

Analysis of the Potential of Fresh Fruit Health Drink Agroindustry for Creative Food Business Education for Agricultural Students in Manado City

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Abstract: This study aims to determine the potential of fresh fruit juice health drink agro-industry financially, namely 1). Determine the revenue, cost and profit of fresh fruit juice agro-industry business, by R/C Ratio value, 2). Determine the development strategy of fresh fruit juice health drink processing agro-industry from local fresh fruit raw materials, 4). Knowing the impact of agro-industry of fresh fruit juice health drinks for the education of agricultural students as a food technology business. This study used two analysis method approaches, namely financial business income analysis and SWOT analysis (Strength, Weakness, Opportunities, Threats). The results showed that agro-industrial activities of fresh fruit juice health drinks by sario fresh fruit shop traders in Manado city provide financial benefits, namely: 1). The average total revenue per production per month amounted to IDR 17,700,000, with a total cost of expenditure per production of IDR 9,501. 248, and total profit of IDR 7,498,752 per production; 2). The R/C Ratio value of 1.28 means that the fresh fruit juice agro-industry business is feasible; 3). The strategy for developing the fresh fruit juice health drink agro-industry, in order to maintain financial benefits, includes: a) increasing the amount of production of various fresh fruit juices; b) improving the quality of both the natural color of the fruit, smell and taste, without preservatives; and c) enlarging business capital, and making production efficiency to meet local and national market demand. 3) Agroindustry of fresh fruit juice health drinks actually provides education that the food technology business in addition to teaching materials for agricultural technology entrepreneurship (technopreneurship) and agroindustry management also fosters creative food entrepreneurs to UNSRAT Manado agriculture students.

Keywords: Agro-industry; B/C Ratio; creative food business education; fresh fruit; health drinks.

Introduction

Agriculture is an important contributor to the economy and welfare of people in many countries, including Indonesia (Aryawati & Budhi, 2018). The role of agricultural extension workers can provide a major contribution to increasing agricultural productivity and empowerment of farmers in Indonesia (Budi, 2018; Rosada et al., 2024)

Agroindustry is an industrial activity or company that generally utilizes agricultural products as the main raw material for processing to produce products that can provide added economic value, for business actors and improve the economy of the region where the agroindustry stands and grows (Austin, 1992). Agroindustry as an industrial activity carried out individually or collectively by utilizing raw materials from agricultural products, to produce outputs in the form of semi-finished products or food products that

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have economic value and can answer the needs of food and nutrition consumption of living beings. A professional agroindustry actor has three interpersonal namely interpersonal roles, informational rules and decisional roles (Pinatik et al., 2024). Another advantage of the existence of an agro-industry activity is that it can attract employment for people who live in the area where the agro-industry business is located (Arifin, 2016). One form of agro-industry that continues to grow and be cultivated by people living in urban areas is the growth of shops, cafes both inside mall buildings, supermarkets and in easily accessible spots in urban areas, to produce, serve and sell fresh fruit juice fresh drink products at affordable prices. The growing population of agro-industry of fresh fruit juice health drinks in the form of shops and stalls both in the mall environment and in strategic economic areas in the city of Manado as the center or capital of North Sulawesi Province, as a tangible form of embodiment of the creative economy, which is believed to be one of the prime movers of the economic growth of a regional area. This potential is a serious concern of the Indonesian government both nationally and regionally, so that in the midst of society many creative economy MSME players are born, by utilizing the potential of local wisdom resources. Both as a tangible form of encouraging the re-growth of the community economy that had dropped during the COVID 19 pandemic and in the present time after COVID 19 continues to survive and improve the family economy.

Manado City is the capital city of North Sulawesi Province, in addition to functioning as the capital of regional government, but most of its people pursue creative economic activities. One of the creative economic activities on the scale of Micro, Small and Medium Enterprises (MSMEs) that has actually grown in the community in Manado City is the agro-industrial business of fresh fruit juice health drinks. According to Naryoto & Rahardjo (2014), fresh fruit juice drinks have many benefits, namely for health, increasing the economic value of business actors, as well as attracting employment for people around the business area. The city of Manado, when viewed graphically, is an interchange or connecting area and a gathering place for various farmers or fruit traders in various city districts in North Sulawesi who sell fresh fruits in all traditional and modern markets. This condition becomes the potential that the availability of fruits is abundant, easy to obtain with affordable purchase prices in Manado City. This factor makes the population of agro-industrial MSME players in fresh fruit juice health drinks continue to grow and spread in almost all strategic areas of the city.

