

THE CHAIN OF VALUE ANALYSIS OF ORGANIC COFFEE BEAN AROMA IN KEKE KOKA PRODUCTS RAMBIPUJI SUBDISTRICT JEMBER REGENCY INDONESIA



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To cite this article:

Tarigan, R., & Karo-Karo, E. F. (2025). The Chain of Value Analysis of Organic Coffee Bean Aroma in Keke Koka Products Rambipuji Subdistrict Jember Regency Indonesia. *JIA (Jurnal Ilmiah Agribisnis) : Jurnal Agribisnis Dan Ilmu Sosial Ekonomi Pertanian*, 10(5), 530–545. <https://doi.org/10.37149/jia.v10i5.2114>

Received: June 03, 2025; **Accepted:** November 28, 2025; **Published:** November 30, 2025

ABSTRACT

Indonesia is among the world's foremost coffee producers, with robusta beans from Jember Regency playing a substantial role in national production. This study examines the value chain of natural coffee beans in Keke Koka, an agroindustry in Rambipuji District, Jember Regency, East Java, Indonesia. A qualitative descriptive methodology was utilized, including purposive sampling, with Keke Koka designated as the sole coffee-based fragrance processor in the area. Data were gathered from January to March 2025 via interviews with the business owner, five production workers, and pertinent institutions, supplemented by observations and secondary sources. The research objectives were evaluated utilizing Porter's Value Chain Analysis framework to investigate the elements of primary and support activities. The results identify three primary participants: 1) PUSLITKOKA, a supplier of premium robusta coffee beans; 2) Keke Koka, which undertakes the processes of roasting, fermenting, and aroma mixing; and 3) A network of local and interregional distributors that enhances market penetration. Supporting institutions, such as the Cooperative Office and the Industry and Trade Office, offer training, quality assurance guidance, and certification facilitation. The collaboration among these entities produces a specialized product that gains a competitive advantage from local resources and innovation. Nonetheless, the firm faces obstacles, including outdated technology, limited digital marketing efforts, and insufficient product certification. Recommendations include sustaining collaboration with PUSLITKOKA, implementing advanced processing technologies, enhancing digital marketing strategies, and obtaining halal and BPOM certification. This research enhances understanding of rural agroindustrial value chains and provides pragmatic insights to improve the competitiveness of small-scale agroindustries in coffee-producing areas.

Keywords: agroindustry; natural coffee aroma; Porter's analysis; robusta coffee; value chain.

INTRODUCTION

Indonesia is a developing nation in which the agricultural sector constitutes the principal means of livelihood for the majority of its populace (Simatupang *et al.*, 2025). Consequently, a significant portion of the population relies on the agricultural sector for their sustenance. The agricultural sector is a key component that can bolster the national economy. Coffee is a significant agricultural commodity within the plantation subsector. The advantages of coffee cultivation encompass enhancing farmers' income and welfare via margins and partnerships, fostering supporting sectors like agrotourism, generating foreign exchange for the nation through the export of raw or processed coffee beans, and promoting the development of micro, small, and medium enterprises in coffee bean processing (Afriliana, 2018). The inhabitants of Jember plant robusta coffee, which thrives in lowland regions at elevations up to 800 meters above sea level, with temperatures between 24 and 30 degrees Celsius and annual precipitation of 2,000-3,000 mm (Wardhana *et al.*, 2019).



Keke Koka is an agro-industrial enterprise in Jember Regency focused on diversifying coffee products. The firm is located in Dusun Gayam, Rambigundam, Rambipuji District, Jember Regency. Since 2018, Keke Koka has been transforming robusta coffee beans into value-added products, significantly contributing to the natural coffee bean fragrance value chain. This product is distributed to vendors in the Jember Regency region and beyond, encompassing Malang, Surabaya, Kalimantan, Sumatra, Bangka Belitung, and Bali.

The Indonesian coffee agroindustry possesses significant potential for promotion, driven by substantial demand in both domestic and international markets (Caesarina *et al.*, 2017). Agroindustry is an industrial sector that transforms agricultural products into various forms to meet consumer demands, thereby altering their functionality. This process extends the shelf life of perishable agricultural goods, enhances their quality, and consequently elevates prices, added value, and the significance of the processing industry within the production value chain (Udayana, 2011). Additional research indicates that the development of new coffee processing techniques, such as Gayo wine coffee production, might increase farmers' value and improve business sustainability (Juanda *et al.*, 2022). It may be stated that agroindustry, through processing operations, would enhance the value of agricultural goods and increase demand for their derivatives. The field investigation revealed that Jember's robusta coffee products are marketed as fresh coffee, referred to as red cherry beans, and processed into coffee powder. Consequently, product diversification is essential to increase Jember's robusta coffee market share and improve profitability.

According to Lihawa *et al.*, (2021), the value chain analysis, grounded in Porter's (1985) theory, consists of primary and support activities. The principal activities encompass the physical production of goods, marketing, distribution to clients, and post-sales support. Supporting operations enhance the overall business by supplying infrastructure or inputs that facilitate the continuation of primary activities. The study by Matrutry *et al.* (2023), entitled "Value Chain, Corporate Farming, and Value Addition of Coffee Commodities in Temanggung Regency," indicates that the value chain of coffee commodities in Temanggung Regency comprises input, production, collection, processing, and marketing or distribution to consumers. Each of these chains presents challenges, including the consistent supply and pricing of agricultural inputs, land ownership issues, inadequate quality standards in coffee harvesting due to some farmers' unripe picking, suboptimal processing methods, and coffee marketing, particularly exports, which remain predominantly controlled by external exporters. If these diverse concerns are effectively addressed, the substantial added value from the farming operations (value chain) will be more readily realized by the farmers of Temanggung Regency.

