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Chapter 1: Introduction

1.1 Background.

LAO PDR, or LAOS as it is often called, is geographically located within the Southeast Asian region, where it is surrounded by China to the North, Vietnam to the East, Cambodia to the Southeast, Thailand to the West, and Myanmar/ Burma to the Northwest. The people's lifestyle of Laos, along with its natural beauty, is characterized by fascinating views of rivers, forests, and mountains, which are developed into landscape sculptures. The Mekong River has always been the primary element and the most important economic and cultural course running through a large area of the Mekong; it has been the main source of food in the country for centuries. Most of the cultural forms that existed in Laos have been greatly supplemented by the Theravada Buddhist traditions. Vientiane, the capital city is home to several of the nation's iconic landmarks, such as the Patuxai, a monument that recognizes the nation's independence and symbolizes the Lao government and Buddhist religion, and the well-known Pha That Luang. In a land that is rich in culture and Buddhist beliefs, there are always celebrations at every festival, which has a satisfactory effect on the food and drink industry, as known as Laos has huge companies that produce alcohol and soft drinks that are very well-known in Asia name Lao Brewery Ltd.

The Lao Brewery Company was established in 1971 as a joint venture between French and Lao entrepreneurs. In 1973, it officially started production with a capacity of 3 million liters per year. Two The enterprise, which was previously known as Brasseries et Glacières du Laos (BGL), marketed Bière Larue for the local market and "33" export for export to countries in Indochina. The corporation was nationalized and distributed the status of a state-owned enterprise over the establishment of the beer under the Bière Lao brand, and eventually under the Beer Laos brand in early 1995. Their '33' export brand was promoted until 1990, and Bière Larue was marketed until 1995. Carlsberg group took over 50% of the corporation in 2005, while the Lao government controlled the remaining 50%. This marked a change in ownership. In 2007, Carlsberg Group took over 70% of the shares in Lao Soft Drink co Ltd., with the Lao government maintaining the remaining shares.

In the current climate of modern society, Lao Brewery Ltd. has massive market in the food and drink industry, thus, Lao Brewery Company Ltd. must redefine its logistics and distribution tactics to maintain its market share amidst the escalating rivalry among international brands like: Heineken Lao brewery co, Ltd., ThaiBev (chang Beer), smaller local breweries, Imported

Beverages and international brands... In reaction to the adoption of more efficient inventory management systems and the improvement of transportation networks in an attempt to ensure that financial market delivery is timely, LBC would have to make optimal use of its logistic facilities, including improving its supply chain and increasing warehousing capacity. Moreover, to expand its presence in the neighboring countries, where the demand of Beer Lao is increasing, LBC might focus on enhancing its cross-border logistics. These regions will help LBC to keep its competitive advantage by offering it a consistent supply of products and reducing distribution expenses.

From my point of view, I have a strong desire to write this thesis about the new trend of distribution that I have seen in Europe and Asia, which could lead to more efficient, sustainable, cost-efficient, positive environmental impact, and fast distribution to the market.

1.2 Statement of Problem.

This research aims to investigate the impact of these market trends on Lao Brewery's logistics operations and to propose strategic logistical or new methods solutions that will improve distribution efficiency, optimize inventory management, and certify the company's competitiveness in the face of these evolving challenges.

1.3 Objective of the study.

The primary objective of this research is to evaluate the influence of changing market trends, such as the arrival of new sales channels like e-commerce and vending machines, fluctuating raw material costs, and increased competition from local entrepreneurs, on Lao Brewery's logistics and distribution operations.

The study's objective is to:

1. Examine the impact of the increasing competition from local entrepreneurs on Lao Brewery's logistics and the potential for Lao Brewery to adapt its logistics network (warehousing, delivery speed) to remain competitive.
2. Propose strategies to optimize delivery time, inventory replenishment, and overall logistics efficiency by assessing the logistical challenges and opportunities presented by the adoption of new distribution channels, such as e-commerce and vending machines.

1.4 Research Questions.

In order to accomplish the goals mentioned above, the research will investigate the following critical questions such as:

1. What is the impact of increased competition from local enterprises on Lao Brewery's logistics operations?
2. What are the logistical implications of fluctuating currency exchange rates on the cost of imported raw materials, and how could Lao Brewery decrease these risks in its inventory management and supply chain?
3. How could Lao Brewery optimize its logistics network to effectively support new sales channels?
4. What strategic logistics solution could Lao Brewery use to improve its overall distribution and supply chain management in response to changing market trends and competitive pressures?

1.5 Significance of the study.

The results of this investigation will establish another approach for Lao Brewery to investigate its distribution, optimize inventory management and warehousing, ensure the company's competitiveness in the face of these evolving challenges, establish new network channels, apply new distribution trends that promote long-term sustainability and cost efficiency, and make a positive environmental impact.

Chapter 2: Literature Review

2.1 Global Beverage Market.

The beverage market around the world has grown each year, and there is also a huge and diverse industry that has several products, both alcoholic and non-alcoholic. The part has approved endurance and adaptation to evolving consumer tastes, economic conditions, and health trends. The beverage sector has experienced substantial expansion in recent years, driven by dynamism, sustainability, and a rising preference for healthier alternatives.

+ Market segments.

The global beverage markets could be categorized into 2 primary classes, such as non-alcoholic and alcoholic beverages.

1. Non-Alcoholic beverages.

All the beverages that are favoable and beneficial, which include those supplemented with vitamins, minerals, or probiotics, in addition to carbonated soft drinks, bottled water, juices, tea, coffee, energy drinks, and sports drinks, all belong to this group.

2. Alcoholic beverages.

It will include beer, wine, spirits, and RTD cocktails. It has been influenced by regional tastes, regulatory environment, and consumer behavior..

2.1.1. Beverage Market in Lao.

In recent years, the beverage market in Laos has rapidly evolved and grown owing to a combination of economic factors, culture, and improving retail systems. This presents an overview of the alcohol and non-alcoholic industries in the country:

+ Alcoholic beverages.

Laos Beer is very popular with the local population and the tourists where a noticeable stick is its lager that is produced and marketed at a single particular beer business. For the year 2023, the Police in the region indicated that BeerLao was the highest earner in the beer mark of the country showing earnings of the aggregate category of \$367.45 million. This group consistently expands at a stable rate, indicating that it is consistent with regional food practices and social drinking customs. The attraction of beer comes in its subtle, invigorating flavor, offering it a preferred choice in a communal eating environment, where food paring is prevalent. The

increase in urbanization and disposable financial status, especially in urban areas, has facilitated the expansion of premium beer brands.

The alcoholic beverage business has been helped by the cultural festivals and social events in Laos, which have completely restarted following the pandemic. Domestic beers offer a competitive advantage because of advantageous tax rules, producing them less expensive than imported alternatives. The distribution is primarily controlled by traditional retail channels; however, Internet sales are experiencing growth due to rising digital adoption. (Astute Analytica- Laos Beer market size & growth report) (Euromonitor- Alcoholic drinks in Laos).

+ Soft drinks and non-alcoholic Beverages.

The percentage of Laotians drinking bottled water, juices, RTD teas, and coffees is increasing. Despite the augmented part of the pricing pressure decreasing due to the augmented quantity of retailing spots such as convenience stores, augmented inflation, and increasing import charges have left a mark on the prices of these beverages. The soft drinks sector is expected to continue growing, and it will be driven by the increase in foreign travel and the growth of modern retail. High-potential classes include Asian specialty drinks and energy drinks, a sign of the changing consumer preferences towards healthy and functional beverages. (Market research Hub-Soft drinks in Laos) (MarketResearch-Laos beverages market research reports & Analysis).

2.1.2. Introduction to competition in the beverage industry.

The global beverage sector is extremely competitive, marked by significant expansion, innovation, and combination among major players. The market includes unique consumer preferences, legal frameworks, and cultural factors. The competitive dynamic of the market is primarily influenced by the continuous transition toward healthier options, a premium, and sustainability efforts.

+ The principal factor influencing competition in the global Beverage sector.

The competitiveness in the global beverage business is influenced by different influences that establish market dynamics, affecting both huge international corporations and smaller regional businesses. Below are the primary factors that typically characterize competition in this sector.

1. Innovation and differentiation of products.

Innovation on products should be constant in order to match the changing consumer preferences. Firms that innovate through healthier options (e.g. low-sugar, organic, functional drinks) or high-quality products can have an opportunity in the market. The rising quantity of energy drinks, beverages made of plants, and ready-to-drink (RTD) options has created new competitive opportunities to both developed and upcoming companies. Brand attractiveness and differentiation is increased by innovations in packaging and in particular, through the use of sustainable materials.(Kotler, P., & Keller, K. L. (2016). Marketing Management. Pearson).

2. Branding and marketing strategies.

Most companies in the beverage industry rely on branding and marketing as a way of creating loyalty among consumers since it is a brand-driven industry. Indicatively, PepsiCo and Coca-Cola control markets due to increased brand image through marketing, sponsorship, and advertisements. The competition among niche businesses is possible because these businesses put pressure on locality, authenticity, and the specialization of marketing.(Keller, K. L. (2013). Strategic Brand Management: Building, Measuring, and Managing Brand Equity. Pearson).

3. Networks for distribution and economies of scale.

Economic of scale assists the large enterprises to reduce the cost of production and offer low prices. They have distribution channels that have been established over a long time, and this enables them to serve more customers. Small businesses can target local markets or a niche in order to remain competitive as they compete with larger organizations in trying to reach the market and economies of scale.(Porter, M. E. (2008). The Five Competitive Forces That Shape Strategy. Harvard Business Review).

4. Sustainability and Ethical Consumption.

Because of a growing environmental cognizance among customers, sustainability is a concept that has emerged as an important competitive factor, reducing plastic waste, carbon dioxide emissions, and using renewable energy to do production. most of the beverage companies are now more than ever being called upon to use sustainable methods in their operations. Organizations that achieve sustainability are not only granted regulatory benefits, but they also have a clientele that remains loyal to them.(Ottman, J. A. (2017). The New Rules of Green Marketing: Strategies, Tools, and Inspiration for Sustainable Branding. Berrett-Koehler Publishers.)

5. Globalization and Local Competition.

The international beverage brands are on a mission towards other markets, making competition very stiff in fields traditionally dominated by local corporations. The local companies might be able to compete successfully by utilizing their understanding of local preferences and cultural differences in the region. The majority of the local businesses have defined their niches through prioritization of flavors or packaging that is culturally acceptable. (Prahalad, C. K., & Ramaswamy, V. (2004). *The Future of Competition: Co-Creating Unique Value with Customers*. Harvard Business Press).

6. Regulatory and Economic Factors.

The beverage industry is highly controlled, and one of the categories is the alcoholic beverage industry. Government regulations, taxes, and prices would greatly affect the competition in the market. Protective taxes or tax credits may favor local producers, but may create higher costs of entry for international corporations because of regulatory processes. In addition, economic aspects like inflation affecting the world economy, changes in trade agreements, and changes in prices of raw materials have a significant impact on competitive strategies. (Hill, C. W. L., & Jones, G. R., 2012). *Strategic Management: An Integrated Approach*. Cengage Learning.).