Despite the abundant supply of raw materials, it is not enough to make fresh fruit juice beverage

Agroindustry MSME players easily develop their businesses. This is because they still face the problem of limited capital. The impact of limited capital affects the limited volume of raw material purchases and production, limited provision of processing and storage equipment, which in turn affects the ability to expand marketing access both outside the city of Manado and outside the North Sulawesi region. There are efforts to propose loan assistance to financial institutions or banks, both state-owned and private banks are unable to compete with large-scale business actors. One factor that cannot be fulfilled is the requirement that business actors must include a business plan containing a scientific description of the implementation and financial benefits and what strategies are appropriate so that their business can compete with larger-scale fresh fruit juice beverage agro-industries.

Other problems are obtained among agricultural students of Sam Ratulangi University Manado as the object of this research, still low science literacy and creativity to apply the science of agro-industry management and technology entrepreneurship (technopreneurship) of agricultural products regarding agro-industry of fresh fruit juice health drinks which are real processes and low production costs, as well as real food products of nutritional value and economic value.

Based on the above problems, the results of this study are important and strategic in order to answer the problems faced by MSME players, both shops and agro-industry stalls of fresh fruit juice drinks in Ko Manado. This research uses two analytical approach methods, namely financial analysis and SWOT analysis (Strength, Weakness, Opportunity, Threats), and STEM (Science, Technology, Engineering and Mathematics) analysis, which are expected to answer the objectives, namely: 1). Calculating revenue, expenses and profit (π), 2). Designing appropriate strategies as a recommendation to the Manado city government, for the development of fresh fruit juice processing agroindustry, as a form of productive economic activity for the people of Manado city as the capital of North Sulawesi Province, Indonesia,

3). Knowing the impact of the fresh fruit juice health drink agro-industry on the education of agricultural students as a food technology business with nutritional and economic value. It is expected that the results of this study will be an information material for fresh fruit juice beverage agroindustry MSME players in Manado city to continue to develop their business and as a recommendation to the government, that the potential of fresh fruit juice beverage agroindustry is very feasible to improve the economy of the Manado city area, as one of the destiny international cities in eastern Indonesia. Then also provide education to agricultural students about the importance of early on having a

mindset of developing a food technology entrepreneurship business of fresh fruit juice health drinks, with cheap production capital, nutritional value and economic value.

Method

This research was conducted in North Sulawesi Province. The selection of the research area was done by purposive method (Sugiyono, 2017). Based on this deliberate method, Manado City was chosen with the consideration that Manado City has many agro-industry businesses of fresh fruit juice drinks, both individual, family and group UMKM scale. This research used descriptive method. According to (Wiratha, 2006; Mukhlis et al., 2024), descriptive research is research that describes and relates various conditions, situations or variables. Then, analyze and present facts systematically so that they are easier to understand and conclude. The results of the research are more emphasized on providing an objective description of the actual situation of the object under study. However, in addition to revealing facts, a strong enough interpretation is needed to get wider benefits. This research is suitable for using the survey method because the data studied in survey research is taken from the population so that relative events, distributions, and relationships between variables can be found.

Sampling in this study using purposive sampling method (Sugiyono, 2018b). Data collection methods were carried out by interviewing and surveying respondents. Primary data were obtained from respondent farmers through direct interviews, secondary data were obtained from various related agencies.

To answer the first objective of the study, the business income of the Fresh Fruit Juice Beverage Industry was analyzed using the farm income formula (Pd) (Rahim and Hastuti, 2008; Mukhlis et al., 2023). Mathematically it can be written:

$$Pd = TR - TC \quad (1)$$

Where:

Pd = Business Income

TR = Total Revenue

TC = Total Cost

The data analysis method used is SWOT analysis. SWOT analysis is a qualitative analysis tool to produce alternative strategies by considering external and internal factors of the organisation. The stages in SWOT analysis are as follows (David et al., 2017; (Mahfud & Mulyani, 2017; Rohani et al., 2024). SWOT analysis is a strategic planning and strategic management technique

used to help a person or organization identify Strengths, Weaknesses, Opportunities, and Threats associated with business competition or project planning (Rangkuti, 1998) (Mubarokah et al., 2024).