The research conducted by Asriani & Suryani (2021) revealed that the subsystems integral to agribusiness activities—producers, processors, distributors, and supporting components—are underperforming due to insufficient reciprocal interactions and inadequate coordination. The value chain analysis revealed that processing has not yet generated economic value due to subpar product quality and a lack of diversification, as only green bean products are available. The analysis results by Umroh *et al.* (2024) revealed that the value chain determinants of downstream coffee processing products include green bean processing, roasting, and grinding. Green bean processing can enhance value by 47.5% for robusta varieties, and measures to augment farmers' income are suggested through institutional design aimed at mitigating risks associated with their activities and facilitating processing. Situmorang's (2017) research identified that the value chain activities at PT. X encompasses primary activities, including raw material handling, warehousing, inventory management, equipment and machinery maintenance, production processes, packaging, finished goods handling, product collection, distribution, promotion, pricing, sales force management, complaint resolution, and consumer engagement. Supporting operations encompass general management, finance, staff recruiting, remuneration, training and development, equipment adequacy, access to parent company marketing, and procurement of equipment and machinery. The participants in the value chain activities comprise suppliers, PT. X as the product maker, and cafés as internal consumers. The supply of raw materials by suppliers to the production process of coffee products (output) that enhances value from green coffee beans to packaged roasted coffee goods. The Coffee Products (Output) prepared for distribution encounter difficulties conveying information effectively. Idsan *et al.* (2022) identified that the value chain of robusta coffee in Kepahiang Regency comprises four key actors: farmers supplying cherry and raw coffee beans, small collectors gathering coffee beans and producing green beans, large collectors providing green beans to exporters, and home industries processing robusta coffee into final products like ground coffee for consumer sale.

Although many studies have investigated the coffee value chain (Juanda *et al.*, 2022; Umroh *et al.*, 2024), focusing on cultivation, processing quality, and export performance, there is a scarcity of studies addressing the downstream processing of coffee into non-consumable items. Previous

research has not examined the integration of stakeholders, technological applications, and marketing strategies in micro-scale agroindustries that manufacture natural coffee scents. The research also lacks a comprehensive understanding of how these firms operate within the broader value chain, especially in rural innovation contexts.

Keke Koka is a unique example of this sector, being the only producer of natural coffee fragrance in Jember Regency. Since 2018, Keke Koka has converted robusta coffee beans into value-added aromatic products sold locally and across other Indonesian provinces. Nonetheless, the configuration of its value chain, the efficacy of its core and ancillary operations, and its engagement with suppliers and distributors have not been rigorously examined.

Notwithstanding its significant potential in coffee production and processing, Jember Regency predominantly exports its coffee in raw form (red cherries) or conventional powder, hence constraining added value and market diversification. Previous studies have predominantly focused on the sensory characteristics of coffee (Cai et al., 2022) and the environmental consequences of processing techniques (Simatupang et al., 2025), while offering scant consideration to alternative product development, including natural coffee aromas. Research on the value chain dynamics of innovative products, particularly in premium-producing areas such as Jember, is limited, especially when contrasted with international examples from nations like Ethiopia and Brazil. This study aims to fill that gap by examining the structure and principal individuals involved in the natural coffee bean fragrance value chain established by Keke Koka. The results aim to guide smallholder farmers, processors, and policymakers in recognizing lucrative, market-focused solutions for product diversification. The study also provides a localized perspective on the broader discussion of rural agroindustry advancement and value-added processing. This research aims to examine the value chain structure of natural coffee bean fragrance goods in Keke Koka, an agroindustry situated in Rambipuji District, Jember Regency, East Java, Indonesia.

MATERIALS AND METHODS

The study was conducted at the coffee agroindustry processing enterprise, Keke Koka, located in Dusun Gayam, RT 001, RW 025, Rambigundam, Rambipuji District, Jember Regency, from January to March 2025. The research area and participants were intentionally selected (purposive sample) as Keke Koka is the sole agroindustry involved in aromatherapy/natural coffee in Jember Regency. Keke Koka processes robusta coffee sourced from PUSLITKOKA, which serves as a raw material distributor to fulfill demand.

The data analysis approach in qualitative descriptive research involves processing and analyzing data to formulate a conclusion. The sample determination is conducted deliberately, as noted by Sugiyono (Lenaini, 2021). Primary data were obtained from six participants, comprising the owner (as the key informant) and five employees engaged in different phases of manufacturing. This sought to offer a more comprehensive viewpoint and enhance the credibility of the results. Data collection was executed via semi-structured interviews and non-participant observation. The interview guide comprised open-ended questions to investigate supply chain roles, production processes, marketing strategies, human resource practices, and technological utilization. Observations were performed utilizing a checklist to record physical infrastructure, equipment, production flow, packaging methods, and distribution systems. Secondary data were acquired from the Central Statistics Agency, municipal government entities, and pertinent literature.

The data were examined utilizing Porter's Value Chain Analysis framework, comprising five primary activities (inbound logistics, operations, outbound logistics, marketing and sales, and services) and four support activities (firm infrastructure, human resource management, technology development, and procurement). Each activity was evaluated by categorizing interview transcripts and field notes into themes. The categories were subsequently aligned with the value chain framework to discern strengths, shortcomings, and value-enhancing processes. This method facilitated a rigorous examination of the creation, enhancement, and delivery of value along the coffee scent production chain at Keke Koka.

This method contrasts with the functional approach, as it seeks to deconstruct the company and identify its strengths and weaknesses. Porter asserts that each corporation should be regarded as a compilation of operations undertaken to create, produce, construct, and market items. The company's value chain and operational behavior embody its history, strategy, and execution design, with the economic conditions that facilitate these activities. The overall value is denoted by the value chain, comprising margins and value activities. Porter (1985) delineates two principal categories of value activities: primary activities and support activities. Core activities encompass the production of tangible goods, their sale and transfer to purchasers, and subsequent customer support. Support

activities, conversely, facilitate main activities and one another by delivering procurement, technology, human resources, and overarching operational functions, as depicted in Figure 1.