Lao Brewery, being the leading company in Laos' beverage industry, successfully applies the principal competitive dynamics seen in the global beverage market. Their product innovation with diversification is important to the company's strategy, particularly with the introduction of premium products such as Beerlao Gold. This action meets with the global trend of higher quality, as companies address the increasing consumer demand for higher-quality and specialized items. Lao Brewery has expanded its product offerings to battle locally and globally, distributing many beer types to get attention from a broad consumer demographic while keeping its market leadership with iconic brands like Beerlao. The combination of strategies allows the brewery to engage with local customers and foreign tourists, therefore maintaining its standing in an increasingly competitive market. (Laos Beer Market Size & Growth Report [2030]) (Soft Drinks in Laos- Research and Markets)

Furthermore, branding and marketing strategies are important to Lao Brewery's competitive advantage. The corporation has established Beerlao as a national symbol, incorporating it into the cultural identity of Laos. This reflects global branding strategies, where stronger brand loyalty and national pride are used to counteract competition from foreign firms. Lao Brewery uses modern advertising techniques to increase its brand awareness, connecting with local cultural values while simultaneously appealing to visitors and foreigners, an expanding market

sector. This combined strategy—local identity and global appeal—guarantees its sustained dominance in the competitive Laotian market.

I. Dynamic of competition in the beverage industry.

The beverage industry is extremely competitive, defined by the collaboration of international firms, local organizations, and dynamic local entrepreneurs. Porter's Five Model (1980) offers a framework for analyzing this environment, especially the increased competition from new entrants and changes in consumer preferences. Research indicates that in the fast-moving consumer goods (FMCG) sector, particularly in beverages, corporations encounter pressure to balance scale with adaptability while constantly innovating (Ferne & Sparks, 2004).

Lao Brewery, a market leader in Laos, which is experiencing a growing competitive environment because more local beverage businesses are emerging. These smaller companies take into advantage of trends like healthy choices and local sourcing, offering products that are appealing to the customers of Lao. This pattern is consistent with the study that shows that local business people often depend on their culture-based knowledge and operational flexibility in order to respond fast to market needs, thus posing difficulty to larger businesses with less flexible processes(Christopher, 2011).

Lao Brewery is changing its product portfolio and transportation network to maintain its competitive advantage, emphasizing efficient distribution and a broad product range that fits changing consumer demands. Research indicates that established companies might gain advantages from projects that build brand loyalty and responsiveness to consumer needs, allowing them to deal with the challenges presented by smaller, faster-growing competitors (Chopra & Meindl, 2016).

II. Impact of local entrepreneurs on establishing firms.

The increasing number of local entrepreneurs presents an important challenge for established companies, especially in sectors where adaptability and strong client relationships are important. Research suggests that smaller, regionally connected enterprises can quickly leverage market trends, including the demand for individualized products, sustainability, and local sourcing (Gereffi et al., 2005). This trend is pronounced in the beverage business, as local manufacturers utilize an awareness of regional preferences to gain market share, frequently to the disadvantage of larger, established companies (Christopher,2011).

The increasing number of local beverage entrepreneurs in Laos heightens competition for Lao brewery and requires strategic adjustments. Local businesses frequently benefit from flexibility, fast decision-making, and direct access to regional markets, allowing for faster

product launches and faster adaptation to consumer preferences compared to larger corporations. Research indicates that in highly competitive industries, established firms must consistently innovate and enhance operational efficiency to contend with innovative local competitors (Swafford, Ghosh, & Murthy, 2008).

Lao Brewery has implemented strategies to expand its product range and optimize its logistics to quickly respond to consumer demands while maintaining competitiveness. The research indicates that established organizations might gain from a dual strategy: utilizing brand loyalty while improving flexibility and consumer responsiveness, therefore decreasing the competitive advantages of smaller, local enterprises (Porter, 1980).

III. Challenges for established firms in adapting to local competition.

Established firms face a number of challenges in adapting to the growing competition of local entrepreneurs, who are normally quicker and are regionally oriented and sensitive to the dynamic consumer preferences. These issues are particularly evident in the beverage industry where people tend to buy locally produced, differentiated and sustainable products (Gereffi et., 2005). Small companies usually use their small size to quickly adapt, respond to the trends, and capitalize on cultural favor to put bigger companies at a disadvantage.

The main difficulty for large corporations such as Lao Brewery is organizational inflexibility, which may limit their capacity to quickly adjust to market fluctuations. Large, established corporations usually have structured systems and extensive organizational structures, which limit decision-making and prevent the prompt implementation of operational changes (Hollensen, 2015). In contrast, local competitors are generally less limited by these procedures, allowing them to adapt to market changes faster (Wagner & Bode, 2008).

The other problem of the supply chain is its flexibility. The huge companies often rely on complicated and extensive supply chains, and they may be difficult to adjust quickly. Local enterprises on the other hand are often operating on a small scale and can change their supply chains to match local demand without much straining (Christopher, 2011). The flexibility allows the local organizations to manage inventory costs, manage shorter lead times, and reduce the risk of stock outs as competitive advantages in a volatile market (Swafford, Ghosh, and Murthy, 2008).

Eventually, brand positioning and consumer loyalty are the issues of the established companies that struggle with the local competition. Although brand loyalty might prevail in more developed companies like Lao Brewery, the present values of consumers, focusing on authenticity, sustainability, and local products, are such that require a change in strategy to maintain the commitment. Studies have shown that consumers are increasingly using

businesses that align with their value system such as being supportive of local economies and being environmentally friendly (Aaker, 1991). Established businesses need to strike a balance between leveraging on their brand equity and restructuring brand stories to match the current ideals of the customers.

To deal with these issues, established companies must improve organizational agility, optimize supply chain flexibility, and match brand values with changing consumer tastes. By doing so, they can enhance their competitive position against dynamic competitors in their area.

2.1.3. The role of logistics in the competitive landscape.

The flexibility and efficiency of logistics systems are becoming increasingly important in the competitive environment in most of various industries. Firms operating in dynamic markets must apply logistics to react to the demand fluctuation in response to changes in consumer preferences and market development phases. Especially since the shift toward wine and spirits is registered by the provided statistics in more developed markets, the redistribution of supply chains is required to manage various types of products and delivery modes in the most efficient way (Euromonitor, 2019).

+ Logistics as a Competitive Advantage.

Effective logistics networks may create a competitive advantage by minimizing expenses, improving customer happiness, and increasing market responsiveness. (Porter, 1985) says that logistics is an essential element of the value chain, affecting enterprises' capacity to provide value to customers. In competitive markets, it has become essential to adjust logistics methods to meet the demands of premium products or regional supply chain requirements.

+ Adapting to different stages of market development.

As markets grow, the demands for logistics networks change. For example, in the new market, the focus may be on cost-effective volume distribution to a few key areas. In contrast, the developed markets sometimes require a broader, premium-oriented supply network (Bernstein Global Beer Guide, 2019). The capacity to match logistics networks with market realities impacts a company's performance in sustaining its competitive position.

Case example: beer market dynamics.

... however we see that the beer category loses share to Wine and Spirits as market develop

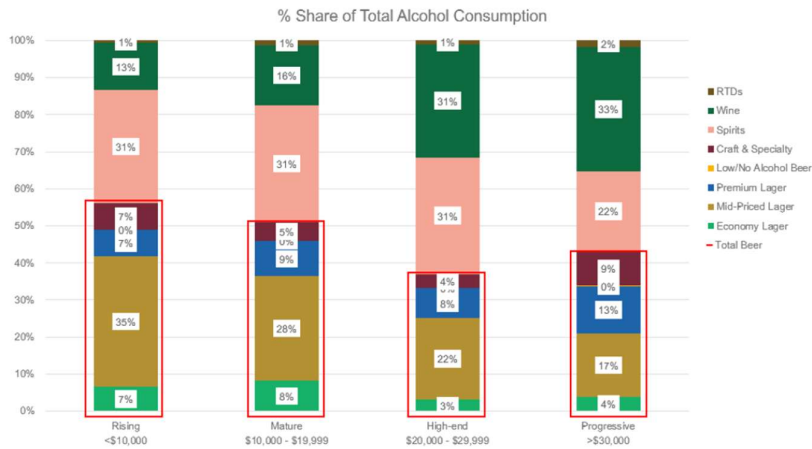


figure 1- 1.Share of total alcohol consumption.(Lao Brewery's market develop ppt)

The chart on alcohol consumption shows the influence of market development stages on the demand for different kinds of products. Logistical techniques must adapt to accommodate these changes. The rising percentage of spirits and wine in successful markets demands logistical networks that accommodate diverse product ranges and advanced delivery systems.

2.1.4. The Impact of Local Entrepreneurs on Established Logistics Networks.

Local entrepreneurs significantly influence logistics methods in competitive markets by using their awareness of regional details, supply chain dynamics, and consumer preferences. As pointed out by (Christopher (2016), the flexibility and adaptability of marketplaces. For example, as noted in the beer industry, regional companies like CCU in Chile and Radeberger in Germany present distinct logistical issues for multinational corporations such as Heineken and AB Inbev.

Market	Players	Market	Players
USA	ABInBev, Molson Coors, Constellation, Heineken, Boston, Pabst, Yuengling	United Kingdom	Heineken, Molson Coors, ABInBev, Carlsberg, Asahi
Canada	ABInBev, Molson Coors	Netherlands	Heineken, Asahi, ABInBev, Bavaria
Mexico	ABInBev, Heineken	Belgium	ABInBev
Brazil	ABInBev, Heineken, Petropolis	Denmark	Carlsberg, Royal Unibrew
Colombia	ABInBev	Portugal	Heineken, Carlsberg (Super Bock)
Argentina	ABInBev, Heineken (CCU)	Austria	Heineken, Steigbrauerei
Peru	ABInBev	Switzerland	Carlsberg, Heineken
Chile	Heineken (CCU), ABInBev	Russia	Carlsberg, Heineken, ABInBev / Efes
Ecuador	ABInBev	Poland	Asahi, Heineken, Carlsberg
Germany	Radeberger, ABInBev, Carlsberg, Bittburger, Krombacher, Brau (Heineken), Warsteiner, Royal Unibrew, TCB	Turkey	Efes, Turk Tuborg
France	Heineken, Carlsberg, ABInBev	Czech Republic	Asahi, Molson Coors, Heineken
Spain	Heineken, Damm, Mahou	Romania	Asahi, Heineken, Molson Coors, URB, European Food
Italy	Heineken, Asahi, ABInBev, Carlsberg	Ukraine	ABInBev, Carlsberg, Obolon

Strong Leader
Close Leader / Challenger
Weak Challenger
Premium Focused

figure 1- 2. Player in the market.(Lao Brewery's market develop ppt)