Sustainability Strategy Decision Making SWOT analysis (Strength, Weakness, Opportunity, and Threat) is a tool to derive useful or effective strategies that are applied according to the market and public conditions at the time (Galavan, 2014; Kaunang et al., 2024). Opportunities and threats are used to understand the external environment, while strengths and weaknesses are identified through internal company analysis. SWOT compares strengths, weaknesses, opportunities, and threats. Strengths and weaknesses are examined to identify current and future opportunities and threats (Gurel & Merba, 2017; Muala et al, 2024). SWOT analysis is a tool used in decision-making which requires surveying the internal environment for Strengths and Weaknesses, and surveying the external environment for Opportunities and Threats (Muala et al, 2024). The matrix is an important matching tool to help parties in the organization produce four types of strategies, SO strategy, WO strategy, ST strategy and WO strategy. Before conducting a SWOT analysis, it is necessary to create an IFE and EFE matrix to classify internal and external factors that will be the strengths, weaknesses, opportunities and threats of a company.

To determine the impact of the agro-industry of fresh fruit juice health drinks for the education of agricultural students as a food technology business with nutritional and economic value, a STEM (Science, Technology, Engineering and Mathematics) analysis approach was used (Shahali et al., 2017). Data sampling with pre-experiment. Where the design used in this research is one group pretest posttest (Sugiyono, 2018). The population in this study were students of the agricultural engineering study program who took agro-industrial management courses in the even semester of the 2023/2024 academic year, totaling 35 students. The sample selection in this study used purposive sampling technique. The selection of this technique is determined based on the final exam score in the first semester. The instruments used in this study consisted of questions and observation sheets. to measure the increase in students' science literacy about understanding the agroindustry of fresh fruit juice health drinks in students as learners, it can be measured using questions that have students' science literacy skills. To measure student creativity, direct observation is carried out during the learning process which consists of three indicators including; generating (composing), planning (planning) and, producing (producing) (Astuti et al, 2023).

Result and Discussion

Institutional Description of Stores and Shops of Juice Health Drink Agroindustry Businesses

Fresh and Nutritious Fruit Sario Manado City Fresh fruit juice health drink shops and stalls are community creative economic businesses established by a number of young people from the Unsrat Faculty of Agriculture alumni who have an entrepreneurial spirit) who want to actualize the agricultural and food knowledge gained during college, with an entrepreneurial spirit. Business ownership on the basis of a business license from the Department of Industry and Trade, with Manado city trade business license number (SIUP) NO: 027-480/U/MDO/7/2010. The business is named Toko Buah Segar Sario, since the establishment until now the author conducts research located on Jalan A. Yani Sario No. 28. Manado.

Based on the results of the research, it was obtained that on average per day the raw material needs of fruits purchased were 10 kg of fruits, at a price of IDR8000 per kg or if calculated per month, the required raw material needs of fruits amounted to 300 kg or at a cost of IDR 2,400,000. Various types of local fresh fruit are held to be processed into fresh fruit juice drinks and other processed products (fruit salad, fruit podeng, fruit paste), which of course according to the needs and desires of the buying public, such as: apples, oranges, soursop, melons, pineapples, advocates and other types of tropical local fruits that are considered preferred and suitable as the main raw material for fresh health drinks, both in cold packaging and other processed products.

The strategic position located in the center of Manado City, makes shops and health drinks stalls from fresh and nutritious local fruits visited by both the people of Manado city, local and foreign tourists visiting Manado City. In running a health drink agro-industry business with fresh and nutritious local fruit raw materials, the owner of the Sario health drink shop and shop, Manado City, has several divisions, namely the raw material preparation division, production and processing division, financial division (bookkeeping and cashier) and sales, marketing and promotion division. The method of marketing fresh fruit juice health drink products is done in several ways, namely onsite, selling beverage products in shops or stalls, door to door, delivering every request or order from buyers to homes or offices and online using social media.