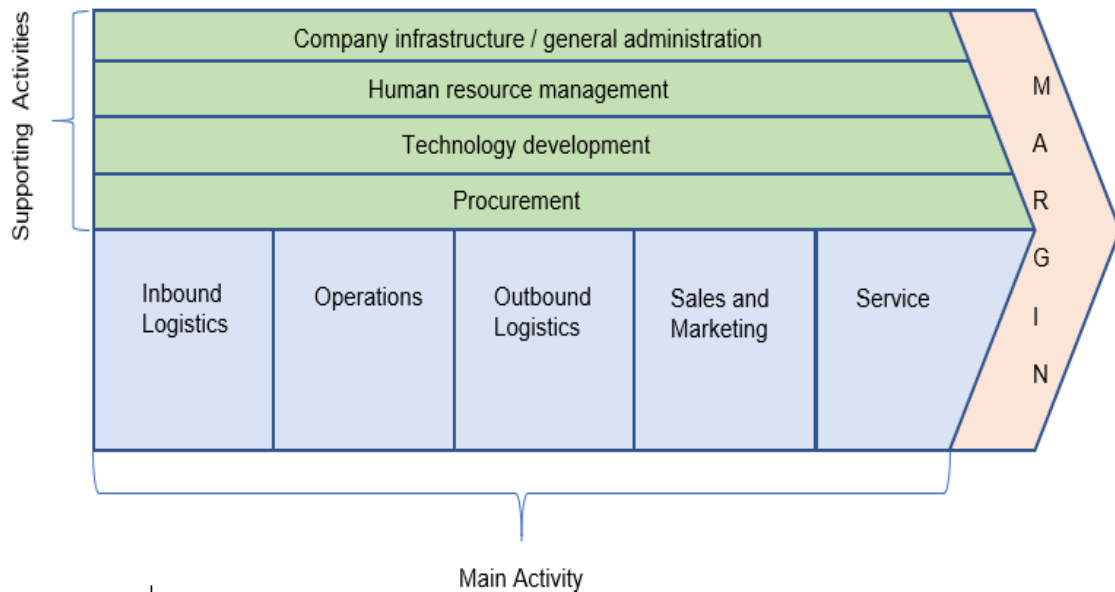


Figure 1. Value chain analysis
 Source: Porter (1985); (Lihawa et al., 2021)

Five primary operations are involved in product manufacture and sales, customer transfers, and post-purchase support. The following are the primary activities involved in creating goods or services:

1. The activity that supplies inputs for goods or services is known as inbound logistics.
2. Operations are the processes that convert input into products or services.
3. Delivering goods to customers is known as outbound logistics.
4. The process of promoting and selling goods to customers is known as marketing and sales.
5. Service is the act of offering assistance to customers. Four activities that complement the primary activities are called supporting activities.

The following are the support activities:

1. Procurement: The process of acquiring supplies, machinery, and other assets for the business's operations.
2. Technology Development: Activities about the creation, application, and administration of technology utilized in business operations and the innovation of new goods and services.
3. Human Resources Management: Tasks related to the administration of human resources, including hiring, training, staff development, and performance evaluation.
4. The infrastructure of the company: operations involving finance, strategic planning, general management, and other administrative tasks.

Margins depend on a company's effectiveness in executing its core and ancillary activities. One way to gain a competitive edge is to modify the value chain, enabling lower-cost production or the development of products that distinguish themselves from competitors' offerings. Value chain analysis entails examining activities that provide value both within and externally to the organization. Value originates from raw materials and extends through the processed product to customers post-sale. Value chain analysis enables firms to comprehend the value chain that influences the product. These operations are analyzed to ascertain their contribution to the product's value. If the activity is valuable, it will be used and enhanced to maximize its value. If not, the activity ought to be discontinued. Value chain analysis is the methodology by which a corporation assesses the costs associated with operations, including the procurement of raw materials, production of goods, and marketing efforts. Value chain analysis enables firms to more effectively identify their strengths and weaknesses, especially in relation to competitors' value chain analyses and longitudinal data assessments. The objective of value chain analysis is to identify the locations of cost advantages or disadvantages across the value chain, spanning from raw materials to customer service (Samper *et al.*, 2017).

RESULTS AND DISCUSSION

Features of Keke Koka's Value Chain for Natural Coffee Bean Processing

The value chain is one of the ways companies analyze all the activities they undertake, from the provision of raw materials and the production process to the marketing of products that reach consumers (Isini *et al.* 2022). However, from a business perspective, as analyzed by Sampit *et al.* (2016), the value chain is a series of steps or stages that transform inputs into outputs valuable to consumers. These activities aim to generate profit for the company. The main activities consist of inbound logistics, operations, outbound logistics, marketing and sales, and service. Meanwhile, the supporting activities consist of company infrastructure, human resource management, technology development, and procurement (Soekartawi, 2001). The stages of the value chain for the natural coffee bean fragrance at Keke Koka are shown in image two below:

