

Evaluation of the Impact of Some Factors on Coffee Producers towards Sustainable Rural Development in Lagawe, Ifugao of Philippines

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Abstract Rural development requires harnessing existing community assets and expanding local economies while pushing local capabilities to be more efficient and innovative. The current conditions and external factors affecting local coffee producers in Lagawe, Ifugao were investigated as a foundation for a comprehensive framework for a sustainable rural development strategy. A multi-method in a convergent parallel research design with a participatory rural approach was employed to address the research objectives. Data were collected from registered local coffee producers through purposeful-criterion sampling approach, local government unit officials, and government agency representatives through key informant interviews and researcher-made questionnaire administration. Using frequency counts, percentage distribution, and mean, and careful analysis, findings revealed that products produced by local producers are in a good state in terms of the One Town One Product criteria. Coffee producers can access technology, market, and social infrastructures from different government agencies. Areas for improvement were identified based on the OTOP criteria. Finally, a comprehensive framework was proposed to establish sustainable coffee industry viable business for rural development.

Keywords Access to Finance, Coffee Producers, Cultural Value, One Town One Product

1. Introduction

The 17 Sustainable Development Goals (SDGs) and 169 associated goals created and adopted by 193 UN member countries understand the significance of eradicating poverty and hunger, establishing peaceful societies, empowering women and girls, and safeguarding the environment [1].

Notably, the United Nations acknowledged Entrepreneurship and innovation as critical components in addressing sustainable development concerns [2]. Entrepreneurship is a game-changer, providing the framework for achieving and implementing the SDGs while also powering economic growth based on sustainable development principles within long-term development [3]. In the Philippines, the *Ambisyon Natin* by 2040 is anchored in the Sustainable Development Goals.

Ambisyon Natin 2040 is the country's long-term foundation for its ambitions of sustainable development. Through this foundation, the Philippines would have been an affluent middle-class society by 2040, with no one living in poverty. Filipinos will also be able to enjoy *matatag, maginhawa, and panatag na buhay* by 2040 [4].

To help achieve a "*matatag, maginhawa, at panatag na buhay para sa lahat*," the Philippine Development Plan for 2017-2022 includes strategies that fall under three pillars: "malasakit" (social fabric enhancement), "pagbabago" (inequality reduction transformation), and "patuloy na pag-unlad" (increasing growth potential of the economy).

Under Pillar 3: Expanding growth potential (*patuloy na pag-unlad*), more people will use contemporary technologies, particularly manufacturing. Innovation will be promoted even more, especially as part of a unified research and development program.

Notably, the *pagbabago* pillar is one of the specified goals, and it aims to make it easier for excluded subsectors and people groups to engage in economic advancement. One of the inclusive programs is expanding economic opportunities and prospects in industry and services through *trabaho at negosyo*. This program would generate income for the people and assure supply of high-quality goods and services at reasonable costs. Producers will be encouraged to hire and pay for labor through *trabaho at negosyo*, creating jobs and allowing businesses to scale up and gain efficiency [4].

The year 2019 ended with the feeling that the global economy was in for a bumpy business ride in 2020. Then, however, a significant catastrophe struck the world surprisingly and quickly—the COVID19 virus. The COVID-19 pandemic is a global calamity that harms human health including economic wellbeing worldwide. COVID19 tested the worldwide network and it is still fighting for survival. The issue is critical and affects how people communicate, work, produce, exchange, consume, and live worldwide [5].

Similar problems brought by the pandemic are also being suffered by the so-called "less favored" areas, primarily the interior and mountainous, requiring creative solutions [6]. To cope with environmental turbulence of this magnitude, organizations must manage their capabilities by sensing, seizing, and transforming their resources and processes. Apparently, Entrepreneurship and innovation are also seen as essential components of society's progress, including developing sustainable rural areas.

Based on the bottom-up development theory, one viable response to the economic crises in developing countries is to stimulate and sustain development in rural regions [7,8]. A perfect example of rural Entrepreneurship promoting rural development is Japan's One Village One Product (OVOP) initiative, a unique approach to local action to seek a solution to the country's severe rural economic decline.

After the successful implementation in neighboring nations, the Philippines has been pushed to embrace One Village One Product (OVOP) in 2017. OTOP Philippines assists micro, small, and medium companies (MSMEs) producing, offering, and marketing unique products or services by utilizing local raw resources and talent. It is a government priority program to foster Entrepreneurship and employment creation [9].

In the Philippines, one of the rural areas aims for sustainable economic development is Lagawe, Ifugao. Lagawe, Ifugao, is working for a better business hub in Cordillera, Philippines. The municipality capitalizes on

local products, services, and resources to improve the local community's welfare. Community members' creativity and productivity in using local resources, such as human resources, raw materials, commodities, technology, and local culture, are critical in their business operations [10].

Now, with more towns and municipalities working hard for economic sustainability, a competitiveness indicator system is in use in the Philippines. The Cities and Municipalities Competitiveness Index ranks Philippine cities and municipalities yearly. Cities and municipalities are graded on their competitiveness based on an overall competitiveness score. According to the 3rd – 4th municipality classification, Lagawe, Ifugao ranked 127th with 39.48 as its overall score for the four pillars among cities and municipalities in the Philippines with the recent competitive index for 2020. Furthermore, out of 611 3rd & 4th class municipalities, Lagawe, Ifugao ranked 182nd, 337th, 48th, and 100th in economic dynamism, government efficiency, infrastructure, and resiliency, respectively. Specifically, the municipality of Lagawe ranked 16th, 182nd and 195th on local economic growth in the year 2018, 2019, 2020, respectively [11].

In the Philippines, to realize identified goals, different government agencies are empowered to help. Different government agencies are promoting and tracking programs empowering local producers and businesses in the town. However, the municipality's road to growth is still a long journey. Given the government's interventions with its member institutions, the business venture's failure rate is still present. Despite programs to mitigate ignorance in running a company, producers still face growth obstacles.

Nevertheless, various government departments, institutions, and civic and corporate organizations have continued to take initiatives to address the ever-increasing and accumulating problems. However, they can only do so much to solve the problem due to their limits and the people who merely take advantage of what they can obtain quickly rather than for long-term gain. For example, numerous businesses producing varied products are available in Lagawe, Ifugao. However, competitiveness of the municipality in terms of economic growth is still a problem that needs immediate concern. Thus, it is critical to explore the potential and current state of locally made coffee products in Lagawe, Ifugao, as a source of income and as impetus for the development of a comprehensive framework for sustainable rural development. This would aid several government organizations, including the local government unit of Lagawe, the Department of Trade and Industry, Ifugao State University, and other government agencies, in developing policies and procedures for the proposed sustainable rural development strategy. Finally, the existence of the Ifugao people engaged in entrepreneurial activity is considered a missing piece in the research literature, a field that has yet to be examined. Thus, the conduct and success of this research is critical.