Business capital from fresh fruit juice health drink shops or stalls in Sario, Manado city, comes from two forms, namely initially by combining the capital of several owners who are alumni of the Faculty of Agriculture, Sam Ratulangi University. The agro-industrial business of fresh fruit juice health drinks

continues to grow, so that it gets business credit assistance from banks. Business operational time is carried out every day or 7 days a day, with the exception of Sundays only half a day or holidays. The price of any fruit juice product, sold per glass is IDR 10,000 while non-fresh fruit juice products such as fruit salad, sweets are sold for IDR 7,000 per container.

Results of the Fresh Fruit Juice Health Drink Processing Process

The products produced and sold at the Sario fresh fruit juice health drink shops and stalls, Manado City, are grouped into two main types of products, namely fresh fruit juice beverage products according to the demand of buyers or consumers and non-fruit juice products, (salads, pickles and candied fruit) The results of the research obtained the stages of the process to produce products, both fresh fruit juice and non-fruit juice, can be seen in Figure 1.

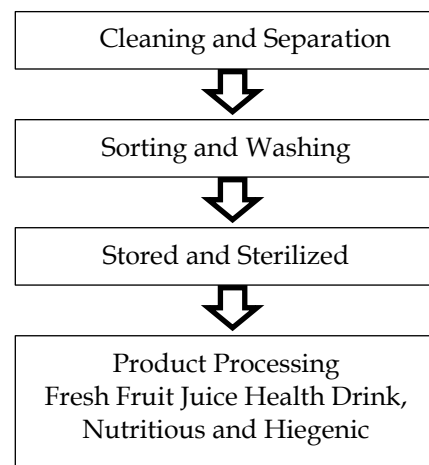


Figure 1. Stages of the process to produce health drink products (fresh fruit juice and non-fruit juice)

Based on Figure 1, it can be explained that there are several stages of the fresh fruit juice health drink processing process. In the first stage, namely cleaning and separating fresh fruit. Fresh fruit that has just been taken from farmers in districts adjacent to the city of Manado, is first cleaned with clean water and separated from dirt or dust that is attached, so that it is separated from the surface of the fruit skin; in the second stage, sorting and washing, the cleaned fresh fruit then entered the sorting stage. The purpose of sorting is to classify fruits that are of very good quality (outwardly good, no spots, no breaks, color in accordance with the level of maturity) and poor quality or not good (there are defects, cracks, black, color is not in accordance with the level of maturity). Then washing is done again, until the fruits are clean. and placed in sterilized containers and rooms; In the third stage, namely Sterile Conditions, fruits that are immediately and have been cleaned and

separated are placed in sterile containers, then stored in a cupboard box (box), with cold temperatures ranging from 1 - 5°C, in this phase aims to maintain the shelf life or fruit remains durable, fresh and hygienic, to be ready to be processed, according to the request of buyers or consumers. In the fourth or final stage, namely processing into fresh and hygienic health drink products, where fruits that have been stored and sterilized are processed using processing equipment, according to the needs or requests of buyers or consumers, in order to maintain the level of freshness and hygiene of the product. The processing process

produces fruit juice health drinks and non-fruit juice products (salads, pickles and candied fruit).

*Financial Analysis of Agroindustry Profits of Fresh Fruit Juice Shops and Stalls in Sario, Manado City
Analysis of Production Costs and Income*

Based on the results of research by taking for the last 6 (six) months the operation of agroindustry activities of fresh fruit juice health drinks at shops and fresh fruit juice stalls Sario Kota Manado can be seen in Table 1.

Table 1. Monthly Average Fixed Cost

Description	Unit	Price (IDR)	Total (IDR)	Depreciation / Month (1 %)	Depreciation / Year (10 %)
Box	2	2,000,000	4,000,000	33,333	400,000
Refrigerator	1	2,500,000	2,500,000	20,833	250,000
Cooler/showcase	2	2,000,000	4,000,000	33,333	400,000
Blender	2	400,000	800,000	6,666	80,000
Mixer	3	400,000	1,200,000	10,000	120,000
Basket					
- industrial fruit	50	65,000	3,250,000	27,083	325,000
- usual	80	30,000	2,400,000	20,000	240,000
Total				151,248	1,815,000