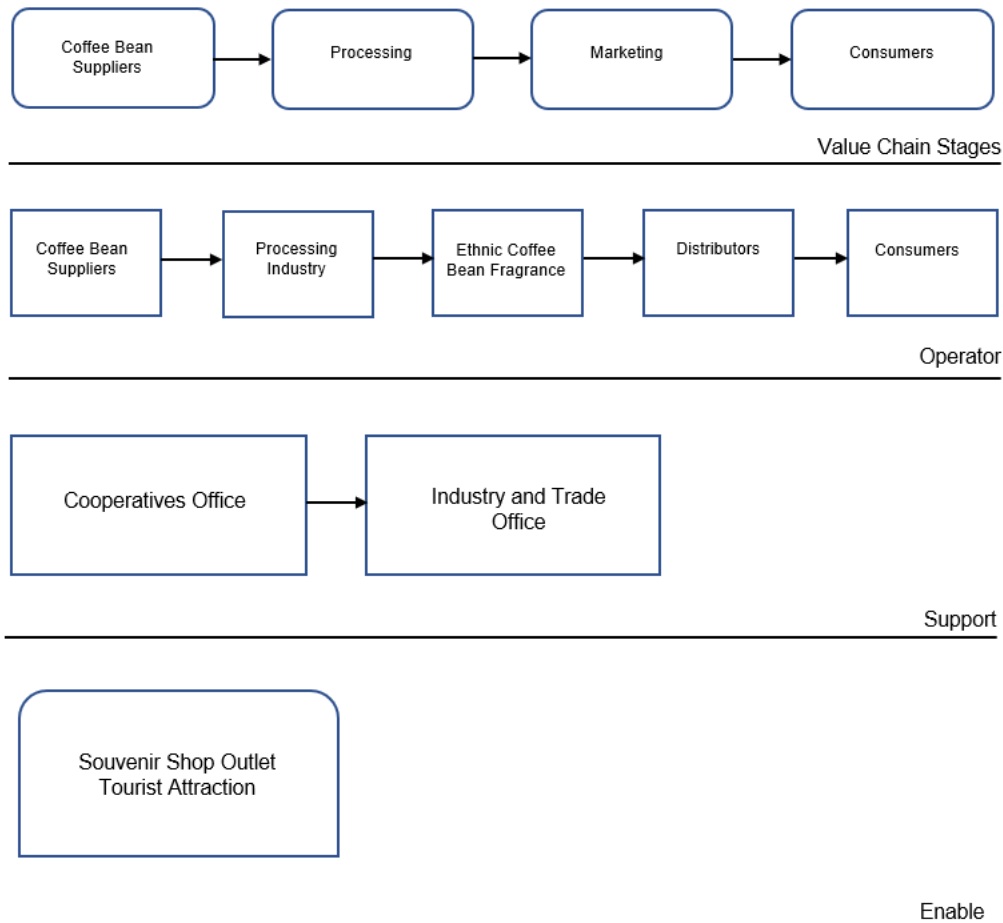


Figure 2. Value chain in the general processing of natural coffee beans at Keke Koka

The value chain stages of the natural coffee bean fragrance product at Keke Koka encompass three primary participants: PUSLITKOKA Jember Regency serves as the principal source of robusta coffee beans, Keke Koka functions as the processing unit, and a network of wholesalers operates locally and in regions like Malang, Surabaya, Kalimantan, Sumatra, Bangka Belitung, and Bali. Supporting institutions also fulfill a vital function. According to conversations with the proprietor, Mrs. Ginika Puswati, Keke Koka obtains direct institutional assistance from the Cooperative Office and the Industry and Trade Office, which offer capacity-building initiatives. This encompasses training on product quality, processing methodologies, industrial standards, halal certification, and BPOM compliance (Figure 2). The participation of these entities demonstrates the complex support framework that sustains the value-generating process. The training programs provided are aligned with the strategic objectives of enhancing product uniformity, regulatory compliance, and market readiness-essential factors for small-scale agroindustries aiming to compete in larger markets.

Table 1. Value chain of natural coffee bean fragrance at Keke Koka

Commodity		Coffee Beans		
Company		Keke Koka		
Main Activities	Incoming Logistics	Operations	Outgoing Logistics	Marketing, Sales, and Service
	<ol style="list-style-type: none"> 1. Providing the raw materials of coffee beans used for the production process 2. Sending raw materials to the production site of natural coffee bean fragrances 	<ol style="list-style-type: none"> 1. Processing coffee beans to produce natural coffee bean fragrances 2. Packaging natural coffee bean fragrance products 	<ol style="list-style-type: none"> 1. Natural coffee bean fragrance products are sent to local distributors in Jember and out-of-town distributors. 	<ol style="list-style-type: none"> 1. Natural coffee bean fragrance products are sold to distributors in Jember Regency and marketed to distributors in various cities, including Malang, Surabaya, Kalimantan, Sumatra, Bangka Belitung, and Bali. 2. Natural coffee bean fragrance product packaged in 25 grams 3. The price given is Rp 25,000 per package
Infrastructure	<ol style="list-style-type: none"> 1. There is adequate road access to the Keke Koka natural coffee bean fragrance production site. 2. The equipment used is in good condition. 	<ol style="list-style-type: none"> 1. Tools used to produce natural coffee bean fragrances include: roasting machine, stove, spatula, spoon, tray, plastic container, perforator, digital scale, scissors, glue gun, and lighter. 2. The building that serves as a production site for natural coffee bean fragrances 3. Various materials are used to produce natural coffee bean fragrances. 	<ol style="list-style-type: none"> 1. There is adequate road access and transportation to distribute the natural coffee bean fragrance products to the distributors. 	<ol style="list-style-type: none"> 1. Collaborating with distributors in the Jember Regency area and outside the city to market natural coffee bean fragrance products 2. There are adequate communication facilities to sell natural coffee beans 3. The service provided is very good to consumers, such as responding to criticism and suggestions

Table 1. Value chain of natural coffee bean fragrance at Keke Koka

Commodity		Coffee Beans		
Company		Keke Koka		
Main Activities	Incoming Logistics	Operations	Outgoing Logistics	Marketing, Sales, and Service
Human Resource Management	<ol style="list-style-type: none"> The supplier of coffee beans comes from Jember Regency, namely PUSLITKOKA Labor to produce coffee beans until they become ready-to-sell natural coffee fragrance products The gender of the workforce is female and male The education level of the workforce from junior high school to senior high school The workforce consists of the local community around the business 	<ol style="list-style-type: none"> The business owner directly trains the production workforce of the natural coffee bean fragrance The workforce possesses individual skills and abilities in their respective fields in producing natural coffee bean fragrances 	<ol style="list-style-type: none"> The distribution process of natural coffee bean fragrance products uses two-wheeled vehicles and delivery services 	<ol style="list-style-type: none"> Natural coffee bean fragrance products are marketed online and directly to distributors or stores in and outside the city of Jember Marketing is carried out by the owner of Keke Koka, who has a good knowledge of natural coffee bean fragrance products
Technology Development	<ol style="list-style-type: none"> The technology used by Keke Koka to produce natural coffee bean fragrances is still semi-modern 	<ol style="list-style-type: none"> In the production process, both human labor and machines are needed to create natural coffee-bean fragrance products. 	<ol style="list-style-type: none"> The presence of communication tools facilitates the ordering and selling of natural coffee bean fragrance products. The vehicle used to distribute natural coffee bean fragrance products to distributors within the city is a two-wheeled motor vehicle. 	<ol style="list-style-type: none"> Means of communication between producers and distributors through cellular phone networks and social media, such as WhatsApp