Market	Players	Market	Players
China	CRSB, Tsingtao, ABInBev, Yanjing, Cairlsberg, Henan, Zhujiang	Cameroon	Castel, Diageo
Japan	Asahi, Kirin, Suntory, Sapporo	Ethiopia	Heineken, Castel
Australia	Asahi, Kirin	Tanzania	ABInBev, Diageo (Serengeti)
Vietnam	ThaiBev, Heineken, Habeco, Carlsberg	Ivory Coast	Castel, Heineken
Philippines	Kirin	Uganda	ABInBev, Diageo
India	Heineken, Carlsberg. Note: ABInBev excluded (negative EBIT)	Mozambique	ABInBev, Heineken
Thailand	Boon Rawd, ThaiBev, Heineken	Carlsberg-only Markets (not covered on Bernstein report)	
South Korea	ABInBev, Hite	Sweden, Norway, Finland, Bulgaria, Serbia, Greece, Croatia, Lithuania, Estonia, Hungary, Kazakhstan, Belarus, Azerbaijan, Laos, Nepal, Malaysia/Singapore, Hong Kong. Note: Cambodia and Latvia excluded (negative EBIT); Myanmar not available; excludes export markets	
South Africa	ABInBev, Heineken	Markets where "Others" has been included in total profit pool calculation, but not on regression model (no individual player market shares available)	
Nigeria	Heineken, Diageo; Note: ABInBev excluded (negative EBIT)	USA, Canada, Mexico, Brazil, Colombia, Argentina, Peru, Chile, Ecuador, Germany, UK, Spain, France, Italy, Netherlands, Belgium, Denmark, Portugal, Austria, Switzerland, Russia, Poland, Czech Republic, Romania, Ukraine, South Africa, Nigeria, Angola, DRC, Ivory Coast, Japan, Australia, Vietnam, Philippines and South Korea. In all other markets on Bernstein's report, EBIT from "Others" is estimated to be zero.	
Angola	Castel		
DRC	Castel, Heineken		
Kenya	Diageo		

Strong Leader
Close Leader / Challenger
Weak Challenger
Premium Focused

figure 1- 3. Player in the market.(Lao Brewery’s market develop ppt)

+ Regional logistics strategies.

Local entrepreneurs usually implement innovative logistical strategies to improve market service efficiency. These solutions could involve optimizing last-mile distribution, establishing regional warehousing systems, or improving partnerships with local distributors. The figure above explains that the presence of both global and local enterprises creates a competitive impact in economies such as Germany, where Radeberger leverages its local expertise to sustain considerable market influence.

+ Changes by Established Enterprises.

Established companies adapt to this demand by reorganizing their logistics networks to maintain competitiveness. (Euromonitor (2019)) emphasizes that multinational corporations are progressively adapting their strategies to the local environment, either by partnering with regional distributors, improving product accessibility in specialized areas, or adjusting inventory management to accommodate variable demand. ABInBev's dominance in markets such as Peru and Colombia is maintained by customizing logistics networks to adapt to the nimbleness of smaller, local rivals.

Furthermore, the impact of local entrepreneurs on established logistics networks of Beer Lao, as Beer Lao shows the influence of local entrepreneurial ability on logistics across a competitive market. As the largest beer manufacturer in Laos, Beer Lao leverages its extensive awareness of the nation’s geographical and logistical challenges to sustain a premier market position. The company’s capacity to formulate and implement logistics plans customized for

Lao's unique infrastructure- characterized by limited road connectivity and a distributed rural populace- illustrates the key role of local entrepreneurs in the logistics sector.

International competitors such as Heineken and Carlsberg, entering the Lao market, introduce advanced logistics systems that force Beer Lao to innovate. These global companies frequently develop optimized operations, data-focused distribution frameworks, and scalable supply chain models, forcing Beer Lao to adjust. In response, Beer Lao optimizes its logistics network to improve competitiveness.

Local entrepreneurs and smaller regional beverage companies increase pressure on Beer Lao by entering niche markets, particularly in rural areas, using cost-effective and flexible logistical networks. In response to these challenges, Beer Lao has built up relationships to maintain its market domination.

As a “ Strong leader ” in its own market, Beer Lao faces competition from both worldwide “ close leaders/challengers ” and innovative local businesses. This interaction shows the fundamental subject of how local entrepreneurs impact and challenge established logistics networks, forcing enterprises such as Beer Lao to adapt and sustain their competitive advantage in a fluctuating environment.

2.1.5. Adapting the logistics network to stay competitive.

In an increasingly competitive global market, the capacity to adjust logistics networks has established itself as a fundamental element of economic success. Logistics networks nowadays include not only operating efficiency but also need to adapt to changing consumer demands, technology innovations, and competitive challenges. (Christopher, 2016)) proposes that companies must continuously improve their logistics to maintain competitiveness, particularly in sectors where supply chain management is essential for value delivery.

Globalization and market expansion have made logistical adaptation more important. Heineken and Carlsberg enter new countries with innovative logistical frameworks like scalable supply chains and data-driven decision-making tools, which challenge local markets. To stay ahead, local players like Lao Brewery company must innovate and change their logistics techniques. Despite the worldwide competition, Lao Brewery has used its deep expertise in local technology and consumer behavior to keep its logistics network efficient and competitive (Lao Brewery Annual Report 2012).

Adapting logistics networks involves matching operations with changes in customer behavior. In Laos, urbanization and rising disposable income have resulted in higher demand for convenience and quality items (World Bank, 2019. GDP and market development indicators in Laos). Lao Brewery has optimized its supply network to guarantee continuous product availability in urban and rural regions. The company has concentrated on establishing partnerships with regional distributors, allowing it to assist regions that may otherwise be unreachable due to infrastructural barriers. This localized strategy guarantees that Beer Lao continues to be the preferred selection for consumers, even in rural areas of the country.

Technology is essential for the adaptation of logistics. However, international competitors might use advanced systems like AI and IOT for inventory management and demand forecasting, local enterprises such as Lao Brewery gain advantages by integrating these technologies with area expertise (Christopher, 2016). Applying digital tools for distribution planning could enable Lao Brewery to improve operational efficiency while preserving its competitive advantage over both global and local players. Furthermore, innovations like vending machines—suggested in this thesis—could improve accessibility in urban environments, offering an innovative method for product delivery and client interaction.

Nevertheless, the adaptation of logistical networks offers several challenges. For enterprises such as Lao Brewery, the substantial expense of upgrading supply chains and the need to balance tradition with innovation may create important challenges. Considering these challenges, Lao Brewery has shown that utilizing local expertise and adapting logistics systems in reaction to internal and external forces may establish a long-term competitive edge.

In conclusion, Lao Brewery's capacity to adapt its logistics network emphasizes the value of combining global tactics with local expertise. As markets change, logistics networks must be dynamic, flexible, and innovative to satisfy the needs of shifting consumer preferences and competitive dynamics. Lao Brewery's strategy shows how a mix of localized methods and technology improvements may assure long-term competitiveness in the face of global problems.

2.2 Currency exchange fluctuation in the global supply chain.

The currency exchange rate fluctuates have an important effect on global supply chains, presenting risks and problems for organizations that depend on foreign sourcing, procurement, and shipping. The fluctuation of exchange rates has an impact on the cost of imported raw materials, transportation, and entire supply chain operations, producing uncertainty in pricing,

contracts, and profitability (Chopra and Meindl, 2016). Currency change can have a direct impact on the operational costs and financial stability of enterprises that depend on imported ingredients or equipment, such as Lao Brewery.

2.2.1 Impact of currency exchange variability on supply chain expenses.

The volatility of exchange rates may lead to unanticipated cost rises in the management of the international supply chain in business. Devaluation of a local currency increases the price of imported goods, hence impacting the procurement and operational budgets (Coyle, Langley, & Gibson, 2017). This can increase the expenses of transportation, warehousing and inventory management as companies may require a larger inventory to counter the possibility of rising costs later on (Wagner & Bode, 2008). Currency inflation can short-term reduce the cost; but it will pose a difficulty in sustaining the long-term supplier contract and pricing stability.

For Lao Brewery, which is likely to buy some of its raw materials in the world markets, may be subjected to fluctuations that affect the price of goods provided and profit margins. As an example, increased costs of imported hops or brewing equipment that is caused due to devaluation of a currency may cause the company to accept the costs or pass the costs to consumers, which may result in the company losing its competitive advantage.

2.2.2 Challenges in managing currency risks across the supply chain.

Managing currency risks in international supply networks necessitates that companies confront multiple challenges:

- Pricing unpredictability: currency fluctuation limits specific cost forecasting, therefore impacting pricing strategies and financial planning (Paulraj & Chen, 2007).
- Supplier contract stability: Long-term agreements with global suppliers could ignore currency fluctuations, resulting in conflicts or the need for renegotiation (Gereffi et al, 2005).
- Inventory costs: Companies may accumulate raw materials to prevent potential future cost increases, therefore elevating inventory holding expenses and the risk of depreciation (Christopher, 2016).

Lao Brewery may have issues with worldwide suppliers, demanding efforts to manage risks linked to fluctuating exchange rates.

2.2.3 Strategies for managing currency exchange risks.

The research identifies different methods for reducing currency-related risks in the global supply chain:

- Hedging instruments: financial instruments like forward contracts and options enable companies to guarantee exchange rates, thus mitigating the fluctuation of procurement expenses (Carter et al, 2009). Lao Brewery might utilize such tools to stabilize expenses for imported commodities.
- Supplier diversification: procuring from several suppliers across different nations helps mitigate risk, allowing companies to relocate sourcing to areas with better currency rates (Tang & Tomlin, 2008).
- Localized sourcing: whenever possible, decreasing dependence on overseas suppliers by procuring locally helps mitigate risk to exchange rate fluctuations and lower shipping expenses.

2.2.4 Fluctuations in currency and inventory control.

There are also changes in currencies that have an impact on inventory management strategies. Frequently, companies keep safety stocks or adjust the quantity of orders to ensure the effect of possible price adjustment due to the exchange rate fluctuations (Chopra & Meindl, 2016). Such an approach could lead to higher storage costs and drawback. By implementing lean inventory strategies like the Just-in-time (JIT) systems with the safety stock strategies, Lao Brewery would be able to reach a compromise between cost management and risk mitigation.

The combination of the financial and operation solutions has worked well in reducing currency risks that affect global beverage companies. Heineken applies currency risk hedging and supplier risk diversification to keep procurement costs within its global supply chain under check (Guo et al., 2018). Coca-Cola applies sophisticated forecasting algorithms to predict the impact of currency changes on the cost of raw materials and respond in advance to change the pricing strategies (Heizer et al., 2020).

In conclusion, currency exchange rates changes provide significant challenges to firms whose global supply chains experience currency fluctuations that affect costs, relationships with suppliers, and inventory management. Lao Brewery needs to take a proactive approach to reduce the effect of currency fluctuation through using financial instrument, enhance flexibility of supply chain and adopting inventory practices. To enhance its ability to manoeuvre the

global supply chains and the ability to remain competitive, Lao Brewery can use localised sourcing strategies, diversification of suppliers, and the use of hedging strategies..