Based on Table 1, it can be explained that the average value of depreciation costs included in the fixed cost component per month from the use of equipment and materials during the production process of agro-industrial health drinks fresh fruit juice shops and stalls Sario Manado City is IDR 151,248 per month or depreciation or loss of value of 1% of the initial purchase price of each equipment. This means that the level of loss or depreciation value every month is still in the category of reasonable limits, which does not exceed the 5% depreciation rate per month. While depreciation costs per year amounted to an average of variable costs per month incurred during the process of IDR 1,815,000 or 10% of the use of equipment and materials during the production process. Furthermore, the average value of non-fixed costs (variable costs) during the production process in agro-industrial activities of health drinks at the Fresh Fruit Juice shop sario Manado city can be seen in Table 2.

Table 2. Monthly Average Variable Costs

Description	Unit	Price (IDR)	Total (IDR)
Labor	4 persons	1,000,000	4,000,000
Electricity		500,000	600,000
Water/PDAM		325,000	325,000
FUEL	7,5 liter/hour	4,500	2,025,000
Raw Materials Fruits	10 kg/hour	8,000	2,400,000
		(8.000 x 30 hr)	
Total			9,350,000

Based on Table 2, it can be explained that the monthly average of variable costs incurred by shop owners and fresh fruit stalls in Sario, Manado City is IDR 9,501,248. This figure is an accumulation of costs from several cost components, namely labor costs and electricity usage bills by PLN and water usage bills by PDAM Manado every month during the production process. Furthermore, the average total profit (π) or net income once the production of fruit juice and non-fruit juice by fresh fruit juice shops and stalls Sario Manado City can be seen in Table 3.

Table 3. Revenue once production of fruit juice and non-fruit juice Sario fresh fruit juice shop

Product Type	Sold Quantity Once Production (Unit)	Price Per Unit (IDR)	Revenue (IDR)
Fruit Juice	1,000 cup	10,000	10,000,000
Non Fruit Juice (Salad, pickles, candied fruit)	1400,000 containers	5,000	7,000,000
Total			17,000,000

From Table 3, it is obtained that the total revenue once the production of fruit juice and non-fruit juice products (salads, pickles, candied fruit) received by the owners of fruit juice shops and stalls Segar Sario Manado City is IDR 17,000,000. This figure is obtained from the total sales revenue of 1000 cups of fruit juice at a price of IDR 10,000 per cup, which is IDR 10,000,000

plus the total sales revenue of non-fruit juice products (salads, pickles and candied fruit) of IDR 7,000,000, which sold as many as 1400 units of containers, with a selling price of IDR 5,000.

Table 4. Profit (π) of Fresh Fruit Juice Agro-industry Business Stores and Shops Sario Manado City

Description	Total (IDR)
Revenue	17.000,000
Cost (fixed cost + variable cost)	9,501,248
Profit (π)	7,498,752

From the total revenue generated from the sale of fruit juice and non-fruit juice products in table 3, then in table 4 the total revenue or net profit (π) from one production of health drinks both fruit juice and non-fruit juice amounted to IDR 7,498,752. This profit figure is

obtained from total revenue of IDR 17,000,000 minus total expenses (fixed costs + non-fixed costs) of IDR 9,501. 248. From the results of this financial analysis calculation, significantly the fruit juice agroindustry business in Manado city provides financial benefits and has a broad impact, such as creating labor, increasing the selling value of fruit products and increasing the economic value of the region, especially in Manado city.

Analysis of the Development Strategy of the Fresh Fruit Juice Health Drink Agroindustry at Stores and Fresh Fruit Juice Stalls Sario Manado City. This research uses a qualitative SWOT (Strength, Weakness, Opportunity and Threats) analysis method approach. The results of the SWOT analysis of the development of fresh fruit juice health drink agro-industry in fresh fruit juice shops and stalls Sario Manado City can be seen in Table 5.

