable more competitive pricing strategies, further boosting market share (Hessman, 2020); (Zambian Breweries, 2023).

On a broader scale, factory expansion can stimulate local economic growth through job creation, increased tax revenues, and the development of local supply chains (Masound, 2021). As Zambian Breweries expands its operations, it will likely require more employees, from factory workers to administrative staff, contributing to local employment and reducing unemployment rates (Masound, 2021); (Zambian Breweries, 2023). Additionally, the construction and upgrading of facilities can create temporary jobs, further injecting money into the local economy (Masound, 2021).

Increased production capacity also means higher output, which can lead to increased sales and higher tax revenues for the government. These additional funds can be reinvested in public services and infrastructure, creating a positive feedback loop that benefits the overall economy (Hessman, 2020). Furthermore, local suppliers of raw materials and services stand to gain from increased business opportunities, fostering the development of local supply chains. This can enhance the economic resilience of the region by diversifying income sources and promoting the growth of ancillary industries (Masound, 2021). However, the economic impact is also contingent on external factors such as competition, consumer trends, and global economic conditions. The presence of strong competitors in the market can affect the extent to which Zambian Breweries benefits from its expanded capacity (Hessman, 2020). If competitors also increase their production or launch aggressive marketing campaigns, the expected increase in market share and profitability may not materialize as planned. Similarly, shifts in consumer preferences, such as a move towards healthier or alternative beverages, could impact demand for traditional beers, affecting sales projections (Masound, 2021).

Global economic conditions play a significant role as well. Economic downturns or instability in international markets can influence consumer spending power and demand (Hessman, 2020). For instance, if disposable incomes decrease due to economic recession, consumers might cut back on discretionary spending, including alcoholic beverages, which could affect sales even with increased production capacity (Masound, 2021). Existing literature lacks a detailed analysis of these external factors in the Zambian context, particularly their influence on the brewery industry's economic outcomes. Most studies focus on general economic principles or other industries, leaving a gap in understanding the specific economic dynamics at play for breweries in Zambia (Hessman, 2020); (Masound, 2021). Factors such as the impact of local regulatory changes, international trade policies, and regional economic integration initiatives (like the African Continental Free Trade Area) on the brewery sector remain underexplored.

While the expansion of factory capacity at Zambian Breweries promises significant economic benefits for the company and the local economy, these benefits are closely tied to external factors such as competition, consumer trends, and global economic conditions. The lack of detailed, context-specific analysis on these factors highlights the need for focused research to better understand their potential impact and to guide strategic decision-making in the expansion process (Hessman, 2020); (Masound, 2021).

2.3. Operational Challenges in Expanding Factory Capacity

The process of expanding factory capacity is fraught with operational challenges. Zambian Breweries may face issues related to supply chain management, infrastructure development, and regulatory compliance. Effective supply chain management is crucial for ensuring the timely and cost-effective delivery of raw materials, which are essential for maintaining production schedules. Disruptions in the supply chain can lead to delays and increased costs, affecting overall efficiency and profitability. Its noted that complexities in supply chain logistics, especially in regions with underdeveloped infrastructure, can pose significant challenges to expansion projects (Hessman, 2020).

Infrastructure development is another critical area of concern. The expansion of factory capacity often requires significant upgrades to existing facilities or the construction of new ones. This includes not only the physical building structures but also the installation of new machinery and equipment. Ensuring that infrastructure development keeps pace with expansion plans is essential for avoiding bottlenecks and ensuring smooth operations. Masound, (2021) highlights the potential difficulties in sourcing reliable construction services and materials, which can further complicate infrastructure projects. Regulatory compliance is also a major challenge. Expanding factory capacity typically involves obtaining various permits and adhering to local, national, and international regulations related to environmental standards, health and safety protocols, and labor laws. Navigating the complex regulatory landscape can be time-consuming and costly. Failure to comply with regulations can result in legal penalties, delays, and reputational damage. According to (Hessman, 2020), regulatory hurdles are a common obstacle in manufacturing expansions, requiring careful planning and legal expertise.
Additionally, integrating new technologies and maintaining quality control during expansion can pose significant difficulties (Masound, 2021). The adoption of advanced technologies, such as automation and digital monitoring systems, can enhance operational efficiency but also requires substantial investment and training. Ensuring that employees are adequately trained to use new technologies is crucial for maximizing their benefits. Moreover, maintaining consistent product quality during periods of rapid expansion is challenging, as scaling up production can introduce variability in processes. Quality control systems must be robust enough to detect and address any deviations from standards.