Table 1. Value chain of natural coffee bean fragrance at Keke Koka

Commodity	Coffee Beans			
Company	Keke Koka			
Main Activities	Incoming Logistics	Operations	Outgoing Logistics	Marketing, Sales, and Service
Procurement of Goods	1. The raw material for the natural coffee bean fragrance product at Keke Koka is robusta coffee beans. 2. The tools and machines used for the natural coffee bean fragrance products in Keke Koka's business were sourced from East Java.	1. The primary raw material for the natural coffee bean fragrance is sourced from PUSLITKOKA, Jember Regency. 2. Raw materials and equipment for the production of natural coffee bean fragrance products are sourced from stores in the Jember Regency area.	1. The process of distributing outside the city is done by packaging 2. The distribution process in the Jember Regency area is directly taken by the distributor and delivered to the distributor's location	1. The availability of natural coffee bean fragrance products needed by distributors both in and out of town is already sufficient

Sources: Processed Primary Data, 2025

The training initiatives undertaken by Keke Koka, encompassing product quality and BPOM certification, have enhanced technical expertise and adherence to manufacturing standards. These activities align with the findings of Ruhyana et al. (2022) and Nesia (2023), which underscore that structured training enhances entrepreneurial capacity and product competitiveness. Training at Keke Koka is executed collaboratively with other coffee processors, promoting knowledge exchange within a peer network. Furthermore, Nesia et al. (2024) indicate that technological literacy, quality control, financial management, and digital marketing are essential elements for small agroindustries. At the organizational level, human resource development is facilitated internally via direct mentorship from the firm owner, encompassing operations from raw material management to product distribution. This dual strategy, comprising external institutional support and internal capacity enhancement, improves operational efficiency and market flexibility.

The human resources department at Keke Koka receives direct oversight from the firm owner regarding human resource development, encompassing the logistics of raw material transportation to the marketing of natural coffee bean-scented items. Keke Koka employs its capital, thereby obviating the need to procure loans from banks or other financial institutions. The promotion of natural coffee bean fragrance items is conducted through social media sales and partnerships with distributors, both within Jember Regency and beyond, to facilitate product marketing. Retailers in the Jember Regency area include tourist outlet shops, Purnama Jati souvenir shops, Primadona souvenir shops, and others that procure products directly from the production site. The table below illustrates the operations in the value chain for transforming coffee into coffee bean aroma.

Table 1 delineates the value chain operations of Keke Koka, organized according to Porter's (1985) framework, which includes both primary and support tasks that facilitate value generation. During the inbound logistics phase, robusta beans are procured from PUSLITKOKA, guaranteeing input quality in accordance with Idsan et al. (2022), who emphasize the significance of reliable supplier relationships in the agroindustry. The operational procedure encompasses roasting, aroma infusion, fermentation, and packing with semi-modern equipment, consistent with Nawawi et al. (2024) regarding the significance of artisanal processing in value enhancement. Outbound logistics integrate local transportation and third-party delivery services, exemplifying flexible distribution methodologies as articulated by Rusmana & Setyawan (2021). The owner manages marketing directly via social media and retail partners, while digital optimization has not yet been achieved, as indicated by Deviastri & Annisa (2022). Support activities encompass fundamental infrastructure, informal training, and external assistance from local government entities, as outlined in the capacity-building framework proposed by Ruhyana et al. (2022). Nevertheless, technological advancement is constrained, suggesting potential for modernization (Nasni et al., 2021). Keke Koka's value chain

exemplifies a proficient integration of local resources and innovation; however, its scalability depends on advancements in technology and marketing.

Analysis of the Value Chain of Natural Coffee Beans Fragrance at Keke Koka

The value chain analysis involves several important stages in the processing of the natural coffee bean fragrance product. The description is analyzed to determine the importance of resources, technology, and capabilities in shaping the company's competitive ability. The analysis is shown in Figure 3.