Table 5. SWOT Analysis of health drink agro-industry development strategies in fresh fruit juice shops fresh fruit shop Sario Manado City

Internal	Strengths (S)	Weakness (W)
	<ul style="list-style-type: none"> a. Agro-industrial products of fresh fruit juice health drinks at Sario fresh fruit shops and stalls in Manado City as a quality creative industry. b. Business actors of agro-industrial products of fresh fruit juice health drinks at fresh fruit shops and stalls Sario Manado City as an economically potential creative industry c. Fresh fruit raw materials as health drink products are abundant and continuity in Manado City and other city districts of North Sulawesi d. Sario City Manado agro-industry business actors can produce quality health drink products from fresh fruit in continuity, because fresh fruit raw materials are abundant in Manado City and city districts in North Sulawesi Province. e. The agro-industry products of fresh fruit juice health drinks of Sario City Manado shops and stalls are nutritious, healthy and environmentally friendly 	<ul style="list-style-type: none"> a. The technology (equipment and machinery) of the fresh fruit juice health drink agro-industry in fresh fruit juice shops and stalls in Sario, Manado City is still limited and not modern. b. Limited business capital at the level of business actors of fresh fruit juice health drink agro-industry products in Sario fresh fruit juice shops and stalls, Manado City c. Agro-industrial products of fresh fruit juice health drinks at shops and fresh fruit stalls Sario Kota Manado are easily damaged or have a relatively fast expiration period d. The frequency of promotion of agro-industrial products of fresh fruit juice health drinks from fresh fruits by business actors of shops and stalls of Sario Kota Manado is still limited to the local level of Manado city and neighboring kabuapten areas.
External		
Opportunity (O)	Strategy S-O	Strategy W-O
Sario health drink agro-industry products in Manado City have a wide market share, both locally and nationally to the Philippines which is adjacent to North Sulawesi.	<ul style="list-style-type: none"> a. Increase the production quantity of fresh fruit juice health drinks from fresh fruits of superior quality, international standard to expand the market b. Add the latest technology, both equipment, processing machinery and process technology 	<ul style="list-style-type: none"> a. The technology (equipment and machinery) of the Sario fresh fruit juice health drink agro-industry in Manado City is still limited and simple. b. Adding or increasing business capital for business actors of the fruit juice health drink agro-industry from fresh fruits of Sario in Manado City
Agroindustry of health drinks fresh fruit juice Sario Manado City provides employment for the people of Manado City and its surroundings.		

Internal	Strengths (S)	Weakness (W)
<p>Agro-industry products of fresh fruit juice health drinks Sario Manado City provide added economic value for business actors, individual, family and MSME scales, as well as being an attraction for local and foreign tourists visiting Manado City as an icon of a strategic tourism area as a gateway to Asia Pacific.</p> <p>Threats (T) Agro-industry products of fresh fruit juice health drinks from fresh fruit stores and shops of Sario City Manado, cheaper prices and quality compared to other health drink businesses in Manado City. Fresh fruit juice health drink products with factory-made packaging entering from outside North Sulawesi Province are competitors and threats.</p>	<p>c. Train a skilled and reliable workforce in the field of health drink processing from fresh and nutritious fruits.</p> <p>d. Business actors of agro-industry health drinks fresh fruit juice shops and stalls Sario Manado City can intensively and massively increase product sales targets in continuity, because raw materials for fruits are immediately abundant in Manado City and all districts and cities in North Sulawesi Province.</p>	<p>c. Adopt technology that can extend the shelf life of fresh fruit juice health drink products from local fresh fruits</p> <p>d. Increase the promotion of fresh fruit juice health drink products from fresh fruits massively, both online promotion (utilizing social media) and off line (direct promotion to supermarkets, local exhibitions and even exhibitions of nutritious and fresh health drink technology at national and international levels.</p>

Based on the SWOT analysis in table 6, it is obtained that the agro-industrial business of fresh fruit juice health drinks from Sario shops and stalls in Manado City, both fruit juice products and non-fruit juice products, continues to experience income or profit. In order for the agro-industrial business to become a rule model for the development and continuity of the agricultural industry of fresh fruit juice health drinks from local fresh fruits in Manado City and even become a rule model in North Sulawesi Province, it is necessary to add equipment and process technology, so that it significantly increases in terms of quantity and good quality (retaining the natural color of the fruit, smell and taste, without preservatives). According to Pinatik, et al, 2024, for the development and continuity of an agro-industrial business, in addition to adding equipment and process technology, it is also actively and massively promoting both on line (utilizing social media) and off line (participating in regional and national exhibitions).