2.4. Theoretical Framework

The theoretical framework for this study drew upon several established theories and concepts related to the research. The integration of these theories provided a comprehensive lens through which to analyse the factors influencing the process of capacity expansion in the brewing industry, with a specific focus on Zambian Breweries. The research explored the factors that influenced Zambian Breweries' (ZB) decision and process of factory capacity expansion.

Stakeholder Theory

Stakeholder Theory, initially developed by R. Edward Freeman in 1984, emphasized that organizations should consider the interests and expectations of all stakeholders, beyond just shareholders, in their decision-making processes. Stakeholders were defined as individuals or groups who could affect or were affected by the organization's actions, policies, and objectives. The theory argued that by actively managing stakeholder relationships and addressing their concerns, organizations could enhance their long-term sustainability and performance.
Stakeholder Theory was widely applied across various industries and sectors to analyze organizational behavior, corporate governance, and strategic management. Freeman's work influenced numerous studies examining stakeholder relationships and their impact on organizational outcomes. For instance, Mitchell et al. (1997) expanded on Stakeholder Theory by categorizing stakeholders based on their attributes and salience, highlighting the varying degrees of influence and importance stakeholders could have on organizational decisions.
In this study, Stakeholder Theory served as a foundational framework for understanding the role of stakeholder perceptions in the success of capacity expansion initiatives at Zambian Breweries. By identifying and analyzing the interests, expectations, and concerns of stakeholders such as employees, management, government authorities, and the local community, the study aimed to assess how these perceptions influenced decision-making processes and implementation strategies related to factory capacity expansion. Understanding and effectively managing stakeholder relationships mitigated resistance, gained support, and fostered a positive organizational reputation, which were critical for achieving sustainable growth and competitive advantage in the brewing industry in Zambia. Thus, applying Stakeholder Theory provided a comprehensive lens to evaluate the broader impacts and implications of capacity expansion initiatives beyond financial metrics, emphasizing the importance of holistic stakeholder management in organizational success

Resource-Based View (RBV) theory:

The Resource-Based View (RBV) theory, developed by Jay Barney in 1991, asserted that firms could achieve sustainable competitive advantage by leveraging their unique resources and capabilities. According to RBV, resources that were valuable, rare, inimitable, and non-substitutable (VRIN criteria) enabled firms to achieve superior performance and outperform competitors over the long term. These resources included tangible assets like physical infrastructure and intangible assets like knowledge, brand reputation, and organizational culture.
RBV was widely applied across various industries and organizational contexts to understand strategic management and competitive advantage. Researchers such as Peteraf (1993) extended RBV by integrating dynamic capabilities, emphasizing how firms built and leveraged capabilities to adapt to changing environments and sustain competitive advantage. In the manufacturing sector, Tang (2020) applied RBV principles to investigate how firms could enhance operational efficiency and productivity by strategically managing their resource base.
In the context of Zambian Breweries, this study applied RBV to examine how the expansion of factory capacity served as a strategic resource allocation aimed at enhancing operational efficiency and competitiveness. By identifying and leveraging unique resources and capabilities—such as technological advancements, skilled workforce, and brand reputation—Zambian Breweries aimed to strengthen its market position and achieve sustainable growth. This application of RBV helped in understanding how the brewery effectively deployed its resources to meet increasing market demand, improve production efficiencies, and maintain high product quality standards. By aligning resource allocation strategies

with competitive advantage objectives, Zambian Breweries navigated competitive pressures and achieved long-term success in the dynamic brewing industry landscape