2. Materials and Methods

2.1. Research Design

Mixed methods research, or a combination of quantitative and qualitative research methodologies, was used in this study. Specifically, the qualitative descriptive research design through participant interviews among producers was used to determine the current conditions of locally-made coffee product producers in terms of product quality, product design, packaging and labeling, marketability, branding, production and delivery capacity, financing, and innovation capability, cultural value, and customer experience. On the other hand, the convergent parallel design was ideal for gaining an in-depth understanding of the extent of external factors support from the different government agencies, such as access to finance, technology, market, social infrastructure, and environmental factors affecting producers. A convergent parallel design means that the researcher conducts both quantitative and qualitative portions of the research simultaneously, weighs the techniques equally, and interprets the results together [12]. The researcher sought the extent of how external factors affect producers through administration of questionnaire, and was validated through participant interviews.

2.2. Current Conditions & External Factors

This study determined the current conditions of coffee producers in the different barangays in the Local Government Unit of Lagawe, province of Ifugao. The current condition in this study refers to the current state of the producers of the locally made products in terms of their product quality, product design, packaging and labeling, marketability, branding, production and delivery capacity, financial capability, innovation, cultural value, and customer experience. Additionally, the study determined the extent of how the external critical success factors of One Village One Product of Japan, such as access to finance, access to technology, market access, access to social infrastructure and access to environmental factors affect coffee entrepreneurs in each barangay of Lagawe, Ifugao.

2.3. Research Environment

Being the capital of Ifugao, Lagawe is the commercial and financial center of the province. Still, agriculture is the primary source of income in the town, where rice, sweet potato, coffee, and vegetables are produced. The community is rich in culture, indigenous raw materials, and entrepreneurial people inbred with skills and talents that are harnessed to come up with distinctive products worthy of both domestic and foreign markets, such as the production of food products, handicraft items, and wooden furniture. Such characteristics make Lagawe the ideal

locale for the study.

Table 1. Demographic Profile of the Respondents

Barangay	Frequency	Percent %
Poblacion East	3	42.8
Poblacion North	4	57.2
Form of Ownership	Frequency	Percent %
Sole Proprietorship	6	85.71
Cooperative	1	14.29
Initial Capital	Frequency	Percent %
3,000,000 below	7	100
Source of Capital	Frequency	Percent %
Personal Investment	7	100
Relatives	6	85.71
Loans	2	28.57
Share Capital	1	14.29
Number of Employees	Frequency	Percent %
1-9 Employees	7	100
Years of Operation	Frequency	Percent %
3.1-6 years	5	71.42
6.1-9 years	1	14.29
9.1 years and above	1	14.29
Estimated Monthly Income	Frequency	Percent %
100,000 Below	7	100
Awards Received	Frequency	Percent %
No Awards Received	7	100
Assistance Received	Frequency	Percent %
Training/Workshops received	7	100
Technology	5	71.42

2.4. Research Participants

The producers of locally-made coffee products in Lagawe, Ifugao, Philippines were the primary participants of the study. The study group was determined using criterion sampling, one of the purposeful sampling methods. In addition, the selection criteria used to select the study participants were patterned from the One Village One Product movement of Japan. A list of registered businesses operating in Lagawe, Ifugao were secured from the Department of Trade and Industry. After thorough screening made based on the identified criteria, only 7 producers of locally-made coffee products participated in the study. A detailed description of products was taken to support claims on the potential of locally-made coffee products within the different barangays in Lagawe, Ifugao. In addition, one representative from different government

agencies (DOLE through LGU-Lagawe, DTI, DA, DOLE, and DOST) became part of the study based on the assistance provided to producers of locally-made products in terms of external factors identified in the study.

Presented in Table 1 are the business profiles of the participants of the study.

Interviews with local folks of Ifugao attested to the abundance of the coffee beans in the province, which have been capitalized early on by most farmers. Dialogues with some personnel from BAS-Ifugao, DTI-Ifugao, and the Provincial Agriculture and Environment and Natural Resources (PAENRO-Ifugao) also attested to the abundance of coffee beans in the province [13].

2.5. Research Instrument

To determine how the external factors affect the producers within each barangay in Lagawe, Ifugao, the assistance provided was determined first by administering a modified questionnaire patterned from open-sourced research outputs of eminent authors. The questionnaire on the extent of how external factors affect producers was developed using the 4-point Likert parameters. Questionnaires were modified and were subjected to a validation process (face and content validity) such as expert pooling, refinement, field test, and reliability tests. Three experts were consulted for initial validation. Additionally, the questionnaire was translated into the local dialect (Tuwali) for participants who could not understand English.

Since Cronbach alpha >0.700 , the set of 66 measures is adequate for group measurement using SPSS. The reliability test results for each of the five scales were at least 0.7, indicating acceptable reliability or internal consistency. The tool as a whole and by sections are valid and reliable.

In the qualitative stage, the semi-structured interview form was used. The steps for qualitative data collection tool development were followed when developing the interview form. First, the item pool was created, and expert opinions were taken. Finally, the instrument was revised, and the questions that the expert and researcher agreed to be problematic were omitted from the form. Moreover, the interview guide was translated into the local dialect (Tuwali).

2.6. Data Analysis

To answer stated objectives, the following were used in the study.

1. Information gathered from key informant interviews was treated qualitatively. With current conditions of producers using the One Town One Product Framework, open coding was done at first and then product descriptions were noted.
2. The extent of how external factors affect producers was processed using SPSS, where descriptive

analyses were performed. Qualitative aspects were used to corroborate and validate findings from the quantitative aspect of the study. Mean scores were used to assess the extent of how external factors affect producers.

3. In the proposed comprehensive framework for sustainable rural development, inductive technique of writing was used based on the salient findings on the current conditions and external factors.

3. Results and Discussions

3.1. Current Conditions of Coffee Producers

Product Quality

Product quality refers to the primary functions of the product, the probability that the product will perform satisfactorily for some time, the reliability or shelf-life of the product, including the measures on quality control.

Generally, coffee products produced by local producers in Lagawe, Ifugao, are of good quality. All coffee products serve as a stimulant to increase energy levels.

All have consistent quality (taste and aroma) over some time. Usually, coffee products can last from 6 months to 1 year. Most coffee producers ensure the quality of the finished products by getting good quality coffee beans and by following standardized procedures in making the product from bean to brew or from the selection of coffee beans to final packaging.

Coffee C frequently conducts taste tests to ensure the consistency of the aroma and taste of the product. Similarly, Coffee B and D regularly monitor and inspect coffee beans to adhere to quality standards. Notably, only Coffee B is Food and Drug Administration registered. Coffee B is also of good quality and provides satisfactory performance at an acceptable price or reasonable cost.

Product Design

Product design concentrates on design elements such as shape, color, form, texture, and visual aesthetics of the product packaging, labeling, and branding.

Product designs for each coffee are unique and consistent. Since coffee products use doypacks, all are rectangular, varying in color and form.