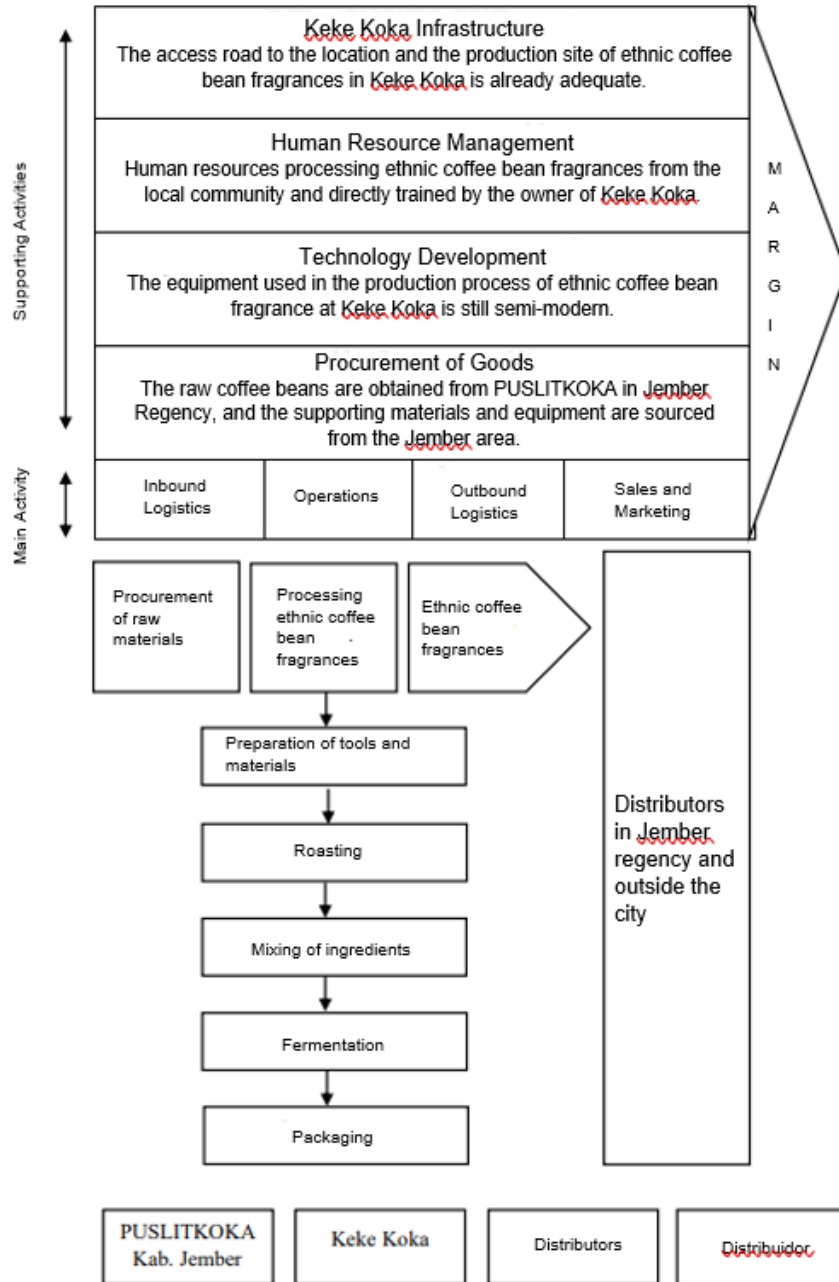


Figure 3. Value chain of natural coffee beans fragrance at Keke Koka

Figure 3 illustrates a systematic model of the value chain for natural coffee bean fragrance goods created by Keke Koka, evaluated through Porter's Value Chain framework. The graphic illustrates both primary operations, which include the essential production and delivery processes, and support activities that enhance the organization's efficiency and strategic advantage. The value chain commences with the acquisition of high-grade robusta coffee beans from PUSLITKOKA Jember, guaranteeing input quality and traceability. This upstream integration aligns with the findings

of Idsan *et al.* (2022) in Kepahiang Regency, which indicate that collaboration with specialized suppliers enhances supply chain stability. Nonetheless, although the majority of suppliers in Kepahiang are smallholder farmers, Keke Koka advantages from institutional sourcing, which improves standardization and reliability.

During the operational phase, the coffee beans undergo roasting, aromatic oil fermentation, and packaging. Keke Koka employs semi-modern technology, which significantly enhances value through innovative scent combinations and product formulation. This corresponds with Nawawi *et al.* (2024), who highlighted the functional and economic advantages of fermentation in post-harvest coffee processing. In contrast to Juanda *et al.* (2022), who investigated sophisticated wine-coffee production in Gayo, Keke Koka remains deficient in process automation, signifying potential for technological enhancement.

Outbound logistics encompass local transportation for proximate regions and third-party logistics for interregional markets. This adaptable distribution model aligns with the framework articulated by Rusmana & Setyawan (2021), who emphasized the importance of flexible supply chain integration in improving product availability and customer responsiveness. The owner directly oversees marketing and sales initiatives, employing social media, exhibitions, and collaborations with gift and souvenir retailers. The empirical approach is corroborated by Deviastri & Annisa (2022), who proved that direct digital engagement and personalized marketing substantially influence MSME performance. Promotional initiatives at Keke Koka are nevertheless constrained compared to the extensive online campaigns used by similarly sized enterprises.

The firm's infrastructure includes essential yet effective production facilities, adequate transit access, and necessary equipment, including roasting machines and packaging equipment. Rohmah *et al.* (2020) showed that infrastructural constraints markedly diminish production efficiency; conversely, Keke Koka sustains stable operations despite its semi-modern equipment owing to its streamlined production volume. Human resource development is enhanced by informal, owner-led training, supported by the Cooperative Office and Industry and Trade Office. This dual strategy aligns with the findings of Ruhyana *et al.* (2022), who highlighted that skill training through engagement with government institutions enhances product quality and market competitiveness.

Current technological advancements, although limited to basic tools, facilitate small-scale, bespoke manufacturing. In contrast to the conclusions of Nasni *et al.* (2021), which emphasize the necessity for ongoing technological advancements in agroindustries to enhance competitiveness, Keke Koka's present technological capacity is adequate for market entry but not yet refined for scalability. Ultimately, procurement at Keke Koka is reliable, with raw materials and ancillary components sourced from local suppliers. This localized sourcing diminishes lead time and expenses, a technique deemed essential for improving value chain efficiency in small-scale agroindustries, as articulated by Noer & Handayani (2023).

Keke Koka's value chain approach exemplifies efficient value creation through product innovation and institutional backing. To augment its competitiveness, the firm needs strategic enhancements in processing technology, marketing proficiency, and production infrastructure. Compared with analogous agroindustry models in the literature, Keke Koka demonstrates superiority in sourcing and product differentiation, while it still offers avenues for improvement in operational efficiency and digital market integration.

Table 2. Analysis of the value chain of natural coffee beans fragrance in Keke Koka

Commodity		Coffee Beans		
Company		Keke Koka		
Main Activity	Special Resources/ Assets	Technology and Knowledge	Capability/Skills	Analysis
Procurement of Coffee Bean Raw Materials	1. The raw material for coffee beans is obtained from PUSLITKOKA Jember Regency. 2. The price of raw coffee beans is Rp 95,000/kg	1. The coffee beans used are robusta coffee beans 2. Robusta coffee beans tend to have a round shape with a strong coffee aroma	1. The ability to select high-quality coffee bean raw materials to meet production needs	1. The raw material of coffee beans for the production of natural coffee bean fragrances is sourced from PUSLITKOKA, Jember Regency 2. The raw material for high-quality coffee beans is robusta coffee