2.3 Logistic method in general.

Logistics constitutes the fundamental component of supply chain management, covering the planning, execution, and control of the economic movement of goods, services, and information from the point of origin to the point of consumption. Logistics methods emphasize the diverse strategies and systems employed to improve these operations. The characteristics of the products, geographical location, customer expectations, and cost factors all affect the chosen logistics technique. This is a summary of frequently utilized logistics methods, their operational mechanisms, and their applications:

1. Inbound and outbound logistics.

Inbound logistics directly focuses on operating the flow of raw materials, components, and goods from suppliers to corporate facilities, to provide production consistency and cost efficiency. On the other hand, Outbound logistics deals with the distribution of finished products to consumers or retailers, highlighting speed and reliability to meet consumer expectations. Together, both methods form the foundation of logistics operations, with their success depending on robust planning, supplier coordination, and efficient transportation systems (Christopher,2011).

2. Just-in-time (JIT) logistics.

The just-in-time (JIT) logistics help to reduce inventory by receiving goods only as the company needed, dealing with reducing the cost of storage and improving operational efficiency. Although effective for cost control, JIT logistics may require actual supply chain coordination and adaptability to disturbances. This method has been a useful tool in many industries such as automotive, although lean inventory management ensures fresh supply and cost savings, but also necessitates a responsive and dependable supplier network (Womack & Jones,1996).

3. Third-party logistics (3PL).

Third-party logistics (3PL) incorporates the outsourcing of logistical operations, including transportation, warehousing, and distribution, while coordinating operations with specialized providers or firms, letting corporations to concentrate on their core capabilities. This approach offers cost efficiency, scalability, and access to logistical knowledge, however, it could reduce

operational control. The efficacy of third-party logistics (3PL) depends on the selection of dependable partners that are consistent with the organization's strategic objectives (Chopra & Meindl, 2016).

4. Fourth-party Logistics (4PL).

4PL overcame 3PL by serving as a singular point of contact for the management of the full supply chain, integrating various logistics functions and providers. This method improves strategic management and simplifies intricate supply networks, rendering it suitable for extensive operations. Reliance on 4PL necessitates confidence and a clearly articulated partnership agreement to guarantee alignment with the business's objectives (Coyle, Langley, & Gibson, 2017).

5. Reverse logistics.

Reverse logistics include overseeing the return, recycling, or storage of products, usually as an element of the company's sustainability goals. This approach is becoming increasingly important in meeting customer expectations for returns and fostering sustainability responsibility. Productive reverse logistics improves brand reputation, supports an integrated economy, and fits the global sustainability trends (Mentzer et al., 2001).

6. Lean logistics.

Lean logistics utilizes the idea of waste reduction and continuous improvement to optimize logistics operations. This approach decreases expenses and response times meanwhile increasing service quality. In particular, lean logistics may entail improving delivery routes to save fuel consumption or structuring warehouses to minimize operating durations. It is extensively utilized in businesses with narrow profit margins, increasing efficiency and responsiveness (Christopher, 2016).

7. Cold chain logistics.

Cold chain logistics guarantees the safe transit and storage of temperature-sensitive materials, including medicines and foods. Specialist equipment, including refrigerated vehicles and warehouses, is necessary for keeping products safe. This technology, although effective, can be costly and complex, requiring comprehensive monitoring systems to guarantee compliance with temperature regulations, especially in sectors such as healthcare and food manufacturing (Guo et al., 2018).

8. Drop shipping.

Drop shipping helps reduce the requirement for retailers to stock products by shipping them directly from suppliers. Businesses can expand faster and save storage costs with this strategy. It is useful for e-commerce but limits product quality and delivery time. Its ease and scalability appeal to small enterprises and online shops (Coyle, Langley, & Gibson, 2017).

9. Intermodal logistics.

Intermodal logistics optimizes shipping costs and efficiency by combining transportation, road, sea, and air transport. It takes use of many transport methods, making it ideal for long-distance shipments. Goods may be expressed by sea for most of way and then delivered by trucks. This strategy requires network coordination and efficient technology (Chopra & Meindl, 2016).

10. E-Logistics.

E-Logistics is method that improve logistics operation with real-time tracking, predictive analytics, and automated warehouse. This strategy improves visibility, reliability, and client satisfaction also in the same time it help company saving cost. E-Logistics is a key enabler of competitive advantage in supply chain management, especially for organizations seeking to improve delivery time and customer experience (Wamba et al., 2017).

11. Hub-and-Spoke logistics.

The use of hub-and-spoke logistics involves the consolidation of items at central hubs prior to their distribution to ultimate destinations. This approach helps to streamline delivery routes and reduce costs. When it comes to managing large-scale distribution networks, such as those utilized by transportation companies or airplanes, this technique is particularly helpful thanks to its versatility. Nevertheless, the utilization of the Hubs technique can result in delays if it is not managed well, necessitating the implementation of effective scheduling and monitoring systems in order to guarantee completely flawless operations (Coyle, Langley, & Gibson, 2017).

2.3.1. Logistics in Lao.

Laos is the least-developed country in Southeast Asia, and this country has been focused for years on the development of logistics to become a land-linked country. Stretching from the

northeast to the southeast region, the country is located in the greater Mekong sub-region where there is a great potential for trade and transport.

The market for logistics in Laos is still developing, however, existing investments in the development of infrastructure to improve access are increasingly being made. The logistics market of the country was USD 497.46 million in the year 2018 and is expected to grow at a (CAGR) of 8.47% during the forecast period (Logistics market in Laos size & share analysis-growth trends & forecasts 2024-2029). This growth is, therefore, attributed to better roads, the existence of a new railway line, and efforts aimed at enhancing the efficiency of customer processes.

Several logistics methods are employed in Laos to facilitate the movement of goods and services:

- Road transport: road transport is heavily dominating the logistics environment and comprises over 80% of the traffic on the freight road in Laos (Logistics market in Laos size & share analysis-growth trends & forecasts 2024-2029). The government has upgraded national highways and rural roads to enhance trade within the country, as well as across national borders.
- Rail Transport: The establishment of the Boten-Vientiane railway is a normal track that links Laos with China, which is a significant move in the development of logistics in the country. It helps in enhancing efficiency in trade as this railway network connects with the foreign markets.
- Water Transport: Water transport is largely used in transportation of supplies in areas that have inadequate road networks and therefore it encompasses around 4,600km of navigable rivers which includes the Makong River (WIKIPEDIA transport in Laos).
- Air Transport: Wattay International Airport in Vientiane is the major international and domestic airport though there are other airports operating in Laos. Air transport is critical to high-value and time sensitive cargo..
- Third-Party Logistics (3PL): It is possible to observe the growing range of international logistics provider which offers such services as warehouse services, freight forwarding, or distribution. This kind of trend assists businesses in streamlining the supply chain and turning their competencies into the most effective ones.
- Cross-Border Logistics: Laos being a country between countries, it acts as a transit country in the flow of goods between the neighbors. The development of ASEAN

Economic Community (AEC) is taking place more efficiently due to such programs as ASEAN Framework Agreement on the Facilitation of Goods in Transit (GIZMODO Transport and Logistics in Lao PDR: Impact of the ASEAN Economic Community).

- Cold Chain Logistics: With the healthcare and agricultural industry growing economically, there is the increasing demand of temperature controlled logistic services. A lot of consumers require such options in order to ensure stability of temperature of delicate and sensitive products.
- E-Logistics: To promote efficiency and customer satisfaction, digital platforms for order fulfillment, tracking, and delivery have grown in importance as e-commerce continues to grow.

However, for Laos, progress has existed but challenges include high logistics transport costs, poorly developed logistics service quality, and infrastructural constraints. Nevertheless, investments and initiatives of regional cooperation offer opportunities for Laos to enhance its logistics sector, improve decreasing trade barriers, and more comprehensively participate in regional and worldwide provide chains.

In short, Laos has a variety of logistical methods to facilitate Laos' economic development and regional integration. Key to this is continuous improvements in infrastructure, regulation frameworks, and service quality to realize the country's logistics potential in full.

2.3.2. Logistics and Distribution at Lao Brewery Company.

Beerlao is distributed by Lao Brewery Company (LBC) using a multi-model approach optimized for both domestic and international delivery. Road and sea and occasional air freight are the company's strategies that leverage strong partnerships with local and international distribution.

+ Domestic distribution.

- Truck transportation.

Lao Brewery Company transports its inventory from central breweries and warehouses to regional depots and retail locations in Laos using an inventory of trucks (LBC, n.d; Carlsberg Group,2021). Depending on the product and route needs, different truck models are used:

- Refrigerated trucks: It is used by premium or temperature-sensitive beer variants, to ensure product freshness and quality during transit.

- Heavy-duty truck: used for long haul routes connecting central warehouses in major cities: Vientiane, Luang Prabang, and Pakse to regional distribution hubs.
- Light commercial vehicles: used for last-mile distribution to retailers, restaurants, and bars, particularly in urban and semi-urban areas where smaller (this does not exclude slightly larger vehicles) vehicles can better navigate.
- Centralized warehousing system.

This storage and inventory management is in accordance with strategically located warehouses in key cities for warehouse and storage inventory management, thereby reducing the lead time (LBC, n.d.). It enables redistribution at hand and arms to satisfy dynamic market demands.

- Distributor partnerships and regional solutions.

In local distribution, LBC partners with local distributors, who have their networks in remote or less accessible regions. For example, these distributors may use smaller trucks, vans or motorbikes for delivery of beer Lao to such densely populated urban centers and as far away as remote areas (Culas & Baulch, 2011,) (vannasin,2012).

- Delivery frequency and scheduling.

High-demand areas maintain regular delivery schedules. Routes are adjusted to meet real-time market needs, sales trends, and inventory levels, and product fresher facilitates and reduces stockouts (Carlsberg Group, 2021).

+ international distribution.

- Cross-border road freight.

LBC works with sealed, heavy-duty trucks crossing international borders through inspected customs routes into neighboring markets such as Thailand, Vietnam, Cambodia, and China. Flexible and cost-effective response to the regional demand (LBC, n.d.)(ADB,2019).

- Containerized sea freight.

This means trucking products to major seaports in Thailand or Vietnam (such as Laem Chabang or Hai Phong) and then containerized sea freight to export to distant markets like

Europe, Australia, and North America. Reefer containers are used for temperature-sensitive shipments while standard 40 and 20-foot containers are common (Culas & Baulch 2011).

- Air freight (selective use).

LBC sometimes uses air freight services for urgent shipments, during promotional events, or as a result of limited trials of new products in new markets. Air transport is hastier but more expensive, delivery when such delivery is considered necessary (LBC, n.d.).

- Collaboration with international distributors and freight forwarders.

However, upon arrival in overseas markets, customs clearance and compliance with local regulations, are handled by established local importers and distributors, and then transportation to retailers and wholesalers. Freight forwarding companies are used to ensure route optimization, processing through customs and respect to international shipping standards (Carlsberg Group, 2021) (Vannasin, 2012).

- Cold chain solutions for premium products.