Generally, the product designs of all coffee products are appealing and attractive. Coffee A uses light brown paper packaging with coffee beans and a cup of coffee, Ifugao Province, and LGU-Lagawe Logo as visual image designs with a black background. The brand name is large enough to be readable.

On the other hand, Coffee B uses dark-colored plastic packaging. The "Bulul" or Tinagtaggu sculpture of Ifugao (carved wooden figure used to guard the rice crop by the Ifugaos) carrying coffee beans serves as the background image of the product. To be visible, a combination of a

yellow and green-colored font was used on a green and white-colored background. Coffee C uses black plastic packaging and adds the traditional red weave textile as an image background for its product labels. Labels are written in a white-colored font with a readable font style. Coffee D is in gold plastic packaging with a cup of coffee and beans as visible design elements. Coffee E uses aluminum-colored packaging with bluish color as the background for its product labels with coffee beans dripping from a cup as its visual elements. The white-colored font is used to be readable on its labels. Coffee F is in white-colored plastic packaging with ground and whole raw coffee beans as its visuals. Lastly, Coffee G is in a small red-green box with hot coffee in a cup clip art.

Packaging and Labeling

Based on the One Town One Product framework, packaging and labeling refer to the adequacy and accuracy of information or product identification.

Packaging

Product packaging refers to the material used in enclosing or protecting products for distribution, storage, sale, and use.

Generally, all coffee products have secured and safe packaging. All are airtight seals. All coffee products except Coffee G use doypack coffee packaging with a flat top and a rounded, oval-shaped bottom.

Only Coffee A and Coffee C contain a one-way degassing valve.

Notably, primary and secondary packaging is used by Coffee G. Pillow bags are used as the primary packaging, and boxes are used as secondary packaging. The packaged coffee is then loaded in a cardboard box for distribution.

Labeling

Product labeling refers to compliance with mandatory labeling standards such as adequate, accurate, legible, and prominent, so they are distinct from the background.

Coffee products offered and produced in the different barangays in Lagawe, Ifugao have visible and prominent labels. Brand names are clear and readable. The main ingredients used, product net weights or content and the details of manufacturers are clearly stated on the product label. More so, it can also be noted that only Coffee C, Coffee D, Coffee E, and Coffee F product labels contain contact numbers of manufacturers for food recall in cases of problems or defects for their products. However, all coffee products do not include the date markings for their manufacturing date and the expiry date, which are all critical components of food product labels. Only Coffee E consists of the direction for use and storage. However, it is not prominent and readable.

Marketability

Marketability assessment focuses on the identified target markets, marketing mix strategies (4Ps), business and

marketing plan, market penetration strategy, product differentiation, and positioning strategy.

Coffee lovers, tourists, locals, and consumers, in general, are the target markets of coffee producers in Lagawe, Ifugao.

Maintaining good aroma and taste are indicators of the excellent quality of coffee products. Thus, coffee producers capitalize on keeping these indicators of product quality as a strategy to attract customers. Coffee A, B, C, D, E, F, and G producers use production cost per unit as their method of pricing their products. In addition, all coffee producers ensure that their products are available to their partner retail stores and in OTOP Hub-Lagawe which are convenient to their customers.

Coffee A, B, C, and G use direct and indirect channels in distributing their products, while others purely use indirect channels on a credit, consignment, or cash basis.

Only Coffee B, C, and G use their production centers as their physical stores for selling their products. Others directly distribute to their partner retail stores.

Moreover, social media through Facebook is the most common platform for coffee producers to promote their products. Also, they believe in good word-of-mouth as the most powerful tool to spread a good image for the business.

All coffee producers actively participate in different trade fairs organized by the Department of Trade and Industry and by the Local Government Unit of Lagawe, Ifugao. Some of the trade fairs experienced by coffee producers were the Pre-Christmas Selling Fair 2021 cum Coffee and Cacao Pavilion at Ifugao Village and Capitol Atrium on November 15-26, 2021, 1st Enterprise and Livelihood Forum on November 15-26, 2021, Pre-Christmas Selling Fair at Capitol Atrium, Ifugao on November 18-20, 2020, and the Gotad Ad Ifugao 2019 Agro-Industrial Fair on June 16-18, 2019. Currently, coffee producers participate in Amlag 2022: Gotad ad Ifugao Agri-Industrial Trade Fair organized by the Local Government Unit of Ifugao in partnership with other government agencies in the province. The 2022 trade fair runs June 1-19, 2022, at the Provincial Capitol of Ifugao.

It can also be noted that coffee producers can penetrate other markets through established business networks or by partnering with other retail stores to distribute their finished products. However, it can be seen that there are no marketing plans available, identified differentiation, and positioning strategy for all coffee producers except for Coffee A, which subscribes to the One Town One Product of the municipality, thus, making it a positioning strategy.

Branding

Branding refers to the product's brand identity, referring to the brand name and logo availability, and intellectual property registration of the product.

All products have distinct brand identities. All coffee products have their unique brand names to be memorable, stand out from the competition, and avoid confusion among their target audiences. All are meaningful as they

communicate their brand essence. All are also accessible as people can easily interpret, say, and spell each out. All business names of coffee products are DTI registered. On the other hand, only Coffee B, and C have registered their brand name to IPOPHL through the aid of the Department of Trade and Industry.

Production and Delivery Capacity

Production and delivery capacity refers to the maximum output that can be achieved in producing manufactured goods, consistency of supply to consumers, availability of logistics (storage and transportation), and network.

Coffee producers in the different barangays in Lagawe, Ifugao vary in the production or volume capacity, depending on the distribution strategy used by the business. Coffee A operates two days per batch of production. The business produces 100 packs in every set of production. The business consistently supplies partnered retail stores and consumers twice a month. Meanwhile, Coffee B processes 200 kilograms of coffee per month. They usually distribute finished products to partner stores once a week. Other customers purchasing products in bulk are made to order. Coffee C processes 25-30 kilograms per month and supplies partner stores and cafés once a week or as needed. Coffee D processes 10-15 kilograms per month and distributes its finished product to different retail stores twice a month or as needed. Thus, processed products mentioned above consistently supply customers and consumers and are always available. On the other hand, Coffee E and F produce 50 and 20-30 packs per month, respectively. Coffee E and F are purely made to order only.

Accordingly, all coffee producers have their storage area for their finished products. Coffee A uses its production center provided by the Department of Agriculture as its processing center and storage area. Coffee C has allotted space for a storage area within their physical store.

Additionally, all coffee producers except Coffee A have partnered with retail stores in neighboring municipalities and provinces. Specifically, PAENRO-Ifugao has partnered with PAENRO-Baguio in the distribution of Coffee A. Coffee B distributes its product to Baguio, Banaue, and Lamut. At the same time, Coffee C makes their products available to Baguio, Santiago, and coffee shops within and outside the municipality. Coffee D ensures the availability of products within and outside the municipality. Coffee E has widened its market as it reaches the retail stores in Manila, Cavite, and Laguna.