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Commodity		Coffee Beans		
Company		Keke Koka		
Main Activity	Special Resources/ Assets	Technology and Knowledge	Capability/Skills	Analysis
Processing coffee beans into natural coffee bean fragrance products	1. In producing natural coffee bean fragrances, the workforce performs its duties effectively within its respective fields.	1. The equipment used in the production process is still semi-modern 2. The knowledge possessed by the workforce is obtained through direct training from experienced business owners	1. Each worker has skills according to their field 2. The business owner has skills and innovation in processing natural coffee bean fragrance products.	1. Processing natural coffee bean fragrance products has been going well. 2. The natural coffee bean fragrance product already has the legality of IUIK, NIB, SKU, and HKI.
Transportation	1. In the process of distributing raw materials and natural coffee bean fragrance products to Keke Koka's business, transportation facilities are available and adequate.	1. The transportation used for the delivery of raw materials for Keke Koka's business is a four-wheeled vehicle, specifically a pickup.	1. Distributing products using the transportation provided by the company 2. Intercity shipping using an expedition service	1. The facilities and infrastructure for distributing natural coffee bean fragrance products have met the needs of Keke Koka's business.
Technology Development	1. The availability of technology in processing natural coffee bean fragrance products	1. The equipment and machines used to make natural coffee bean fragrances are still semi-modern	1. The workforce properly operates tools and machines in accordance with the instructions from the business owner, Keke Koka.	1. The tools and machines used in production can be purchased on the market 2. Production technology must be improved to enhance the quality and quantity of the products
Human Resource Management	1. The workforce at Keke Koka's business comes from the local community	1. The business owner trains the workforce directly 2. The Cooperatives Office and the Industry and Trade Office of Jember Regency provide training and guidance to Keke Koka business owners.	1. Provision of compensation to every worker	1. The development of human resources in processing needs to be improved 2. The Cooperative Office and the Industry and Trade Office of Jember Regency provided training to the owner of Keke Koka

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Commodity		Coffee Beans		
Company		Keke Koka		
Main Activity	Special Resources/ Assets	Technology and Knowledge	Capability/Skills	Analysis
Marketing	1. Market access for processed products obtained through the connections of the owner of Keke Koka.	1. In expanding market share, business owners have good capabilities	1. The business owner has a strategy for marketing their product, which involves selling to distributors both within and outside the city	1. The product has met market demand. Promotional activities have not been maximized

Sources: Processed Primary Data, 2025

According to the value chain study presented in Table 2, the natural coffee bean scent at Keke Koka can be classified as follows:

1. Procurement of Unprocessed Coffee Beans

Coffee Keke Koka sources its raw materials of robusta coffee beans from PUSLITKOKA in Jember Regency. Keke Koka transforms robusta coffee beans into aromatic natural coffee products. The natural coffee bean fragrance is created monthly, yielding a total of 100 kilograms. The cost of raw robusta coffee beans is Rp 95,000 per kilogram. Keke Koka sources grade A, premium robusta coffee beans, distinguished by their intact, clean appearance, slightly rounded form, and pronounced coffee scent. Research by Um (2017) and Fadhiela & Safrika (2023) indicates that the quality of coffee raw materials influences product quality development, which may ultimately be classified into original and premium categories. The utilization of superior raw materials can confer a competitive edge, substantially influencing firm profitability. The findings of Noer I & Handayani (2023) and Noer (2022) indicate that the quality of raw materials at the farmer level is Rp. 20,000/kg for ordinary materials, but premium raw materials are priced at Rp. 35,000/kg, yielding a price differential of 75%. The 75% price disparity is deemed substantial and may yield increased earnings for raw material suppliers.

2. Converting coffee beans into fragrant, natural coffee products

The initial step in transforming coffee beans into natural coffee bean fragrance products involves preparing raw materials, including robusta coffee beans and supplementary components such as patchouli oil, essential oil, fixative, ethanol, burlap sacks, ribbons, flannel cloth, beads, plastic packaging, and packaging labels. Additionally, essential equipment includes a stove, spatula, spoon, sieve, plastic container, roasting machine, perforator, digital scale, scissors, hot glue gun, and lighter. This is executed to facilitate the production process. Once all tools and materials are procured, the coffee beans are roasted in quantities of 5 kg or as per demand. The roasting procedure requires 15-20 minutes at 180°C. After roasting, the coffee beans are placed on a cooling tray to cool. The subsequent phase, after the coffee beans have cooled, involves combining the components: roasted coffee beans, patchouli oil, essential oil, a fixative, and ethanol, all blended in a plastic container with a spoon. After achieving a uniform mixture, securely seal the plastic container. The subsequent fermentation is used in the production of natural coffee bean perfumes to amplify the aroma, achieving the desired fragrance impact.

The fermentation process lasts for one week and is meticulously controlled to guarantee the optimal aroma quality of the coffee beans. According to the findings of (2024), processing is essential for enhancing functionality, as pre-sale processing of coffee results in a higher selling price and improves workers' proficiency with coffee processing equipment. Packaging constitutes the concluding phase of the production process. Prior to packaging, Keke Koka verifies that the natural coffee bean fragrance goods comply with standards and are prepared for sale. The product is subsequently weighed on a computerized scale, wrapped in burlap bags (each containing 25 grams), embellished with appealing decorations and product labels, and then sealed with a hand-operated plastic sealer. The processing and packaging procedures align with the studies of Mochammad et al. (2020) and Roz et al. (2022), which assert that integrating technology into processing enhances value and guarantees quality in accordance with consumer desires. The integration of technology into packaging not only enhances quality but also serves as a branding mechanism; aesthetically pleasing packaging increases consumer interest in processed coffee products.

3. Conveyance

The transportation processes involved in transforming coffee beans into natural coffee fragrance products begin with the acquisition of raw materials and end with product distribution. According to the research conducted by Noor *et al.*, (2016), distribution activities are a crucial component of the process from purchase to product delivery to the consumer. Consequently, optimal transportation utilization will establish an effective distribution network. Keke Koka employs a pickup truck to acquire raw materials from PUSLITKOKA in Jember Regency. The delivery of natural coffee bean fragrance goods to distributors in Jember Regency is conducted utilizing company-provided transportation. Simultaneously, distribution for external distributors employs expedition services. Transportation is essential for product delivery. Research by Irfan *et al.* (2020) and Rusmana & Setyawan (2021) indicates that an efficient distribution mechanism fosters sustainability and consumer product delivery adaptability. Consistent product availability facilitates seamless processing operations and enables marketing efforts to satisfy consumer demand by guaranteeing that desired commodities are perpetually accessible in the marketplace.