LBC integrates cold chain logistics for high-end or sensitive beer variants to deliver transit while maintaining product integrity to ensure that the beer taste and quality meet consumer expectations.

On the whole, the logistics strategy of Lao Brewery Company indicates a highly flexible and context-driven methodology. LBC ensures that Beerlao reaches both domestic and foreign markets in the best possible circumstances by using a variety of transportation techniques. The organization has the ability to respond quickly to shifting demand, different infrastructure problems, and regulatory needs due to the emphasis on strategically placed warehouses, regional distribution partners, and intermodal transport solutions. This adaptability in selecting the best logistical equipment and techniques for any circumstance not only preserves the item's quality and freshness but also boosts LBC's market share and its competitive advantage.

Chapter 3: RESEARCH METHODOLOGY.

3.1 Research Design.

The main purpose of the chapter is to analyze consumers' behavior preferences and logistics-related issues with respect to the Lao Brewery Company product. The study provided a quantitative research approach. Look at how customers relate to brand products and their ease of accessing new ideas, such as automated warehouses and vending machine distribution channels. Data was gathered utilizing a structured questionnaire distributed online via Google Forms, mostly targeting the Lao population. This approach for the questionnaire and survey made it possible to collect data and do basic analysis on Microsoft Excel or Google Sheets.

3.2 Population and sample.

The target population for this study comprised the consumer base of Lao Brewery Company products who lived in urban and suburban settings. Because of the nature of the study as well as the resources available, a non-probability convenience sampling technique was used. An aggregate of 100 and 150 respondents was recruited for the study. The questionnaire was distributed digitally to reach a large audience within a short timeframe, and participants were addressed through social media and internet platforms.

3.3 Research instrument.

The main instrument in this study was a structured survey that was personally administered, and designed to address the objectives of the study. This tool was meant to gather quantitative data on consumer preferences, buying behavior and logistical experience with the products of the Lao Brewery Company. The survey was developed in English and Laos language was spread on the internet using Google Forms and ensure accessibility and convenience of the respondents.

The research tool used closed-ended and multiple-choice questions to ensure structured data collection for basic quantitative analysis. A combination of pre-set answer choices decreased a likelihood of misunderstanding and misreading and it also allowed to keep all answers uniform. The questionnaire provided an option labelled “ other (please specify) ” from which the respondents could add any other extra information in case the given choices did not fully capture their views.

The questionnaire was segmented into four parts in order to obtain detailed and accurate information:

- **Demographic information:**
This section gathered fundamental socio-economic information to aid in segmentation and analysis of consumer groups. It asked about the type of dwelling (e.g., flat, house, apartment), sex, and salary. The knowledge of demographic characteristics made it possible to make a more advanced interpretation of the results of the survey and discover trends among various categories of customers.
- **Purchase Behavior:**
This segment checked the frequency of purchase of the Lao Brewery products, the type of products that the consumers normally purchased (e.g., beer, energy drinks, mineral water), and the mediums of the purchases (e.g., supermarkets, convenient stores, online stores). The obtained knowledge assists companies in identifying what is popular and optimizing the locations of their products due to their consideration of the potential to install the vending machines.
- **Logistical Concerns:**
This part of the questionnaire examined customer experiences regarding the delivery speed, delays, and cases of damaged or wrong orders to assess to inspect difficulties associated with the product delivery process. The questions were also concerned about whether the location of the respondent was a contributing factor to delivery problems and how the respondent was satisfied with the speed of deliveries. The effectiveness of the existing logistics systems is evaluated based on the correct data in the context of efficiency and the definition of the effectiveness of automated warehouses when enhancing the reliability of services.
- **Digital Engagement and e-commerce readiness:**
The final part of the questionnaire was devoted to online purchasing patterns and the use of online payment means. The survey asked the participants whether they had previously ordered products of Lao Brewery online, what were their favorite options of payment (e.g., cash on delivery, mobile payment, bank transfer), and what they thought could potentially hinder them to buy more products online more frequently. This segment is valuable in terms of determining how receptive consumers are to online platforms and payment systems, which would give an idea about whether it is possible to connect digital interfaces to vending machines or other automated sales platforms..

To preparing for being fully implemented, the questionnaire was pilot-tested with a small sample to make sure it was functional, significant, and clear. In order to improve the wording

of some elements and guarantee easy navigation through the form, feedback from the pilot test was utilized. The completed questionnaire is available for reference in the appendix of this thesis.

3.4 Data Collection Procedure.

The online data collection was conducted within a specific time frame and was handled with the help of Google Forms. The survey link was shared on social media and messaging apps to reach the highest number of people. Each participant received the information about the objective of the work and was guaranteed the confidentiality of their answers and anonymity. Participation was voluntary and the respondents were not bound to remain until the end since they could leave whenever they wanted to.

In order to reduce the variability in responses and enhance the reliability of data, attempts were done to make the questions available and understandable. The duration of collection was about two-three weeks to ensure that respondents are available differently.

3.5 Data Analysis.

At the end of the data collection stage all the responses were entered in Google Sheet and Microsoft Excel to be processed. The descriptive statistical analysis of the research data involved frequency distribution and percentage analysis. The means of analysis revealed general trends in the market and the products favorable to the consumers, their choice of distribution and delivery challenges.

Moreover, the data were divided in accordance with such demographic factors as gender, income, and residential status. Such a segmentation provided Lao Brewery with more specific information about the use of its delivery service and product offers by different groups of customers. The data were employed as an alternative mode of distribution, through which recommendations were made on how automated warehousing systems and vending machines could be integrated.

Chapter 4: DATA ANALYSIS AND FINDING.

4.1 Demographic Profile of Respondents.

➤ Section 1: Demographic information

+ Gender.

Table 1. Gender of respondents.(survey results)

Gender	Frequency	Percentage
Male	65	43%
Female	86	57%
Total	151	100%

As table 1 shows how the responses were distributed by gender. The gender distribution of the 151 participants was 43% male and 57% female. The findings are more broadly applicable to both male and female consumers due to this comparatively equal gender representation.

+ Monthly income.

Table 2. Monthly income of respondents.(survey results)

Income Range (per month)	Frequency	Percentage
Below 2,000,000kip (<\$100)	39	25,8%
2,000,000 – 5,000,000 (\$100 - \$250)	50	33,1%
5,000,001 – 10,000,000 (\$250 – 200\$)	38	25,2%
Above 10,000,000 (>\$500)	24	15,9%
Total	151	100%

The survey asked to indicate their average monthly income. As shown in the table 2 the majority of respondents 33,1% responded that they made between 2,000,000 – 5,000,000 LAK (about \$100 to \$250 USD) per month, according to the results in table 2 the next in line were 25,8% who made less than 2,000,000 LAK and 25,2% who made between 5,000,001 and 10,000,000 LAK. Other side 15,9% of respondents said they made more than 10,000,000 LAK every month. According to these findings, a large proportion of responders are in low- to middle-income range.

+ Employment status.

Table 3. Employment status of respondents.(survey results)

Status	Frequency	Percentage
Student	70	46,4%
Employee	60	39,7%
Freelancer / self-employed	7	4,6%
Unemployed / job seeker	6	4%
Business owner/entrepreneur	3	3,3%
Retired	3	2%
Total	151	100%

Table 3 presents a summary of the respondents' employment status. With 46.4% of the sample as a whole, students made up the largest group of participants. Employees, who accounted for 39.7% of respondents, came next. Retirees (2%), business owners (3.3%), unemployed/job searchers (4%), and freelancers/self-employed people (4.6%) had lower percentages. The large proportion of employees and students indicates that younger, economically engaged people make up the majority of the respondents' Lao Brewery product buyers.

4.2 Consumer behavior and preferences.

➤ Section 2: Consumer behavior and preferences.

+ Frequency of purchase.

Table 4. Frequency of Lao Brewery product purchases.(survey results)

Frequency	Frequency (approx.)	Percentage
Multiple times a week	48	31,8%
Occasionally	45	29,8%
Once a week	28	18,5%
Rarely	13	8,6%
Once a day	12	7,9%
Once a month	5	3,3%
Total	151	100%

The frequency of Lao Brewery product purchases was asked about by the participants. Table 4. presents the findings. Most of the respondents (31.8%) said they buy the products many times a week, while 29.8% said they buy them infrequently. Just 7.9% of respondents said they made purchases every day, and only 3.3% said they made purchases every month.

According to these findings, a sizable section of the target market regularly or semi-regularly consumes Lao Brewery products, demonstrating a steady level of brand engagement.

+ Product preference.

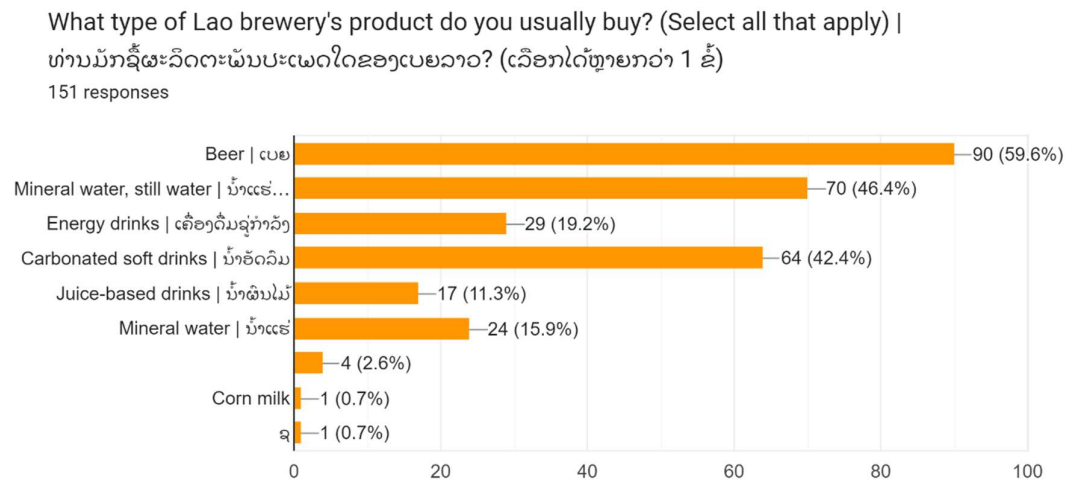


figure 1- 4.Product types purchased.(survey results)

Respondents were asked what products they typically buy from Lao Brewery. Beer and mineral water were the most popular products, chosen by 59.6% of participants, as shown in Figure 1- 4. Juice-based drinks (11.3%), energy drinks (19.2%), and carbonated soft drinks (42.4%) came next. Corn milk, still mineral water, and other unidentified items were less popular options.

This distribution shows how traditional products like beer continue to dominate the market, but it also points to ways to boost sales of specialty goods and non-alcoholic beverages.

+ Purchase Locations.

Where do you usually purchase Lao Brewery's products? |

ບົກກະຕິທ່ານຊື້ຜະລິດຕະພັນຂອງລາວຈາກໃສ?