All coffee producers except Coffee F use their vehicles to deliver products within and nearby municipalities. Public utility bus, public utility jeep, and public utility vehicle are used to deliver products outside the province with additional fees.

Financial Capabilities

Financial capability assessment focuses on the monitoring of income and expenditures, the capability to

prepare and analyze financial statements, availability of budget plans and the conduct of inventories.

As to their financial capability, proper record-keeping has been the practice of all coffee producers in the different barangays in Lagawe, Ifugao in monitoring their income and expenditures and tracking the money coming in and out of business. These are the bases for preparing various financial statements, such as income and cash flow statements. According to the participants, the municipal accountant and volunteer bookkeepers from the municipality prepare the financial statements for Coffee A and B while the owners of Coffee C, D, and G prepare for their own business. When asked about financial statement preparation, Coffee E and F both remarked "none".

Apparently, only Coffee A and C producers prepare a budget plan for the business and allot funds for product improvements. Both businesses allocate funds for quality improvement and additional flavorings of their coffee. To date, all coffee producers except Coffee D do not have credit. Coffee D owner pays the business debts every week deducted from the business's income. Moreover, the owners of coffee products regularly conduct inventories while inventory is being undertaken by the procurement officer of Coffee A every six months.

Innovation

The significant improvements in product offerings, technologies used, components and materials, and incorporated software are aspects of the innovation capability of the business.

According to the participants, no product developments or improvements have been made to the product quality to date. However, there are plans for improvements.

As the Department of Trade and Industry guides the participants, significant improvements are made to improve packaging and labeling if there are opportunities.

There are also significant improvements in the technology they use in the production process. Participants shared that the majority of technology used is from the assistance of different government agencies such as the Department of Trade and Industry through the Shared Service Facility and the Provincial Agricultural, Environmental, and Natural Resources Office. Duhuller, roasting machines, grinder, dryer, packaging sealers, and dozer machines are some of the assistance they received from the different government agencies' various programs to improve the effectiveness and efficiency of business operation. Other technologies such as solar power and sun dryers are personal investments made by owners of Coffee C. Generally, the persons in charge of operating these technologies are trained or have a background in coffee processing.

Cultural Value

The pride of place of the locality in the product is seen as a substantial factor in ensuring business sustainability. Coffee producers believe that their usage of all-natural

indigenous coffee, including making the final product, makes the product culturally connected.

According to Coffee B, coffee producers strictly follow standardized production processes in sorting, drying, fermenting, roasting, grinding, and packaging. Immediately after purchasing coffee beans, higher-quality coffee beans are separated. For Coffee A, using dehuller makes it easier for the enterprise to remove the hull or husks from the dried parchment coffee or dried coffee. Then, they sundry the beans. Afterwards, selected dried coffee beans are put into a dry sack with cellophane for fermentation for 16-36 hours. The pulped and fermented beans are dried out of moisture content to prepare them for storage properly. Then, roasting and grinding provide the sole purpose of obtaining the most flavor for a cup of coffee. Lastly, finished coffee products are then packaged and sealed for distribution.

Customer Experience

The mechanism for customer feedback, service recovery, and post-sales service fall under customer service experience assessment.

Results reveal that there is no standardized mechanism for soliciting feedback from customers. Coffee B and C

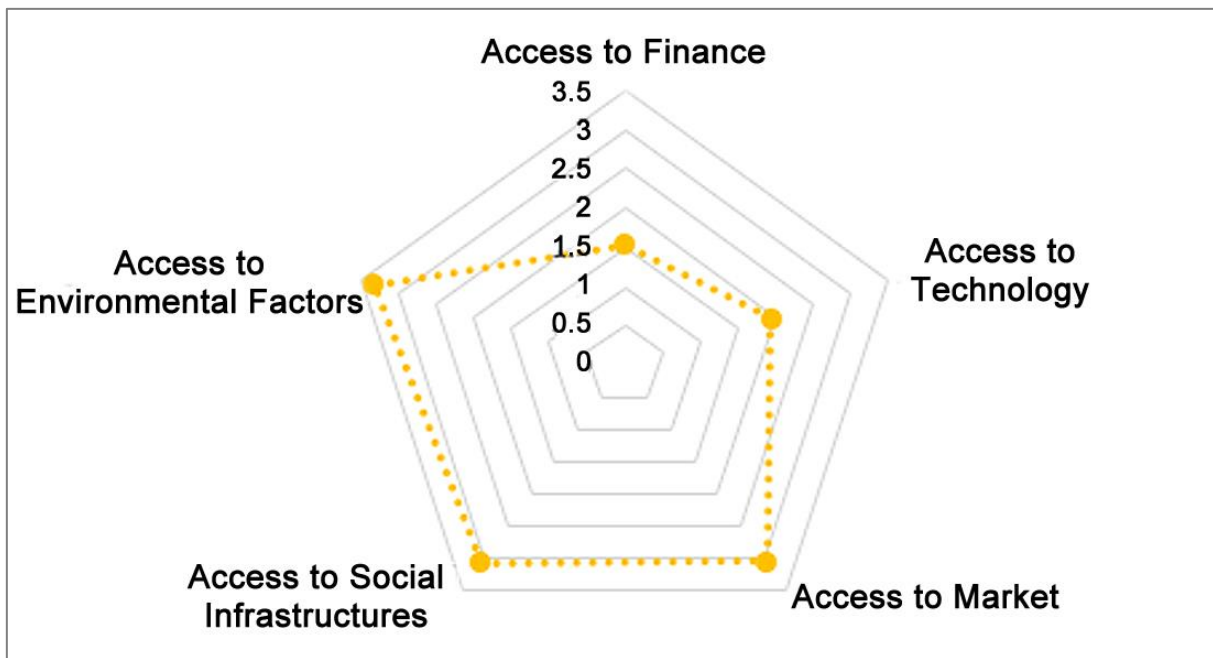
rely on Facebook reviews, and verbal comments from customers whenever they visit the store. More so, it can be noted that there are no post-sales services offered to their customers.

3.2. Extent of How the External Factors Affect the Producers in Lagawe, Ifugao

Figure 1 presents the quantitative results on the access to finance among participants of the study in Lagawe, Ifugao. Also, how it affects producers is part of the discussion.

Generally, based on the quantitative results of the study, it can be gleaned from the table that participants of the study claimed that they never received any financial subsidy from the government to support their business operation; thus, it does not affect producers with an overall mean of 1.53 and with a qualitative description of *no effect* in a four-point Likert scale.

In an interview conducted with participants to corroborate and validate findings from the quantitative data, one (1) participant said that he has invested personal money for the start-up and continuous operation of the business.