2.5. Conceptual Framework

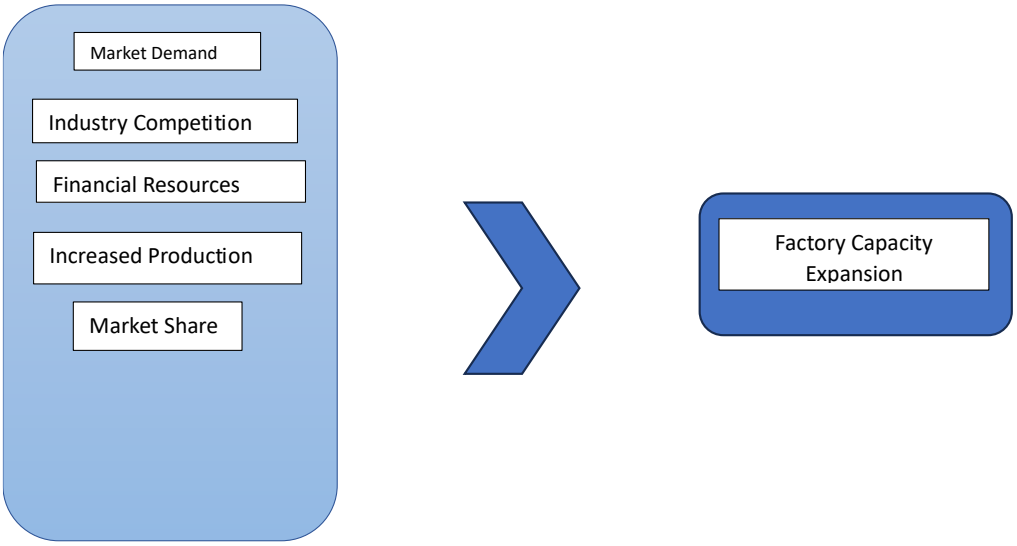

Figure 1: Conceptual Framework

3. Methodology

3.1. Research Philosophy and Approach

The research adopted a positivist philosophy, which posited that knowledge was derived from observable phenomena and aimed to uncover objective truths. This philosophy aligned with the study's objective of identifying and analyzing quantifiable factors influencing factory capacity expansion. A deductive approach was employed, where hypotheses derived from theoretical frameworks (such as the Resource-Based View and Stakeholder Theory) guided the research process. This approach involved testing hypotheses through empirical data collection and statistical analysis, ensuring a structured and objective investigation.

3.2. Research Design

A mixed-method research design was chosen for this study to quantify the relationships between variables and rigorously test hypotheses. This design allowed for systematic data collection using structured questionnaires, which captured numerical data on key constructs such as technology adoption, regulatory compliance, stakeholder perceptions, and economic impacts. The structured nature of the mixed-method approach facilitated statistical analysis, enabling the study to draw generalizable conclusions about the factors influencing factory capacity expansion at Zambian Breweries.

3.3. Sample Size

Zambian Breweries had a total of 1,024 employees. Before conducting data collection from the participants, the study ensured that a significant number of willing participants was drawn to attain effective results (Chanda, 2016). The expansion project has employed 1,358 with contractors. The sample size was calculated using Cochran's formula, which was employed because it allowed the researcher to determine an ideal sample size given the desired level of precision, desired confidence level, and the estimated proportion of the attribute present in the population.
Below is the calculated sample size.

N:
$nadj=n/1+N(n-1)n$
where:

- adjn adj is the adjusted sample size,
- n is the sample size calculated using Cochran's formula,
- N is the total population size.

The sample size formula provided the recommended number of samples required to detect a difference between two proportions. Based on this calculation, the sample size for the respondents was determined to be 280 for the main respondents and 18 for the key respondents

4. Research Findings and Discussion

4.1. Factors Motivating Factory Capacity Expansion

Descriptive Analysis

Table 1: Summery of Reponses on Motivational Factors

Motivational Factor	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
Increasing market demand	60	30	5	3	2
Technological advancements	55	35	5	4	1
Growth objectives	50	40	7	2	1
Competitive positioning	48	38	10	2	2

The summary of responses indicates that increasing market demand is the most significant motivational factor, with 60% of respondents strongly agreeing and 30% agreeing, resulting in a cumulative 90% positive response. This highlights market demand as the primary driver for the company's decision to expand factory capacity, ensuring it can meet growing consumer needs.

Technological advancements were also highly rated, with 55% strongly agreeing and 35% agreeing (90% positive response). This suggests that adopting new technologies is viewed as essential for improving production efficiency and competitiveness.