151 responses

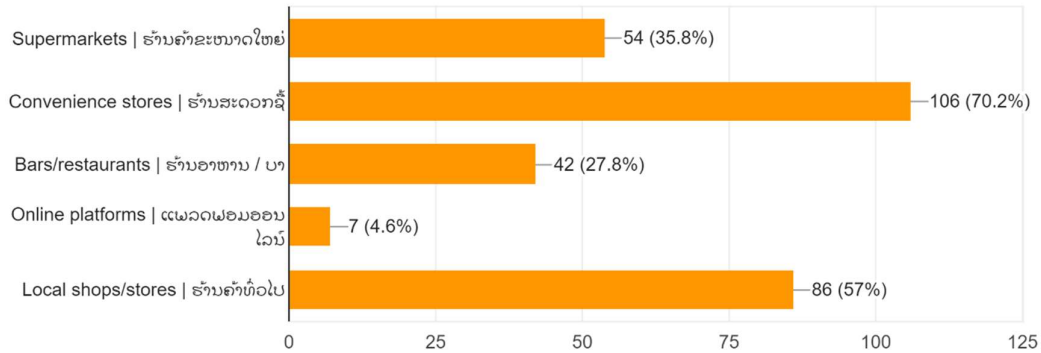


figure 1 5.Common purchase location. (survey results)

Respondents were asked where they typically buy products from Lao Brewery. Convenience stores were the most popular point of purchase, chosen by 70.2% of respondents, as shown in Figure 1- 5. Supermarkets (35.8%) and local shops or stores (57%) came next. Fewer respondents said they purchased goods online (4.6%) or at bars and restaurants (27.8%).

The results suggest that internet buying has not yet taken off, even while traditional retail, particularly convenience and neighborhood stores, remains dominant. Lao Brewery is receiving the chance to grow its delivery and e-commerce businesses in the future.

+ Factors influencing purchase decisions.

What influences your decision to buy our products? (Select all that apply) |

ແມ່ນຫຍັງທີ່ມີຜົນຕໍ່ການຕັດສິນໃຈຂອງທ່ານໃນການຊື້ຜະລິດຕະພັນ?

151 responses

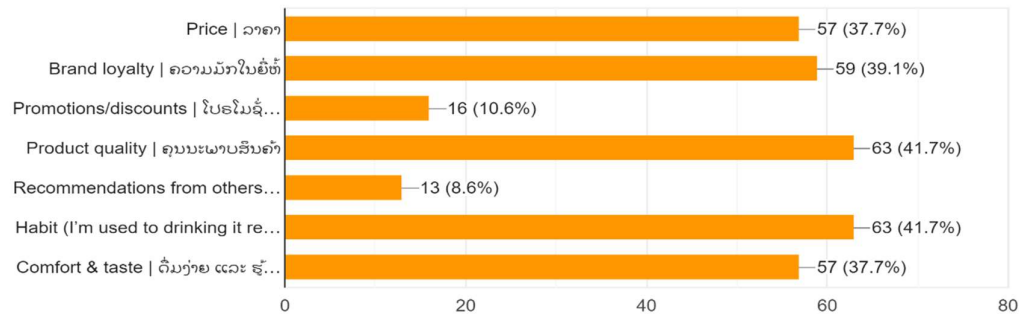


figure 1- 6Factors Influencing Purchase Decisions.(survey results)

Respondents were asked to list the factors that affect their decision to purchase products from Lao Brewery. 41.7% of participants chose regular usage and product quality as the most important considerations, as indicated in Figure 1- 6. Another significant factor that influenced 39.1% of respondents was brand loyalty. The next two factors mentioned by 37.7% of respondents were price and taste/comfort.

In contrast, promotions/discounts (10.6%) and suggestions from others (8.6%) were less influential. According to these studies, consumers are more likely to make a purchase based on brand familiarity and consistent product experience than on social recommendations or marketing strategies.

4.3 Logistics and delivery experience.

➤ Section 3: Logistics and delivery experience.

+ Willingness to pay extra for fast delivery.

Table 5. willingness to pay extra for fast delivery.(survey results)

Response	Frequency (approx.)	Percentage
Yes	75	49,7%
No	76	50,3%
Total	151	100%

Respondents were asked if they were willing to pay more for faster delivery service in order to find out how much value customers place on delivery speed. The responses were almost equally distributed, as Table 5. demonstrates: 49.7% said they would be willing to pay more, while 50.3% said they would not be willing to bear further costs.

This suggests that although about half of the clients valued quick delivery enough to pay for it, the other half are still concerned about cost. This recognition might help Lao Brewery organize its operations; by making express services optional rather than required, they might serve both markets.

+ Frequency of delivery delays.

How often do you experience delays in deliveries? ທ່ານປະສົບບັນຫາການສົ່ງສິນຄ້າຊ້າຫຼາຍລຸ່ມໃດ?
151 responses

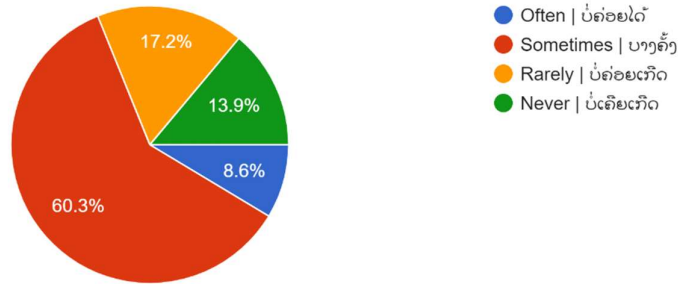


figure 1- 7.Frequency of Delivery Delays.(survey results)

Respondents were asked about their delays of delivery experience how frequently they encounter product delivery delays. As Figure 1-7. shows that while 17.2% of respondents indicated delivery delays happened infrequently, the majority (60.3%) said they happened occasionally. Just 8.6% of respondents said they frequently encountered such delays, while 13.9% said they had never encountered one.

According to these results, most customers frequently experience moderate delivery unpredictability, while severe or frequent delays are uncommon. Lao Brewery has the potential to improve delivery effectiveness and cut down on wait times, particularly for the market group that is prepared to pay extra for quicker service.

+ Delivery issues related to location.

Table 6. Delivery issues due to location.(survey results)

Response	Frequency (approx.)	Percentage
Yes	64	42,4%
No	87	57,6%
Total	151	100%

Respondents were asked if they have encountered any delivery problems because of their location in order to further evaluate logistical challenges. According to Table 6. 42.4% of respondents said they had experienced delivery challenges depending on geography, whilst 57.6% said they had not.

This result suggests that, depending on where they live, almost half of the customer base can experience logistical challenges, which is crucial information for Lao Brewery's distribution plan. To guarantee uniform service quality across several regions, customized delivery options or regional modifications could be required.

+ Satisfaction with delivery speed.

How satisfied are you with the delivery speed of your orders? ທ່ານພໍໃຈບາບໃດກັບຄວາມໄວໃນການສົ່ງສິນຄ້າ?

151 responses

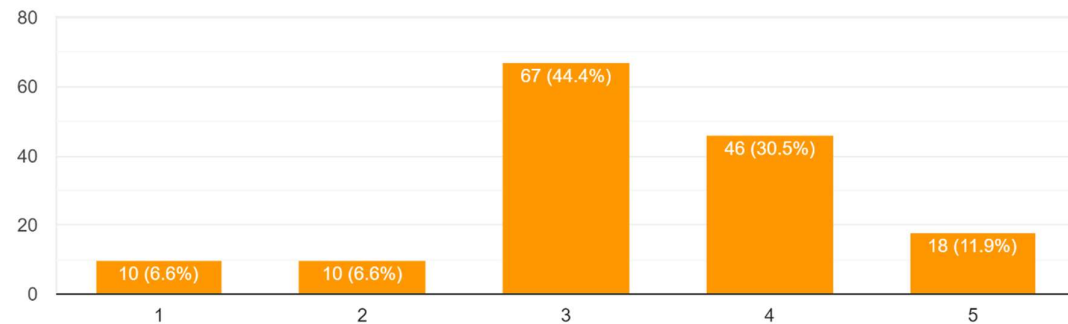


figure 1- 8.Satisfaction with Delivery Speed.. (survey results)

Respondents were given a 5-point Likert scale to use to indicate how satisfied they were with the speed at which Lao Brewery items were delivered, with 1 denoting "Very Dissatisfied" and 5 denoting "Very Satisfied." The majority of participants assessed their satisfaction at level 3 (neutral), with 44.4%, followed by level 4 (satisfied), with 30.5%, as indicated in Figure 1- 8.

However, 6.6% of participants indicated lower satisfaction levels (1 and 2), only 11.9% of respondents indicated excellent satisfaction (rating of 5). The results suggest that although the majority of customers are only moderately happy, delivery expectations can still be met.

+ Frequency of incorrect or damaged orders.

Table 7. Frequency of incorrect or damaged orders. (survey results)

Response	Frequency (approx.)	Percentage
Yes	63	41,7%
No	88	58,3%

Total	151	100%
-------	-----	------

As participants purchased products from Lao Brewery, they were asked if they had ever gotten a damaged or wrong order. As the table 7. shown a smaller percentage of respondents said they had encountered damaged or inaccurate deliveries, with 41,7%, the majority said they had not encountered such problems, with 58,3%.

This suggests that although these situations exist, respondents do not often experience them. However, even a few mistakes can have a detrimental impact on consumer pleasure and trust. Thus, upholding stringent quality control and increasing order correctness continue to be crucial goals for raising total service dependability.

4.1 Digital Engagement and Online Purchasing.

➤ Section 4: Online and digital experience.

+ Experience with online ordering.

Table 8. Online Ordering Experience.(survey results)

Response	Frequency (approx.)	Percentage
Yes	56	37,1%
No	95	62,9%
Total	151	100%

Respondents were asked if they had ever lined up an online order for Lao Brewery products in order to find out the level of consumer engagement with digital sales channels. According to Table 8, 37.1% of respondents said they had placed online orders, but the majority, 62.9%, said they had not.

The results suggest that while an important portion of the client is sensitive to online shopping, the majority still uses traditional, in-person channels. This shows that Lao Brewery has great potential to improve its online ordering system and encourage digital access, particularly among younger or tech-savvy consumers.

+ Preferred payment method.

What payment method do you prefer? ທ່ານນິຍົມວິທີໃນການຈ່າຍເງິນແບບໃດ?

151 responses

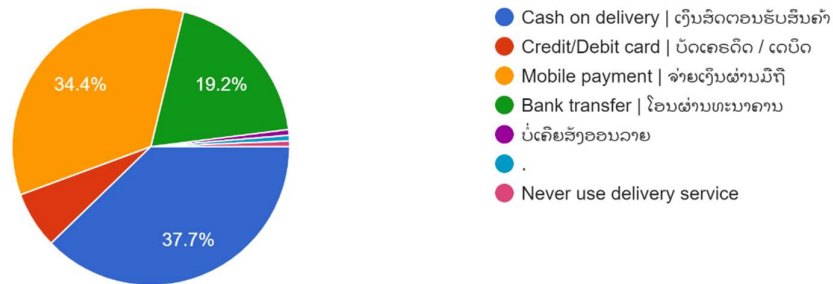


figure 1- 9.Preferred Payment Methods. (survey results)

As purchasing Lao Brewery products, respondents were asked to specify their preferred payment method. The most popular way, as seen in figure 1- 9 , was using a credit or debit card (37.7%), closely followed by bank transfers (34.4%). Only 6.6% of respondents used mobile payments, and some said they had never placed an online transaction or used delivery services, therefore, they chose not to use any payment option.