The impact of the fresh fruit juice health drink agro-industry on the education of agricultural students as a food technology business with a STEM approach

In this study to determine how much the creativity of students with a sample population, namely undergraduate students of the Agroindustry Management Course Class of the Agricultural Engineering Study Program, Faculty of Agriculture, UNSRAT Manado after educating about understanding the agroindustry of fresh fruit juice health drinks as a promising form of creative food business (providing added economic value and clear market prospects) in the future, by applying the STEM approach, which can be reviewed through three indicators including; generating (compiling), planning (planning), and producing (producing), the results of observations can be seen in Table 7.

Table 6. Observation Results of Creativity of Agroindustry Management Class Students

Indicators	Aspects observed	Scores	Category
Generating	Students are able to compile and formulate from the results of education regarding the agro-industry of fresh fruit juice health drinks as a creative food business. The phenomena seen, observed lead to the expected achievements	85.00	High
Planning	Students are able to design the form of fresh fruit juice health drink agro-industry as creative food technology entrepreneurship Students are able to create a creative food business model into a canvas business model	82.00	High
Producing	Students are able to plan business plans, cash flow according to what is educated Students are able to produce ideas and creativity about fresh fruit juice health drink agroindustry prototypes Students are able to present the results of the design of the fresh fruit juice health drink agroindustry prototype as a form of creative food business	84.00	High

According to table 6, fruit juice health drinks to students of the agricultural engineering study program, Faculty of Agriculture, Sam Ratulangi University (UNSRAT) Manado as a form of education for creative food technology entrepreneurship, with a STEM approach using three indicators of compiling, planning and producing shows scores ranging from 82.00 - 85.00 or high category. This figure shows that this form of education or understanding of the importance of science (science) regarding the agroindustry of fresh fruit juice health drinks, increasing innovation and creativity in thinking, compiling, planning to produce the ability to design creative food technology entrepreneurship prototypes as capital to complete undergraduate studies in the Agricultural Engineering study program, Faculty of Agriculture, UNSRAT Manado can develop this business individually or form groups. As stated by Tunc & Bagceci (2021), that STEM will not only allow learners to gain science content but can also provide an avenue for them to express creative ideas. According to Shahali et al (2017), this means that students of the agricultural engineering study program at the Faculty of Agriculture, Sam Ratulangi University Manado, in addition to getting content from the science of fresh fruit juice health drink agroindustry, also get creativity in producing creative food business development prototypes that create jobs, economic benefits and scientific applications of agroindustry management and technology entrepreneurship while studying at the Faculty of Agriculture, Sam Ratulangi University Manado.

Conclusion

The agro-industrial business of fresh fruit juice health drinks and non-juice products by business actors of shops and stalls Sario Manado City provides financial benefits, namely revenue for each production per month of IDR 17,700,000 and expenses of IDR 9,501, 248, thus experiencing a profit (π) of IDR 7,498,752. every time production. The R/C Ratio value of 1.28 or greater than one ($R/C > 1$) means that the agro-industrial business of fresh fruit juice and non-juice products meets the feasibility of the business based on investment criteria.

The appropriate strategy to be applied by business actors of Agroindustry Stores and Shops of fresh fruit juice Sario Manado City, in order to maintain financial benefits and become a role model for the development of agroindustry of fresh fruit juice health drinks in Manado City, namely by increasing the amount of production of various fresh fruit juices and non-juice products, improving the quality of both the natural color of the fruit, smell and taste, without preservatives and

enlarging business capital, and making production efficiency to meet local and national market demand.

Agroindustry of fresh fruit juice health drinks clearly provides education that the food technology business, apart from being a teaching material for agricultural technology entrepreneurship (technopreneurship) and agroindustry management, also fosters creative food entrepreneurs to UNSRAT Manado agriculture students, shown in the implementation of the STEM approach can increase student creativity, as measured by three high category indicators, namely generating, planning and producing.

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Author Contributions

H.F.P.: Developing ideas, analyzing, writing, reviewing, responding to reviewers' comments; D.T., D.P.R.: analyzing data, overseeing data collection, reviewing scripts, and writing; M.K.: analyzing data, reviewing and writing scripts.

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Conflicts of Interest

The authors declare no conflict of interest.

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