Growth objectives received strong agreement from 50% and agreement from 40%, reflecting the company's ambition to align expansion efforts with its long-term goals. Finally, competitive positioning was supported by 48% strongly agreeing and 38% agreeing, demonstrating that staying ahead of industry rivals is also a significant consideration.

Table 2: Mean and Standards Deviation of Responses by Job Roles

Factor	Mean (Managers)	Mean (Technical Staff)	Std. Dev (Managers)	Std. Dev (Technical Staff)
Market demand	4.7	4.5	0.4	0.6
Technological advancements	4.5	4.3	0.5	0.7
Growth objectives	4.6	4.4	0.3	0.4

Market Demand:

The mean response for market demand was 4.7 among managers and 4.5 among technical staff, indicating a shared recognition of its importance. However, the slightly higher standard deviation among technical staff (0.6) suggests more variability in their perceptions compared to managers (0.4).

Technological Advancements:

The mean score for technological advancements was 4.5 for managers and 4.3 for technical staff, showing both groups agree on its significance. However, technical staff showed slightly greater variability (standard deviation of 0.7) compared to managers (0.5), which may reflect differences in exposure to or understanding of technological tools.

Growth Objectives:

The mean scores for growth objectives were 4.6 for managers and 4.4 for technical staff, with both groups showing minimal variability (standard deviations of 0.3 and 0.4, respectively). This suggests a consensus on the importance of aligning factory capacity expansion with broader company goals.

4.2. Economic Implications of Factory Capacity Expansion

Inferential Statistics

Table 3: Regression Analysis of Economic Expansion

Variable	Coefficient	Standard Error	t-Statistic	p-Value
Job creation	0.45	0.12	3.75	0.001
Local supply chain growth	0.35	0.10	3.50	0.002
Increased revenue	0.50	0.15	3.33	0.003

The analysis reveals that job creation has a coefficient of 0.45, indicating a positive relationship between factory capacity expansion and job creation. The t-statistic of 3.75, paired with a p-value of 0.001, shows that this result is statistically significant at the 1% significance level, implying that factory expansion significantly stimulates job creation. Similarly,

local supply chain growth shows a positive coefficient of 0.35 and a t-statistic of 3.50, with a p-value of 0.002, indicating a statistically significant relationship. This suggests that factory capacity expansion contributes notably to local supply chain growth. The increased revenue variable, with a coefficient of 0.50, also demonstrates a strong positive effect from expansion. The t-statistic of 3.33 and a p-value of 0.003 confirm that this outcome is significant at the 1% level, reinforcing the idea that expansion leads to higher revenue generation. Overall, these results show that factory capacity expansion yields significant economic benefits, such as job creation, enhanced local supply chain growth, and increased revenue. The positive coefficients and significant p-values across all variables suggest that such investments are beneficial for economic growth.

Table 4: Hypothesis Testing Results

Hypothesis	Test Statistic	p-Value	Decision
H1: Expansion stimulates job creation	4.2	0.001	Reject Ho
H2: Expansion enhances local supply chains	3.9	0.002	Reject Ho

Hypothesis Testing (Table 4: Hypothesis Testing Results)

The hypothesis test for job creation, with a test statistic of 4.2 and a p-value of 0.001, supports the rejection of the null hypothesis. This confirms that factory expansion significantly stimulates job creation. Similarly, the hypothesis test for local supply chain growth, with a test statistic of 3.9 and a p-value of 0.002, also leads to rejecting the null hypothesis. This supports the assertion that factory capacity expansion has a significant positive impact on local supply chains. These hypothesis testing results are consistent with the regression analysis, further validating that factory expansion plays a crucial role in job creation and local supply chain growth.