Legend: 1.0-1.75= No Effect (NE); 1.76-2.50= Slight Effect (SE); 2.51-3.25= Great Effect (GE); 3.26-4.00= Very Great Effect (VGE)

Figure 1. Mean on the External Factors affecting Coffee Producers

On the other hand, five (5) participants have financial support from relatives for business expansion. Informal finance is the capital that has been sourced from friends, family, relatives, or private moneylenders. Informal lending decision is made using soft (private) information and relationship-based principles. Specifically, informal debt can attract producers because of its relative speed, lower initial transaction fees, and freedom from collateral requirements [14]. While the lower interest rates of formal bank lending might make it the preferred route, a longer loan processing time might not tally with the required timeframe [15, 16].

All other participants availed of private loans from lending institutions such as microfinance and credit cooperatives. This can be attributed to the fact that it is easier to borrow from non-bank as they are everywhere. Accordingly, non-bank is more convenient and does not require collateral. Consideration for a loan is based on the source of income. This implies that producers in the locality prefer informal lending institutions because of convenience or less difficulty and because of the receptiveness and willingness of the lender. In addition, small, non-listed firms are less likely to have optimal access to bank loans due to the informational asymmetries associated with their smallness and newness, which are well known to be small firm-specific financial constraints. It is not only formal debt finance that is largely inaccessible to these firms; equity markets such as initial public offering (IPO) and venture capital are also options that are not open to many small companies. However, informal finance remains to be positively associated with firm growth and performance in several developing countries [15].

In an interview with the different government agencies, the representatives of the Department of Labor and Employment (DOLE) through the Local Government Unit – PESO (LGU-PESO) Office and the Department of Science and Technology (DOST) –Ifugao do not offer cash assistance to the producers for start-up capital or to sustain business operations. The assistance is in the form of training, materials, and equipment.

Conversely, the Department of Trade and Industry has the *Pondo sa Pagbabago at Pag-asenso* (P3) program. It is a financing initiative of the government to assist micro-producers throughout the country by providing affordable and cost-efficient micro loans.

More so, the Provincial Agriculture, Environment, and Natural Resources Office (PAENRO) offers Kapital Access for Young Agripreneurs (KAYA) Program and Agri-Negosyo Loan Program (ANYO). The Kapital Access for Young Agripreneurs (KAYA) Program provides loans to finance working capital for agri-based projects of young producers.

On the other hand, Figure 1 also presents the quantitative results on access to technology and how it affects producers in Lagawe, Ifugao. As to access to technology, findings revealed that for participants, the use of their

internet connection or own mobile data has greatly affected business operations. Currently, Ifugao has no existing fiber optics communications technology. Further, participants of the study claim that access to food processing technology and raw materials production technology from different government agencies greatly affected or benefited the conduct of the business, particularly in improving the production process. In an interview conducted with the producers, various raw processing materials were availed by some study participants. Some raw processing materials are as follows:

Dehuller, Roasting Machines, Grinder or Pulverizer Machine, Packaging Sealer, Dryer.

The raw materials are from the Department of Trade and Industry, Department of Science and Technology (DOST) - Ifugao, Provincial Agriculture, Environment and Natural Resources Office (PAENRO), and from the Provincial Local Government Unit and were used for improving the production processes to improve quality of the product, thus, helping in sustaining production of high-quality products, affecting income to a great extent. Also, the diagnostic and self-assessment tools and the technical knowledge and resources provided by different national government agencies were applied to support business operations. Generally, collaboration with other stakeholders, such as the different government agencies, affected enterprise to a *very great extent* in exchanging information and in developing new technologies. This implies that various government agencies are extending their assistance to local producers to help improve their business operations as they contribute to the country's economic development.

The Department of Trade and Industry also has the Shared Service Facility (SSF)-Shared Success for Filipino MSMEs. SSF is a flagship project of the Department of Trade and Industry aimed at improving MSME productivity and efficiency through better access to technology.

Another government agency that supports local producers is the DOST-Ifugao. The agency promotes the adoption of technologies with the end view of alleviating poverty, accelerating growth and development in the countryside through creating livelihood opportunities for rural enterprises to be globally competitive, and creating employment. DOST offers Small Enterprise Technology Upgrading Program (SETUP) that intends to strengthen the country's innovation system.

More so, the KAYA Program of PAENRO- Ifugao can be used to finance fixed asset acquisition requirements of start-ups or existing agri-based projects of young producers.

And lastly, the DOLE, through the LGU- PESO Office, offers DOLE Integrated Livelihood Program (DILP). This enables existing livelihood undertaking to a higher standard through technological improvements in equipment and machinery. DILP Kabuhayan Enhancement

Program can be used for improvement. DILP has the Common Service Facility (CSF), wherein equipment, tool, accessories, and other auxiliary items can be commonly used by beneficiaries.

Quantitative results also revealed that registered coffee producers as study participants have access to different government programs and activities that significantly affect enterprises in selling products across local and national borders, with an overall mean of 3.07. Specifically, quantitative findings reveal that the assistance in selling products within and national border, in promoting their products online, in mentoring and coaching producers in their product development efforts, has affected businesses to a *very great extent*. This implies that the interventions of the government agencies in the province ensure the availability and visibility of Lagawe, Ifugao products to different municipalities, increasing product awareness and reaching a broader market. More so, this ensures product quality and sustainability of businesses.

Allowing the business to move products freely without additional expense, access to market stalls to operate business, access to retailers within and outside the province, accessing commercial links of producers in large enterprises, the establishment of strong business networks within and outside of the province, access to simplified policies and procedures regarding market entry requirements allowing the enterprise to operate, access market information necessary for its operation, access to improvements on offline promotional activities, have all *greatly affected* the coffee businesses in Lagawe, Ifugao. This implies that government agencies in Ifugao, particularly the Department of Trade and Industry, are very active in keeping producers in the marketplace within and outside the province.

Concerning the study's qualitative findings, programs by the different government agencies are present to capacitate MSMEs. Accordingly, producers are beneficiaries of One Town One Product Next Gen, wherein they are capacitated primarily on product development (design services and intervention, packaging, and labeling, FDA, nutrifacts, and testing assistance), brand equity and development, and marketing platforms and promotion. On the other hand, other producers are under the Kapatid Mentor Me Program which also comprises training on product development, marketing, operations management, accounting, taxation, and finance. Both OTOP Next gen and KMME are under the Department of Trade and Industry supervision.

Likewise, all study participants are beneficiaries of Go Lokal Philippines and OTOP Hub Philippines of OTOP.PH which are also programs under the Department of Trade and Industry. Go Lokal Philippines offers merchandise development assistance to produce commercially viable products for the market and market access to stores or spaces provided by retail partners such as mall and retail operators. Meanwhile, the OTOP Hub

Philippines of OTOP.PH is a retail store or space where products from One Town, One Product Next-Gen offerings can be found. Catering to the general mainstream market of local buyers and tourists, these one-stop-shops offer a general outlet for quality OTOP merchandise before they level up to the premium market catered to by Go Lokal and other high-end markets platforms. All products of the participants can be found in the OTOP.PH in Lagawe, Ifugao.