4. Advancement in Technology

The conversion of coffee beans into natural coffee scent at Keke Koka employs semi-modern technologies. According to Ramawati *et al.* (2020), the technology used in coffee processing is rudimentary, yielding low-quality powdered coffee. The machines and equipment used include a roasting machine, burner, spatula, spoon, sieve, plastic container, perforator, digital scale, scissors, glue gun, and lighter. The roasting machine was acquired from a retailer in Jember Regency. Keke Koka has a single roasting machine, indicating her targeted production strategy aligns with her business requirements. Keke Koka can guarantee the efficient processing of coffee beans into high-quality, natural coffee aromas. Research by Nasni *et al.* (2021) indicated that employing technology in raw material processing seeks to improve product competitiveness and consumer satisfaction. Products that are meticulously processed to ensure high quality and consistently available in the market will enhance consumer loyalty.

5. Human Resource Management

The staff employed by Keke Koka is sourced from the local community surrounding the business premises. Keke Koka's enterprise contributes to the local community's economic development. Research by Putra & Achmad (2025) revealed that the government authorized the community surrounding the Banyorang coffee plantation to process coffee from the garden's harvest. The objective is to enhance the income of the local population through training in harvesting, grinding, drying, and processing coffee into powder. The anticipated rise in revenue from coffee product processing is expected to enable the community to produce superior-quality coffee powder. The workforce comprises five individuals, including four women and one man. The business owner directly trains the labor to develop natural coffee bean scents. The workforce's development of natural coffee bean fragrances is commendable, given their specific duties. In the future, the workforce will require training and supplementary information from the government or other institutions to enhance processing skills for natural coffee beans with added value. This analysis yields data that contrast with Rohmah *et al.* (2020), who found that resource management at KTH Cibulao Hijau is ineffective, resulting in numerous task delays. Moreover, the caliber of available human resources is subpar, requiring extensive training and mentorship.

6. Promotion

Keke Koka manufactures natural coffee bean scent goods and distributes them to local and remote distributors. Keke Koka possesses multiple distributors located outside the city, including Malang, Surabaya, Kalimantan, Sumatra, Bangka Belitung, and Bali. Moreover, there are retailers in the Jember Regency region, including tourist outlet stores, Purnama Jati souvenir shops, Primadona souvenir shops, and other merchants who procure products directly from the production site. Keke Koka actively participates in government-organized exhibitions to promote its products. The results align with the studies by (2022), Rohmah *et al.* (2020), and Roz *et al.* (2022), which assert that product manufacturers must actively engage and communicate effectively to promote their products through social media content and participation in government-sponsored exhibitions. Utilizing digital media for promotion will enable products to reach a broader client base. Alongside promoting the merchandise via social media, the subsequent phase entails identifying partners proficient in product marketing collaboration. This aligns with Keke Koka's initiatives to broaden market reach and enhance product visibility across diverse geographies.

The examination of Keke Koka's value chain reveals a functioning, community-oriented agroindustrial framework that adeptly integrates local sourcing, semi-modern processing, and varied distribution methods. The firm illustrates that even minor participants can create substantial value via niche product innovation and institutional backing. Enhancing competitiveness necessitates strategic advancements in technology adoption, market expansion, and formal product certification. These findings not only affirm the significance of Porter's Value Chain framework for examining rural MSMEs but also underscore the necessity of multi-stakeholder engagement to bolster agroindustry resilience. The lessons derived from this instance can guide both scholarly discussion and policy formulation aimed at enhancing value-added processing within Indonesia's agriculture industry.

This study enhances the theoretical frameworks of rural entrepreneurship and agroindustrial development by illustrating how small-scale firms can effectively incorporate innovation, localized raw-material procurement, and community-based labor to create niche value chains. The Keke Koka story illustrates how micro-agroindustries in rural regions can add value beyond traditional agricultural products, thereby enhancing the sustainability of local economies.

The findings highlight the pressing necessity to provide institutional support for small processors via several avenues. This includes enhanced access to contemporary processing technology, capacity-building in digital marketing, and the facilitation of product certification, including halal and BPOM certification, all of which are crucial for improving competitiveness and ensuring adherence to regulatory standards. Moreover, governmental interventions must include enhancing MSME access to microfinance, bolstering rural technology extension services, and promoting local branding tactics. These approaches would enhance the robustness and scalability of agroindustrial value chains in locations such as Jember, establishing small agroenterprises as vital contributors to rural economic diversification and national agribusiness innovation.

CONCLUSIONS AND SUGGESTIONS

The value chain framework of natural coffee bean fragrance goods at Keke Koka has three interconnected primary stakeholders: 1) PUSLITKOKA as the sole provider of premium robusta coffee beans, 2) Keke Koka as the primary processing entity implementing roasting, fermentation, and aroma blending advancements, and 3) a network of local and interregional distributors that guarantees extensive market reach. Supporting institutions, particularly the Cooperative Office and the Industry and Trade Office, assist in training, quality assurance guidance, and certification facilitation. The amalgamation of dependable sourcing, artisanal processing, and smart distribution allows Keke Koka to develop a specialty product characterized by competitiveness derived from local resources and creativity. Keke Koka must sustain its strategic alliance with PUSLITKOKA to ensure a consistent supply of premium robusta coffee beans while continuing to innovate in aroma formulation, fermentation, and packaging to enhance product differentiation. Collaboration with governmental entities must be formalized to provide ongoing training, quality assurance, and business development assistance. The implementation of contemporary processing technology is advised to promote efficiency and consistent quality, in conjunction with the expansion of data-driven digital marketing and its integration into e-commerce platforms to augment market reach. Securing halal certification and BPOM approval will enhance access to high-end markets. Subsequent research should evaluate financial viability, investigate the impact of local branding on consumer loyalty, and analyze collaboration frameworks among MSMEs, local governments, and distributors to enhance value chain resilience.

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