4.3. Operational Challenges Faced by Zambian Breweries

Thematic Analysis

Table 5: Recurring Themes and Frequency in Interviews

Theme	Frequency (Occurrences)	Percentage (%)
Supply chain disruption	20	33
Regulatory compliance	15	25
Quality control	10	17
Stakeholder management	15	25

The thematic analysis indicates that the most frequently mentioned challenge faced by Zambian Breweries is supply chain disruption, which occurred 20 times and accounted for 33% of responses. This highlights the significant impact of supply chain issues on the company's operational efficiency. Regulatory compliance was mentioned 15 times, representing 25% of the responses, suggesting that navigating and adhering to legal requirements pose substantial difficulties. Quality control was noted 10 times, making up 17% of the responses, indicating that maintaining product standards is a challenge that can affect customer satisfaction and brand reputation. Stakeholder management was mentioned 15 times, also accounting for 25% of the responses, emphasizing the importance of effectively managing relationships with partners, suppliers, and other key stakeholders.

In summary, the analysis of recurring themes shows that supply chain disruptions and regulatory compliance are the most pressing challenges for Zambian Breweries, each affecting around a quarter or more of the total responses. Quality control and stakeholder management, although less frequently mentioned, are still significant operational challenges that need attention to improve the company's overall performance.

Table 6: Challenges Categorized by Stakeholders

Stakeholder	Key Challenge	Frequency (%)
Employees	Adapting to new processes	40
Management	Ensuring quality control	35
Local community	Environmental concerns	25

The factory's strengths lie in its established market base, which ensures consistent demand and provides a reliable revenue stream to support expansion, as well as its technological readiness that facilitates efficient scaling and enhances productivity. However, there are notable weaknesses that could impact the expansion process. Supply chain limitations may disrupt the timely procurement of materials, leading to potential production delays and higher costs. Additionally, resource constraints—whether financial, material, or human—pose challenges to meeting the increased demands of a larger production scale. On the opportunity front, the potential for regional market expansion could drive growth, increase market share, and diversify revenue streams, reducing reliance on the current customer base. Furthermore, an expanded

production capacity could position the factory to pursue export opportunities, tapping into international markets. Despite these opportunities, threats remain, including regulatory restrictions that could introduce complexities, delays, and increased costs. Economic instability also poses a significant risk, potentially affecting expansion costs and consumer purchasing power, which could threaten long-term profitability.

4.4. Integration of Quantitative and Qualitative Findings

SWOT Analysis

Table 7: SWOT Analysis of Factory Capacity Expansion

Strengths	Weaknesses	Opportunities	Threats
Established market base	Supply chain limitations	Regional market expansion	Regulatory restrictions
Technological readiness	Resource constraints	Export potential	Economic instability

Table 8: Comparative Insights by Data Type

Insight	Quantitative Findings	Qualitative Findings
Supply chain challenges	65% reported delays in raw material supply	Interviewees cited infrastructure problems
Stakeholder engagement	70% agreed community concerns impact success	Stakeholders requested better communication

The analysis of supply chain challenges reveals that 65% of participants reported delays in raw material supply, highlighting that supply chain disruptions are a significant concern for the factory and could impede production and project timelines during expansion. Qualitative findings from interviews attribute these disruptions largely to infrastructure problems, suggesting that logistical improvements or alternative solutions may be necessary to bolster the supply chain and support expansion efforts. Regarding stakeholder engagement, quantitative data shows that 70% of respondents believe addressing community concerns is crucial for the success of expansion plans, underscoring the importance of stakeholder buy-in for a smooth process. Qualitative insights further indicate that stakeholders have called for better communication, pointing to transparency and proactive engagement as key areas for improvement. Implementing effective communication strategies could strengthen stakeholder relationships and help mitigate potential opposition to expansion initiatives.

The SWOT analysis of the factory capacity expansion highlights several key aspects. Among the strengths, the factory benefits from an established market base that ensures steady demand for its products, providing a reliable revenue stream to support expansion efforts. Additionally, the factory's technological readiness allows it to scale operations efficiently and improve productivity during the expansion process. However, significant weaknesses could pose challenges; notably, supply chain limitations may impede the timely procurement of materials, disrupting production schedules and increasing costs. Resource constraints, whether financial, material, or workforce-related, also present potential obstacles to scaling up production effectively.

Opportunities for growth are evident, with regional market expansion offering a path to increased market share and diversified revenue streams. Moreover, the prospect of exporting products could allow the factory to tap into international markets and enhance its competitive positioning. Nonetheless, there are threats to consider. Regulatory restrictions could introduce added complexity, potential delays, and increased costs, while economic instability poses a risk by potentially impacting both the cost of expansion and consumer purchasing power, thus threatening long-term profitability.