There are also programs and activities to support market access from other government agencies. DOST-Ifugao provides designs of product packaging and labeling materials for MSMEs in the region. Packaging and labeling services are also coordinated with the Packaging Technology Division (PTD) of the Industrial Technology Division Institute (ITDI). DOST-Ifugao also established OneStore Hub to widen the target market scope through consolidating locally produced products. Meanwhile, DOLE, through PESO Office, offers capacity building to producers upon request.

It can be gleaned from the figure based on the study's quantitative results. Generally, participants have access to the physical elements of interconnected systems that significantly affect the conduct of the business, with a mean of 3.09. Businesses can provide commodities and services to consumers, enabling them to maintain and improve offerings significantly. Specifically, access to social infrastructures such as health care clinics, access to transportation networks such as roads, access to power utilities, sanitation utilities, have affected the enterprise to a *very great extent*. This can be attributed to the fact that these social infrastructures, such as roads, power, and sanitation utilities, are vital to the day-to-day operation of the business. Access to health care clinics also ensures that the workforce is ready to perform their job.

Additionally, access to water and waste management utilities has greatly affected business. However, it can be noted that, in general, access to the combination of traditional and digital communication utilities for business conduct has no effect. This is also true for the producers in Lagawe, Ifugao. Notably, the use of the internet has greatly affected the conduct of the business while using telephone or mobile phone for the conduct of business has a more negligible effect. But still, participants believe that word of mouth is still the most powerful tool in establishing product awareness. Access to traditional communication methods like mail, telegraph, TV ads, radio ads, and print media also does not affect the business's operation. This can be attributed to the fact that with the advent of the internet and the surge of the COVID-19 pandemic, businesses are forced to shift from traditional ways of promoting products to digitalized marketing.

Results from the quantitative part of the study were supported by the findings gathered in the qualitative aspect. All study participants have access to public health care facilities, transportation networks, power, water, sanitation, waste management, and communication utilities. Waste

management initiatives are from the Local Government Unit of Lagawe, Ifugao.

Generally, the identified environmental factors such as the supply of raw materials, logistics, competition, government regulations, and manpower affected the continuity of business operation *greatly*, with an overall mean of 3.34 on a four-point Likert scale. Specifically, all participants of the study have partnered with different suppliers for the raw materials and for the processing aids and machines to ensure production of final products to a *very great extent*. All businesses have also partnered with logistics for both inbound and outbound. Participants strongly agree that competition has affected the sustainability of the supply of raw materials, patrons, and profitability. Lastly, with the resumption of businesses after strict lockdown, all enterprises have an adequate workforce to continuously produce the demands of customers. According to the participants in an interview, sustainable partnership with suppliers enables the businesses to get or acquire good quality raw materials, which is an important factor in producing final quality outputs. Meanwhile, partnerships with outbound logistics ensure that the products reach actual and potential buyers.

3.3. Proposed Comprehensive Framework for Coffee Industry for Sustainable Rural Development

As required of all well-managed organization, the right external and internal environment with the right people in it is essential [17]. Based on the study's findings, a comprehensive framework for the coffee industry as a sustainable rural development strategy is proposed shown in Figure 2. This framework is a graphical representation of the critical drivers for coffee producers to become sustainable.

The framework is based on the existing best practices of the coffee producers. Identified recommendations were added to make coffee products become sustainable and become a strategy for rural development. Based on the framework, determinants of business success consist of internal and external factors. Internal factors relate to the features of the entrepreneur or business owner, business activity, and product itself. In contrast, external factors deal with variables that are beyond the entrepreneur's control, which pertains to support from different government and private agencies.

Based on the analysis of locally-made products in Lagawe, Ifugao, Philippines, some strategies or factors are vital to sustaining coffee processing in Lagawe, Ifugao. These include strategies that will make the coffee product in Lagawe, Ifugao, distinct from its direct and indirect competitors, enabling the development to reach global markets. As seen on the framework, a color-coded system was used to indicate priority areas. Priority field indicates the level of importance given to a strategy identified. Strategies are classified as essential priority (red), priority (light red), and medium or middle priority (yellow). Red

and light red-colored segments of the framework should be given importance by producers and local government agencies as these areas are priority, need improvement and considered vital to become sustainable in the long run. Yellow-filled areas of the framework are medium or middle priority as these areas are already available. However, these should be maintained and strengthened.

Maintaining exportable product quality reflecting local touch and pride, consistently maintaining excellent taste and aroma with prolonged shelf-life, and standardized and excellent quality control from coffee beans to commercialization will make Lagawe coffee products distinct, attracting immense market potential domestically and internationally. To improve quality of coffee products, coffee should regulate coffee bean suppliers. The conduct of research and development on coffee may help improve the product. Capability building for coffee stakeholders from bean to brew may strengthen skills and competencies of participating stakeholders.

The integration of its own identity as Ifugao, reflecting local touch and pride, such as the usage of *Inabol*, LGU-Logo and *bul-ul* or *tinagtaggu* or any other image that will represent the distinct culture of the municipality on its product designs and the usage of Ifugao inspired brand name and logo will facilitate easier product recall from its identified markets.

When penetrating a broader market, product packaging and labeling are essential components to strive in a competitive business community. Thus, ensuring durable, dependable, attractive, safe, secured, and environmentally friendly packaging will guarantee that products will last and reach their target users safe and sound. Additionally, product labels conforming to prescribed standards are one of the critical indicators of purchase intentions.

Moreover, having a clear path for the direction of the business is essential; thus, maintaining a business plan comprising marketing plan will enable the business to track and evaluate its progress. Having the right product, price, and place will create broader product awareness. Producers may conduct market matching and inclusive and extensive promotional strategies.

Consistent production and availability of products, or putting-up centralized processing centers with up-to-date production and processing technologies, delivery mechanisms, storage capacity, network establishments, and the presence of accounting standards and systems with inventory management within the business are also vital to the success of the business. The importance of product development initiatives should not be overlooked and may focus on the strengths of the abundant local resources (coffee). Exploring other potentials on flavorings and other forms suited to different market segments may also give an edge to the product. Combining coffee with other indigenous raw materials like ginger and turmeric may give additional reason for health-conscious consumers to purchase coffee from Lagawe, Ifugao.