The general acceptance of bank-based payments over mobile wallets indicates that although the system for digital transactions is expanding, the use of mobile payments is still quite low. These findings emphasize the importance it is to including bank transfer and card-based payment methods when creating automated or digital sales platforms.

+ Barriers to ordering online.

What prevents you from ordering online more frequently? (Select all that apply) ຄວນຫຍັງທີ່ເຮັດໃຫ້ທ່ານບໍ່ຢາກສັ່ງຊື້ອອນໄລນ໌? (ເລືອກໄດ້ຫຼາຍກວ່າ 1 ຂໍ້)

151 responses

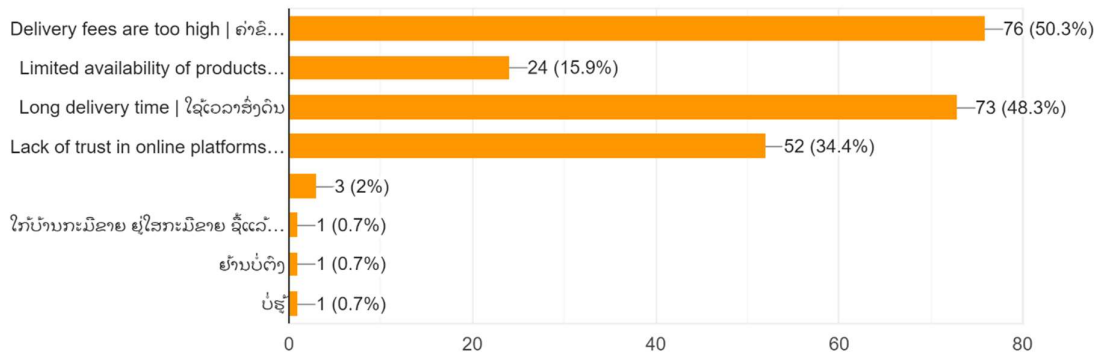


figure 1- 10.Barriers to Frequent Online Ordering (survey results)

Respondents were asked to list every reason why they would not order Lao Brewery products online in order to establish an understanding of the barriers preventing more frequent online purchasing. High delivery costs (50.3%) and lengthy delivery delays (48.3%) were the two most frequent barriers, according to the data, which are shown in figure 1- 10. Another significant worry among participants was the lack of trust in internet platforms (34.4%).

Other less commonly stated explanations included a preference for local in-store purchases owing to convenience, worries that products might not live up to expectations, and restricted product availability online (15.9%). Some respondents said they had no motive to place an online order, or they had nothing to express.

These results suggest that trust and logistical concerns continue to be key barriers to the adoption of internet buying. Offering transparent product displays, increasing platform dependability, and optimizing delivery efficiency could all greatly boost digital engagement.

Chapter 5: Discussion and Conclusion.

5.1 Discussion.

In reaction to changes in the market, this study examined Lao Brewery's changing distribution and logistics environment. Mainly, the study looked at customer preferences, delivery experiences, and views on digital and alternative sales channels like vending machines and e-commerce.

The results showed a number of significant topics. First, even though Lao Brewery has a strong reputation and loyal customers, price sensitivity and the standard of delivery services continue to be important determinants of consumer behavior. Several participants mentioned logistical difficulties, like irregular delivery delays and delivery problems relating to physical location, indicating areas where the company's supply chain needs to be improved.

Additionally, the data indicates that the corporation is still not fully comprehending the potential of its digital sales approach. Even if just a small percentage of customers have ordered online, many are still concerned because of the high cost of shipping, long waiting times, and low confidence in online platforms. Consumers' willingness to accept bank transfers and credit/debit payments, however, suggests that they are ready to accept digital commerce, provided that it is ensured by more dependable, effective logistics.

Vending machines offer a chance to balance cost-effectiveness and convenience when adjusting to new sales channels and also new trends in Lao. The study makes the recommendation that these machines be positioned in high-demand locations, such as convenience stores and residential neighborhoods, by examining consumer preferences and purchasing locations.

5.2 Conclusion.

The purpose of this study was to investigate how Lao Brewery's logistics and distribution performance was affected by changing market dynamics, including competition, material costs, and new distribution models. A consumer-focused survey allowed the study to achieve its primary goals:

- It emphasized the issue of increased competition from regional business owners, showing that finding a balance between brand loyalty, quality, and delivery service is necessary to keep customers.

- The study pointed out how shipping and fulfillment were not running smoothly and showed what consumer expectations are in delivery and digital buying.
- It offered insights into how Lao Brewery might optimize its logistics system to support new channels of sale like e-commerce and vending machines.

According to the overall results of the study, Lao Brewery needs to improve its logistical processes to adapt to growing demands and stay competitive in a changing consumer market.

5.3 Recommendations.

Depending on the findings, from my aspect, the following are the suggested strategic recommendations:

- Optimize the flexibility and speed of Logistics: To satisfy both price-sensitive and convenience-driven customers, offer levels of delivery alternatives, such as free or affordable standard delivery and a quicker, paid express option.
- Enhance Confidence in Online Orders: To increase customer confidence, Lao Brewery should create an online experience within Lao Brewery online platforms through partnering with popular logistics services, real-time tracking, and schedules of deliveries..
- Install Vending Machines in High-Traffic Areas: The consideration is where to place the vending machines in high concentrations of universities, office areas, and convenience stores where the product is in demand. Streamline inventory positions and amounts using analytics.
- Leverage Warehouse Automation and Inventory Technology: Replace the old method of controlling stock in the warehouse with technology and invest in automation of the warehouse that will reduce the stock out. It will also enhance precision and respond faster to change in demand or the cost of raw materials.
- Consider Local Sourcing Strategy: To address the risk associated with the change in exchange rates and the prices of imported raw materials, the Lao brewery must consider the opportunities of local sourcing, supplier diversification or long-term contracts to stabilize the price of inputs.

5.4 Limitations of the study.

During the time of this study, it provided useful insights, but it also had several limitations. First, the data were collected through the online survey, which may miss the data from the population that could not access digital technology. Second, instead of using direct financial

analysis, some questions, especially those relating to changes in material costs, were interpreted indirectly through consumer pricing sensitivity. Lastly, the study was cross-sectional and could not identify any long-term changes.

5.5 Suggestions for future research.

Although this study provides insightful information on consumer behavior and the logistical difficulties Lao Brewery has, further research might concentrate on new areas to confirm these results.

First, by incorporating an operational perspective to consumer-based data, the viewpoints of logistics managers and supply chain experts would benefit the research. More thoughtful and useful suggestions to improve productivity and service delivery may result from this.

In addition, considering that access to digital platforms and purchases might differ significantly by region, future research might compare customer behavior in rural and urban areas.

Finally, an accurate financial cost-benefit analysis of the deployment of automated warehouses and vending machines will provide important data regarding the sustainability and financial impact of these tactics in the context of the Lao market.

Chapter 6: Summary.

6.1 Summary of the research study.

The purpose of this study was to assess how Lao Brewery Company may strategically increase its distribution and logistics in response to changing market conditions. Key developments in the market, such as the development of digital sales channels, increased competition from regional business owners, shifting raw material prices, and evolving consumer expectations, served as the reason for the study. An online survey that examined customer behavior, delivery experiences, and views toward online buying was used to collect data from 151 respondents using a quantitative research methodology.

The results of the research provide thorough responses to the four primary questions of the study:

1. What is the impact of increased competition from local enterprises on Lao Brewery's logistics operations?

As the survey results display that consumers value product quality and brand loyalty, some of the answers are highly price-sensitive and increasingly expect efficiency, reliable delivery. This means that local competitors may attract consumers by providing better convenience and logistics in addition to competitive pricing. In order to stay competitive, Lao Brewery's logistics operations must change to incorporate quicker delivery models and better customer service.

2. What are the logistical implications of fluctuating currency exchange rates on the cost of imported raw materials, and how could Lao Brewery decrease these risks in its inventory management and supply chain?

Although the survey did not directly proportion of cost changes, due to the high sensitivity of consumers to price changes, any increase in the cost of its products due to exchange rate fluctuations might hurt sales, hence to reduce this risk, to reduce the focus on imported ingredients, Lao Brewery ought to consider cost stabilizing supplier contracts, local sourcing opportunities, and inventory optimization.

3. How could Lao Brewery optimize its logistics network to effectively support new sales channels?

Around 37.1% of the respondents have already placed orders online, and many cited high delivery charges, long queues, and lack of trust in online sales as barriers, considering this, E-commerce has potential to grow, thus the company can leverage its

logistics network by developing the speed of delivery, real-time tracking, and enhancing its electronic sales platform.

4. What strategic logistics solution could Lao Brewery use to improve its overall distribution and supply chain management in response to changing market trends and competitive pressures?

The results of the given research lead to the concept of a comprehensive logistics strategy, including the deployment of vending machines in places with high demand, automating warehouses to improve their inventory management, and adopting the delivery services of various degrees to suit the needs of different clients. With such changes, the Lao Brewery would have the opportunity to control costs, enhance customer satisfaction, and revise its distribution strategy..

In summary, the study indicates that Lao Brewery needs to proactively adapt its supply chain to satisfy evolving consumer needs. Even though the business already maintains high levels of consumer identification and brand loyalty, it needs to change its distribution methods and use digital sales channels to be competitive. The report offers an outline for long-term efficiency, competitiveness, and customer satisfaction, as well as a workable framework for such a shift that is based on actual consumer data.

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Appendix

1: Survey Questionnaire.

Consumer Insights to Support Future Distribution of Lao Brewery: A Study on the Feasibility of Vending Machines and Automated Warehousing.

Dear Participant

This questionnaire is part of a research study aimed at understanding consumer behavior and delivery experiences to help Lao Brewery explore new distribution methods, such as vending machines and automated warehouses. Your responses will be kept confidential and used solely for academic purposes.

The survey takes about 3–5 minutes to complete. All your answers will stay private and will only be used for research.

Your involvement is necessary and will contribute to the success of this research.

I sincerely appreciate your time and helping hands.