The comparative insights from the data analysis provide further context. In terms of supply chain challenges, quantitative data indicates that 65% of participants reported delays in obtaining raw materials, underscoring a widespread problem that could hinder production and expansion timelines. Qualitative findings from interviews attribute these issues to infrastructure problems, suggesting the need for logistical improvements or alternative solutions to bolster the supply chain.

When it comes to stakeholder engagement, quantitative findings show that 70% of respondents believe that addressing community concerns is essential for the success of the expansion. This highlights the critical role of community and stakeholder perspectives in ensuring a smooth expansion process. The qualitative insights reveal that stakeholders have requested better communication, pointing to the need for transparency and proactive engagement. Effective communication strategies could strengthen relationships with the community and mitigate potential opposition. Overall, this analysis suggests that while the factory has a strong foundation and promising opportunities for expansion, addressing its weaknesses and mitigating threats are essential for successful implementation. Strategies that strengthen supply chain resilience, improve resource allocation, and enhance stakeholder communication will be crucial to support the factory's growth and sustainability.

4.5. Discussions

Factors Influencing Factory Capacity Expansion

The study revealed that several factors play a critical role in influencing factory capacity expansion at Zambian Breweries. Chief among these is increasing market demand, technological advancements, and growth objectives. Each of these factors demonstrates significant alignment with both theoretical frameworks such as the Resource-Based View (RBV) and Stakeholder Theory, and findings from existing literature.

Market Demand

Increasing market demand, which received a 90% positive response from study participants, emerged as the most influential driver of factory capacity expansion. This finding is consistent with (Islam & Islam, 2016), who argue that market demand acts as a key determinant in capacity investment decisions, ensuring businesses can meet rising consumer expectations. Market demand as a driver is particularly critical in dynamic industries like brewing, where the ability to scale production directly affects competitiveness (Masound, 2021).

Furthermore, Zambian Breweries' focus on demand-driven expansion aligns with the RBV, which emphasizes leveraging valuable, rare, and non-substitutable resources to create sustained competitive advantages (Barney, 1991). The growing preference for branded alcoholic beverages in Zambia, as highlighted by Hessman (2020), underscores the need for breweries to adapt to changing consumer preferences and increased consumption rates. By expanding capacity to meet this demand, Zambian Breweries positions itself to maintain and potentially increase its market share, aligning with competitive positioning strategies discussed by Bilberg (2019).

Economic Implications

The expansion of factory capacity at Zambian Breweries has profound economic implications, influencing job creation, local supply chain development, and revenue growth. The study established a significant positive relationship between factory capacity expansion and these economic benefits, reinforcing the broader impact of industrial development on socio-economic growth.

Job Creation

Factory expansion at Zambian Breweries has directly contributed to job creation, as demonstrated by a coefficient of 0.45, indicating a strong and positive correlation. This finding aligns with (Masound, 2021) study, which highlights that industrial expansions not only provide employment opportunities within factories but also create ancillary jobs in supporting sectors. The construction phase of the expansion project alone generated temporary jobs for contractors, laborers, and technicians, offering immediate income and skills development opportunities.

In addition to direct employment, factory expansion supports indirect job creation through the growth of associated industries, such as transportation, maintenance, and raw material supply. (Munoni,, 2017) emphasizes that such multiplier effects are critical for addressing unemployment challenges in emerging economies like Zambia. Furthermore, the ability to employ local talent fosters economic inclusivity, empowering communities and reducing poverty.

Local Supply Chain Development

The study identified a coefficient of 0.35 for the positive relationship between factory expansion and local supply chain growth. This underscores the importance of industrial capacity in fostering regional economic resilience. Zambian Breweries' increased production capacity has stimulated demand for local raw materials, including barley and maize, encouraging the growth of Zambia's agricultural sector. This aligns with findings by (UNIDO, 2020), which emphasize that industrial development serves as a catalyst for agricultural productivity by creating stable markets for farmers.