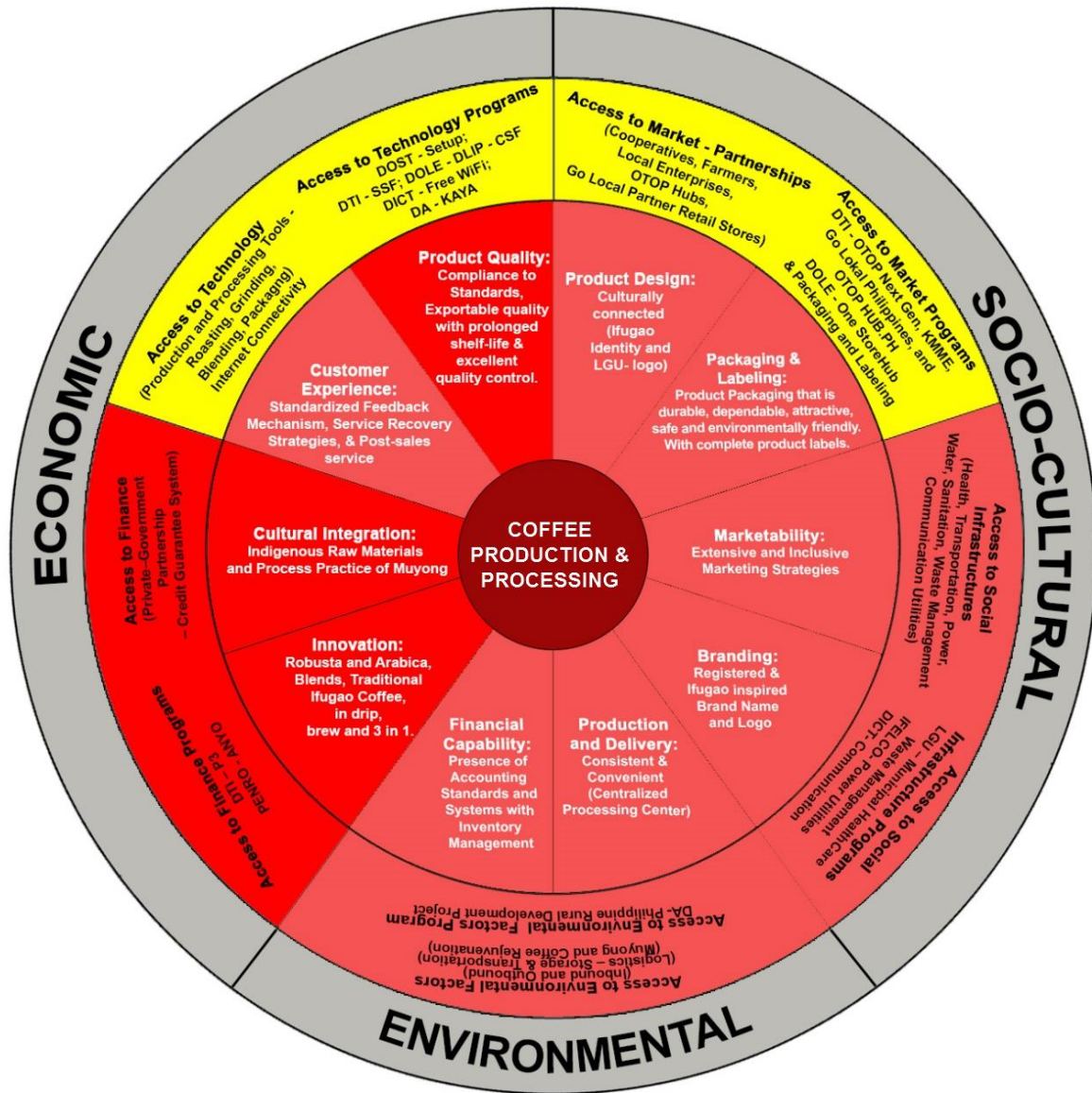


Figure 2. Proposed Framework for Sustainable Coffee Industry

A product with a distinctive local flavor and culture can be aggressive in trading. Thus, maintaining the usage of indigenous coffee beans, touched with the Ifugao way of processing, will enhance product value. Coffee stakeholders may practice *Muyong* as a place for planting coffee for generations. *Muyong* is an indigenous knowledge system for natural resource management practiced by the indigenous communities in the Ifugao, Philippines.

Lastly, to compete in the global market, residents need to continually develop their unique ideas and values in the spirit of self-reliance, self-confidence, and creativity, reflecting on the standardization of feedback mechanism, product recovery strategies, and post-sales services offered as an added value to its products. Final processed products

will then be ready for commercialization and distribution within and outside municipality.

Particularly, the coffee industry is packed with industry enablers from the government sector and non-government organizations. These enablers provide support services in the form of technical and financial interventions, including the provision of facilities and social infrastructures, access to market and environmental factors indicated in their respective mandates. These generally enable the development and strengthening of the coffee industry in the municipality.

Notably, access to finance, social infrastructures, and environmental factor (manpower), are the necessary support from industry enablers from seed to cup or from inputs to local and national trading (domestic), including

reaching international markets (exporting), to ensure the growth of the coffee industry. Access to finance may be in the form of subsidized loans or the development of a credit guarantee system (A scheme provides third-party credit risk mitigation to lenders through the absorption of a portion of the lender's losses on the loans made to SMEs in case of default, typically in return for a fee), the settlement of collateral problems, and the provision of processing and bureaucracy from start-up, continuous production, acquisition of raw materials and technology, process improvements, certifications, quality assurance, and market development. There are existing programs for access to finance from the DTI through P3 and DA through the ANYO Program. Wider dissemination of programs to target beneficiaries must be strengthened to maximize these available funding to support and improve business operations.

Access to technology supports is also available to support producers within the locality. The SSF, SETUP, DILP and CSF, and KAYA program of DTI, DOST, DOLE, and DA respectively are great avenues to acquire up-to-date facilities, production and processing tools and equipment to improve the processes of making coffee products effectively and efficiently from product quality to commercialization. The usage of Internet in the business cannot be denied, thus, the future plan for free-WiFi of the DICT will be useful in reaching wider market.

Capability building (training, seminars, and mentoring) to coffee producers should cover from product conceptualization to development, including commercialization of products globally. Establishment of active linkages (partnerships with local, national, international) will increase product awareness, visibility and availability. Coffee producers can maximize acquiring programs from the DTI such as the KMME program and OTOP Next Gen to ensure success of the enterprise. Coffee producers may also use the Go Lokal Program and OTOP Hub.Ph of DTI and OneStoreHub of DOST to strengthen connections with other traders within and outside of the country.

Access to environmental factors such as adequacy of raw and processing materials, availability of local manpower, and presence of logistics such as storage and transportation are essential to sustain business operations. And in order to have an adequate supply of coffee beans for the coffee industry in Lagawe, Ifugao, farmers within and in nearby municipalities must increase production and productivity first (input). To ensure consistency of supply of raw materials, increase in production of coffee beans is a must. Coffee stakeholders should collaboratively work in identifying and developing expansion areas for coffee production and promote inter-cropping of coffee with high-value crops to discourage the conversion of coffee plantations to other uses. *Muyong* is a traditional forestry practice which helps promote sustainable forest management in the province while achieving economic

progress. *Muyong* is a private traditionally inherited forest or communally managed forestry area. It forms unique clusters of a micro watershed which is a part of the whole mountain ecology and serves as a rainwater and filtration system and is saturated with irrigated water all year round. For this reason, it is ideal for coffee production. *Muyong* is an ideal forest management strategy which increases the production of coffee beans at the same time. These naturally growing seedlings can be the best choice as planting materials if available, easily accessible, and affordable.