1. Gender (ຄູນ).

- Male (ຊາຍ)
- Female (ຍິງ)

2. Income Range (per month)

- Below 2,000,000 LAK (less than \$100 USD)
- 2,000,000 - 5,000,000 LAK (\$100 - \$250 USD)
- 5,000,001 – 10,000,000 LAK (\$250 - \$500 USD)
- Above 10,000,000 LAK (more than \$500 USD)

3. Current status (ສະຖານະພາບປະຈຸບັນ)

- Student (ນັກຮຽນ / ນັກສຶກສາ)
- Employee (ພະນັກງານ)
- Business owner / Entrepreneur (ຜູ້ປະກອບການ)
- Freelancer / Self-employed (ຜູ້ປະກອບອາຊີບອິດສະຫຼະ)
- Unemployed / Job seeker (ຫວ່າງງານ / ກຳລັງຫາວຽກ)
- Retired (ກະສຽນ)

Section 2: Consumer Behavior and Preferences (ພຶດຕິກຳແລະຄວາມມັກຂອງຜູ້ບໍລິໂພກ).

4. How often do you purchase Lao Brewery products? ທ່ານຊື້ຜະລິດຕະພັນຂອງ Lao Brewery ຫຼາຍປານໃດ?

- Once a day | ມື້ລະ 1 ຄັ້ງ
- Multiple times a week | ຫຼາຍຄັ້ງຕໍ່ອາທິດ
- Once a week | ອາທິດລະ 1 ຄັ້ງ
- Once a month | ຕົວອນລະ 1 ຄັ້ງ

- Occasionally | ບາງຄັ້ງ
 - Rarely | ແທບບໍ່ເລີຍ
5. What type of Lao brewery's product do you usually buy? (Select all that apply) | ທ່ານ ມັກຊື້ຜະລິດຕະພັນປະເພດໃດຂອງເບຍລາວ? (ເລືອກໄດ້ຫຼາຍກວ່າ 1 ຂໍ້).
- Beer | ເບຍ
 - Mineral water, still water | ນໍ້າແຮ່, ນໍ້າທໍາມະດາ
 - Energy drinks | ເຄື່ອງດື່ມຊຸກກໍາລັງ
 - Carbonated soft drink | ນໍ້າອັດລົມ
 - Juice-based drinks | ນໍ້າຜົນໄມ້
 - Other (please specify)
6. Where do you usually purchase Lao Brewery's products? | ບົກກະຕິທ່ານຊື້ຜະລິດຕະພັນຂອງເບຍ ລາວຈາກໃສ?
- Supermarkets
 - Convenience stores
 - Bars/restaurants
 - Online platforms
 - local shop/stores
7. What influences your decision to buy our products? (Select all that apply) | ແມ່ນຫຍັງທີ່ມີ ຜົນຕໍ່ການຕັດສິນໃຈຂອງທ່ານໃນການຊື້ຜະລິດຕະພັນ?
- Price | ລາຄາ
 - Brand loyalty | ຄວາມມັກໃນອີ່ຫໍ້
 - Promotions/discounts | ໂບຣໂມຊັ້ນ / ສ່ວນຫຼຸດ
 - Product Quality | ຄຸນນະພາບສິນຄ້າ
 - Recommendations from others | ການແນະນໍາຈາກຜູ້ອື່ນ
 - Habit (I'm used to drinking it regularly) | ຄວາມຄຸ້ນຊື່ນ
 - Comfort & taste (I find it easy and enjoyable to drink) | ດື່ມງ່າຍ ແລະ ຮູ້ສຶກດີ

Section 3: Logistics and delivery experience.

8. Would you be willing to pay extra for fast delivery? ທ່ານຍິນດີຈ່າຍເພີ່ມເພື່ອການຂົນສົ່ງທີ່ໄວກວ່າຫຼືບໍ່?

- Yes | ແມ່ນ
- No | ບໍ່ແມ່ນ

9. How often do you experience delays in deliveries? ທ່ານປະສົບບັນຫາການສົ່ງສິນຄ້າຊ້າຫຼາຍຊ່າໃດ?

- Often | ບໍ່ຄ່ອຍໄດ້
- Sometimes | ບາງຄັ້ງ
- Rarely | ບໍ່ຄ່ອຍເກີດ
- Never | ບໍ່ເຄີຍເກີດ

10. Have you experienced any issues with delivery due to your location? ທ່ານເຄີຍປະສົບບັນຫາໃນການສົ່ງເພາະສະຖານທີ່ຢູ່ອາໄສຂອງທ່ານບໍ່?

- Yes | ແມ່ນ
- No | ບໍ່ແມ່ນ

11. What type of residence do you live? ທ່ານອາໄສຢູ່ໃນອາຄານປະເພດໃດ?

- Apartment | ອະພາດເມັນ
- House | ຕືອນ
- Flat | ຫ້ອງເຊີ່
- Other (please specify)

12. How satisfied are you with the delivery speed of your orders? ທ່ານພໍໃຈປານໃດກັບຄວາມໄວໃນການສົ່ງສິນຄ້າ?

- Very satisfied | ພໍໃຈຫຼາຍ
- Satisfied | ພໍໃຈ
- Neutral | ຍອມຮັບໄດ້
- Dissatisfied | ບໍ່ພໍໃຈ
- Very dissatisfied | ບໍ່ພໍໃຈຢ່າງໜັກ

13. Have you received damage or an incorrect order? ທ່ານເຄີຍໄດ້ຮັບສິນຄ້າທີ່ເສຍຫາຍ ຫຼື ບໍ່ຖືກຕ້ອງບໍ່?

- Yes | ຄມ່ນ
- No | ບໍ່ຄມ່ນ

Section 4: Online and digital experience.

14. Have you ever ordered Lao Brewery products online? ທ່ານເຄືອສັ່ງຊື້ຜະລິດຕະພັນຂອງ Lao Brewery ຜ່ານອອນໄລນ໌ບໍ?

- Yes | ຄມ່ນ
- No | ບໍ່ຄມ່ນ

15. What payment method do you prefer? ທ່ານນິຍົມວິທີໃນການຈ່າຍເງິນແບບໃດ?

- Cash on delivery | ເງິນສົດຕອນຮັບສິນຄ້າ
- Credit/Debit card | ບັດເຄຣດິດ / ເດບິດ
- Mobile payment | ຈ່າຍເງິນຜ່ານມືຖື
- Bank transfer | ໂອນຜ່ານທະນາຄານ
- Other (please specify).

16. What prevents you from ordering online more frequently? (select all that apply) ຄມ່ນ ຫຍັງທີ່ເຮັດໃຫ້ທ່ານບໍ່ຢາກສັ່ງຊື້ອອນໄລນ໌ບໍ? (ເລືອກໄດ້ຫຼາຍກວ່າ 1 ຂໍ້)

- Delivery fees are too high | ຄ່າຂົນສົ່ງແພງ
- Limited availability of products online | ສິນຄ້າມີຈຳກັດ
- Long delivery time | ໃຊ້ເວລາສົ່ງດົນ
- Lack of trust in online platforms | ບໍ່ເຊື່ອໃຈແພລດຟອມອອນໄລນ໌

DECLARATION

KOMPADITH Santisouk, student Neptun code: KPHMT7
as a consultant, I declare that I have reviewed the final thesis that I have informed the student
of the requirements, legal and ethical rules for the correct handling of literary sources.

I recommend / do not recommend¹ the final thesis

The thesis contains a state or official secret: no

Date: 03/10/2025



Academic supervisor:

¹ The appropriate one should

DECLARATION

The public access and authenticity of the thesis/dissertation/portfolio¹

Student's name: KOMPADITH SANTISOUK

Student's Neptun code: KPHMT7

Title of thesis: Future Trends in Distribution of Lao Brewery

Year of publication: 2025

Name of the consultant's institute: Hungarian University of Agriculture and Life Sciences

Name of consultant's department: Institute of Agricultural and Food Economics

I declare that the final thesis submitted by me is an individual, original work of my own intellectual creation. I have clearly indicated the parts of my thesis or dissertation which I have taken from other authors' work and have included them in the bibliography.

If the above statement is untrue, I understand that I will be disqualified from the final examination by the final examination board and that I will have to take the final examination after writing a new thesis.

I do not allow editing of the submitted thesis, but I allow the viewing and printing, which is a PDF document.

I acknowledge that the use and exploitation of my thesis as an intellectual work is governed by the intellectual property management regulations of the Hungarian University of Agricultural and Life Sciences.

I acknowledge that the electronic version of my thesis will be uploaded to the library repository of the Hungarian University of Agricultural and Life Sciences. I acknowledge that the defended and

- not confidential thesis after the defense
- confidential thesis 5 years after the submission

will be available publicly and can be searched in the repository system of the University.

Date: 03/10/2025

Santisouk
K. Santisouk

Student's signature

Declaration of Students and Doctoral Candidates on the Use of Artificial Intelligence (AI)”

1. general information:

Name of the student:	SANTISOUK KOMPADITH
Neptun ID:	KPHMT7
Level of program (mark with X):	<input checked="" type="checkbox"/> BSc/BA <input type="checkbox"/> MSc/MA <input type="checkbox"/> Doctoral School (PhD) <input type="checkbox"/> Other:
Name and code of the subject*:	THESIS
Title of the work:	Future Trends in Distribution of Lao Brewery.

* Not required to be completed in the case of a doctoral dissertation.

2. Declaration on the Use of AI

I, the undersigned, fully aware of my ethical responsibility, make the following declaration:

(Please choose one of the options below!)

A) I have not used any artificial intelligence system or service.

(If you selected this option, completing the subsequent tables is not required.)

B) I have used an artificial intelligence system or service.

(Please fill in the relevant tables!)

3. Details of Artificial Intelligence Usage

TABLE I: Assistant or Minor Usage (e.g., translation, language proofreading, brainstorming, etc.)

(For these uses, attaching the specific prompts and responses is not required.)

Purpose of Use	Name and Version of the AI Tool Used	Affected Section (if not applicable to the entire text)
Language optimization, brainstorming, supporting background research, and fact-checking about Laos and company	Chat GPT-4	Entire

TABLE II: Significant Content Contribution (e.g., generating an entire figure or a longer text section)

(In these cases, documenting the key prompts used and the raw responses provided by the AI, and attaching them as an appendix to the work, is required.)

Purpose of Use	Name, Version, and Access Information of the AI Tool Used	Exact Number of the Affected Chapter / Figure / Table	Entry Number of the Appendix Containing the Prompt Log

3/A. Additional Rules Prescribed by the Lecturer (if any)

If the instructor or supervisor of the course has established specific rules or expectations regarding the use of AI tools, please summarize them in the field below:

For example: prohibition of AI use for certain types of tasks; only specific tools are permitted; different citation requirements; documentation format, etc.

Rules Prescribed by the Lecturer or Supervisor

.....

.....

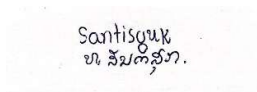
.....

.....

4. Declaration Applicable to All Students:

I declare that I have critically reviewed, edited, and incorporated any content potentially generated by AI in all cases. I take full responsibility for every element of the submitted work, including its originality and scientific validity. I acknowledge that the Hungarian University of Agriculture and Life Sciences may check the submitted work with an artificial intelligence detector and may initiate proceedings if my declaration is found to be false or incomplete.

Place and Date: Hungary, 2025/10/27



Signature of the Student



Signature of the Advisor/Supervisor