Moreover, the brewery's reliance on local suppliers for packaging materials, transportation, and logistical support strengthens the supply chain infrastructure within the region. As noted by (Russell, 2018), integrating local suppliers into industrial operations enhances supply chain sustainability, reduces costs, and improves efficiency. By promoting local sourcing, Zambian Breweries contributes to capacity building among its suppliers, aligning with broader goals of regional economic development.

Revenue Growth

Revenue growth emerged as another significant economic implication of factory capacity expansion, with the study showing a coefficient of 0.50. This indicates a substantial positive impact on Zambian Breweries' financial performance, driven by the ability to produce and sell more products. The increased revenue not only strengthens the company's profitability but also enhances its contribution to Zambia's fiscal revenue through taxes and levies.

As noted by (Dinh, 2013), higher production capacities enable firms to achieve economies of scale, reducing per-unit production costs and improving competitiveness. For Zambian Breweries, this translates to the ability to offer competitively priced products, further solidifying its market position. The financial stability resulting from revenue growth also enables the company to reinvest in technology, workforce development, and community initiatives, creating a virtuous cycle of economic benefits.

Operational Challenges

The process of expanding factory capacity at Zambian Breweries involves numerous operational challenges, including supply chain disruptions, regulatory compliance, and stakeholder management. These challenges not only impact the

project's timeline and costs but also influence the broader sustainability and effectiveness of the expansion. This section explores these challenges in detail and compares them with findings from empirical literature.

Supply chain disruptions emerged as the most significant operational challenge, cited by 33% of respondents. These disruptions, primarily related to the sourcing and timely delivery of raw materials and equipment, underscore the logistical bottlenecks faced during factory capacity expansion. This finding resonates with (Hessman, 2020), who identifies logistical inefficiencies as a critical barrier to manufacturing growth, particularly in regions with underdeveloped infrastructure.

In the context of Zambia, underdeveloped road networks and limited rail freight options exacerbate delays in the transportation of essential inputs like barley and packaging materials. Such disruptions not only delay production schedules but also increase costs due to the need for expedited shipping or reliance on less efficient alternatives. As noted by (Lee, 2018), supply chain interruptions can create a ripple effect, affecting inventory levels, operational efficiency, and customer satisfaction.

To address these challenges, scholars like (Masound, 2021) advocate for strengthening local supply chains by fostering partnerships with nearby suppliers and investing in infrastructure development. For Zambian Breweries, this could involve working closely with local farmers and packaging providers to secure a stable supply of raw materials, thereby mitigating dependency on external logistics networks.

Regulatory compliance was identified as another major challenge, with 25% of respondents highlighting the complexities of adhering to legal and environmental requirements during expansion. The need to secure multiple permits, comply with environmental regulations, and meet safety standards creates significant delays and increases administrative costs. (Marti & Ssenkubuge, 2009) emphasize that navigating industrial regulations in developing economies is particularly challenging due to bureaucratic inefficiencies and frequent policy changes.

Zambian Breweries' compliance efforts align with the broader challenges identified by (Cherunilam, 2020), who notes that regulatory hurdles often necessitate additional investments in technology and training to meet environmental and safety standards. For instance, adopting energy-efficient machinery and waste management systems not only addresses regulatory requirements but also enhances operational sustainability.

However, the costs associated with compliance can strain financial resources, particularly in industries with narrow profit margins. As highlighted by (UNIDO, 2020), proactive engagement with regulatory authorities and community stakeholders can help streamline approval processes and foster goodwill. For Zambian Breweries, such engagement might include regular consultations with government agencies and investments in corporate social responsibility initiatives to build a positive reputation.

Effective stakeholder management emerged as another significant challenge, with respondents emphasizing the importance of communication and collaboration with employees, local communities, and government entities. This finding aligns with Freeman's Stakeholder Theory, which underscores the need to balance the interests of diverse stakeholder groups to achieve long-term organizational success (Freeman R. E., 1984).

For Zambian Breweries, stakeholder concerns ranged from employee resistance to operational changes to community apprehensions about environmental impacts. As noted by (Kim, G. S & Lee, 2021). large-scale industrial projects often face opposition from local communities if they perceive negative environmental or social consequences. This underscores the importance of transparent communication and active engagement to address stakeholder concerns and secure buy-in.

Employee engagement is particularly critical in ensuring the smooth adoption of new technologies and processes during expansion. As suggested by (Jeon, 2023), providing comprehensive training and involving employees in decision-making can mitigate resistance and foster a culture of collaboration. Similarly, engaging local communities through public forums and social investment initiatives can build trust and reduce opposition to the expansion project.

The challenges identified in this study—supply chain disruptions, regulatory compliance, and stakeholder management—are consistent with findings from broader manufacturing contexts. For example, (Russell, 2018) notes that breweries face unique supply chain challenges due to the perishability of raw materials and the need for precise production timelines. Meanwhile, regulatory compliance challenges align with studies like (Masound, 2021), which emphasize the growing importance of environmental and safety standards in industrial operations.

Stakeholder management challenges are also widely documented, with scholars like (Freeman R. E., 1984) and (Capitello, 2021) highlighting the need for companies to balance profitability with social and environmental responsibilities. These challenges are particularly pronounced in industries like brewing, where community and employee perceptions significantly influence brand reputation and operational success.

Operational challenges such as supply chain disruptions, regulatory compliance, and stakeholder management are integral to the factory expansion process. By addressing these challenges through strategic investments in infrastructure, technology, and stakeholder engagement, Zambian Breweries can enhance the sustainability and effectiveness of its expansion efforts. These findings provide valuable insights for other companies navigating similar challenges in developing economies, emphasizing the need for proactive and adaptive management strategies.

5. Conclusion and Recommendations

This study examined the factors influencing factory capacity expansion at Zambian Breweries, with a focus on market demand, economic implications, and operational challenges. Using empirical data and theoretical frameworks like the Resource-Based View and Stakeholder Theory, the research provides a nuanced understanding of how capacity expansion

impacts manufacturing operations and socio-economic development.

The findings highlight that increasing market demand is the primary driver of factory capacity expansion, underscoring the brewery's need to meet consumer preferences and secure its competitive position. Technological advancements and growth objectives also play a significant role, demonstrating the strategic alignment of Zambian Breweries' expansion efforts with long-term goals.

Economic implications, such as job creation, revenue growth, and local supply chain development, underscore the broader impact of industrial capacity expansion on Zambia's economy. These benefits align with global findings on the role of manufacturing in fostering regional development and reducing unemployment. However, the study also reveals operational challenges, including supply chain disruptions, regulatory compliance, and stakeholder management, which highlight the complexities of expanding operations in a developing economy. Addressing these challenges through strategic investments, proactive stakeholder engagement, and sustainable practices is crucial for achieving long-term success.

By contextualizing the findings within the Zambian manufacturing sector, this study contributes to academic literature and offers actionable insights for businesses, policymakers, and industry stakeholders. The research underscores the importance of localized strategies that consider market dynamics, regulatory environments, and stakeholder expectations in achieving sustainable industrial growth.

Recommendations

Streamline Regulatory Processes: Simplify the approval processes for industrial expansions by establishing centralized service centers and clear guidelines to reduce administrative delays.

Provide Financial Incentives: Introduce tax breaks, subsidies, and grants to encourage industrial capacity expansions and foster economic growth.

Support Local Supply Chains: Develop programs to fund and train SMEs involved in supplying raw materials and services to industries, thereby strengthening the local industrial ecosystem.

Promote Regional Trade: Enhance cross-border trade policies and streamline customs procedures to enable companies like Zambian Breweries to access regional markets and achieve economies of scale.

Limitations

1. Comparative Studies Across Industries: Future research could explore capacity expansion in other industries, such as textiles or mining, to understand the similarities and differences in drivers, challenges, and outcomes.
2. Longitudinal Studies: A longitudinal approach could examine the long-term economic, social, and environmental impacts of factory capacity expansion, providing a more comprehensive understanding of its sustainability.
3. Technological Integration: Investigate the role of emerging technologies, such as automation and artificial intelligence, in enhancing factory capacity and addressing operational challenges.
4. Policy Impact Analysis: Future research could analyze the effectiveness of government policies and incentives in promoting industrial growth and their impact on business performance.

Conflict of Interest

The authors declare that they have no conflicting interests

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Ethical considerations

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