Additionally, to increase productivity, organic farming techniques such as weeding, pruning, rehabilitation, and rejuvenation must be practiced. According to the Department of Agriculture, coffee rejuvenation is the cutting of old trees' vertical stems to induce new sprouts' growth. It is a widely accepted practice for revitalizing coffee farms and is more advantageous than replanting. Consistent supply of raw materials (environmental factor-inbound) for the enterprise will ensure continuity of processing and production of products. Needless to say, access to environmental factors (supply of raw and processing materials, logistics such as hermeneutic storage and transportation) is an important contributory factor towards achieving sustainable rural development through coffee processing. The Philippine Rural Development Project of the Department of Agriculture will be useful for improving enterprise facility and acquisition of additional technology for the business.

Similarly, building, upgrading, and expanding social infrastructural facilities such as the availability of health, transportation, power, water, sanitation, waste management, and communication utilities which are provided by the Local Government Unit of Lagawe are vital to ensure the smooth operation of the enterprise.

Significantly, the framework is anchored on a sustainability triumvirate, particularly in the context of developing environmentally sound, socially and culturally desirable, and economically viable coffee development in all identified strategies. The comprehensive framework guides all coffee producers to achieve rural development in Lagawe, Ifugao. This enables coffee industry stakeholders to achieve economic growth, increased and sustained yields and incomes, and improved production, processing, and enhancement of coffee industry stakeholders' capabilities and skills for its current and future generations. In the environmental context, the framework seeks to achieve the production and processing of coffee with particular consideration for the environment. Thus, strategies proposed to spur development in coffee production are aligned with environmental preservation and protection. Socially and culturally desirable strategies for developing the coffee community are also laid out to ensure human resource development. This is accompanied by economically viable practices that encourage fair and profitable distribution to attain inclusive business growth

with much emphasis on the economic well-being of the coffee producers.

Having these critical indicators or factors, integrated in the final product will enable coffee produced in Lagawe to be known as a product that reflects their locality's identity that they can be proud of.

4. Conclusions

Based on the findings of the study, the following conclusions were drawn:

1. Locally made coffee products produced by local producers in Lagawe, Ifugao, Philippines, are in a good state in terms of One Town One Product Criteria. However, some areas for improvement are identified to sustain business in the long run and become a strategy for rural development.
2. Producers have access to different external factors provided by government agencies from national to local, including private organizations that have significantly affected operations, productions, and business continuity.
3. A proposed comprehensive framework for sustainable rural development strategy was made to guide local producers of coffee on the necessary drivers to establish a sustainable industry-viable product to reach a broader market and become a rural development driver. Lastly, the framework is anchored on the triple bottom line as basis in formulating strategies to achieve sustainable rural development.

5. Recommendations

In the light of the findings and conclusions, the researcher forwards the following recommendations:

To the Product Producers

1. *Product Quality.* Product producers should consider compliance with standards of different agencies like Food and Drug Administration to ensure the quality of products. Trials, experiments, and formal research may be conducted to improve the shelf-life of products which may allow the offering of the products outside the province for a more extended period. A quality control system must also be in place to ensure the efficient and effective operation of the business. Such will encourage quality consciousness, proper utilization of resources, and cost reduction, improve production techniques and methods, and improve consumer retention and satisfaction.
2. *Product Designs.* Product designs must be based on the changing preference and demands of consumers, including trends in the market. The harmony in packaging materials and the product layout

containing product labels should be considered. Product designs must also integrate the Ifugao identity to have a clear image of the product.

3. *Packaging and Labeling.* Product packaging should be durable and of high quality, cost-effective and convenient, safe and secured, environment-friendly, and compliant with prescribed standards by different governing rules and regulations on the usage of product packaging. Products being offered locally should conform to the existing defined product labels. In cases products will be for export, product packaging and labeling should conform to the standards prescribed by the country.
4. *Marketability.* Producers should strengthen marketing mix strategies. Consistent product improvements in quality may be a great help in gaining a more significant market share. Differentiation strategy and positioning strategy may be a great help to be remembered by customers. Pricing strategies may be based on the cost of producing the product and on the supply and demand of the products. They may also consider pricing strategies used by direct and indirect competitors. Producers may further consider using varied payment options such as cash, cards, mobile payments, and electronic bank transfers. Producers may use intensive and alternative product distribution methods to ensure consumers' availability and convenience. They may also combine the use of delivery and drop and collection methods for the distribution of products. Policies regarding delivery mechanisms should be clear and well-established. Promotions and partnerships with retail stores may expand existing market share and penetrate other markets.

Moreover, online and offline promotional activities may intensify product awareness, which means that both traditional and digital marketing may be used. Sales promotions and personal selling are still timely, relevant, and effective. The business should have a clear plan reflecting business goals and objectives. A marketing plan may be integrated into a detailed business plan.

5. *Branding.* Branding initiatives may affect differentiation and positioning strategy. Thus, businesses may consider developing brand names and logos distinct, authentic, and memorable. Product identity should be registered to appropriate government agencies like Intellectual Property of the Philippines to protect producers' intellectual property.
6. *Production and Delivery Capacity.* Producers may apply total quality management, production and operations schedules, and proper inventory management. In addition, they should monitor and evaluate the implementation of activities regularly. Business networks should be strengthened by establishing connections within and outside the province.

7. *Financial Capability.* Producers should be responsible for preparing different financial reports to analyze and understand the current economic condition of the enterprise. By doing this, producers may plan and implement interventions to help the enterprise grow. Proper allocation is essential. Funds for product developments or improvements for product quality, production process technologies, and certifications should not be overlooked.
 8. *Innovations.* Producers may focus on the flagship product of the business for its product development efforts. They may consider the abundance of raw materials available in the locality. Continuous improvement in every aspect of the process, product and service should be a practice for the business.
 9. *Cultural Integration.* Producers should strengthen cultural connections of the products by integrating them into the actual product and the production process. The Ifugao way of processing products (best kept secret) may be developed to ensure production of products within generations.
 10. *Customer Experience.* Feedback mechanisms should be part of the practice of the business. Quick surveys may be of great use to collect customer input to improve product performance. Customer reviews are vital as they reflect customers' experience with the products. Compiling customer reviews is a great help to establish a good image of the business, thus helping promote the business.
- On the other hand, a policy on service recovery should be in place to convert dissatisfied customers to loyal customers. Lastly, after-sales service may be used as a business strategy as it typically leads to higher customer satisfaction, brand loyalty, and even word-of-mouth marketing. Producers may consider offering customer service, training, and repairs for non-consumable products.
11. Producers should also take the opportunity and actively participate in the seminars, training, workshops, mentoring, and coaching initiatives of different private-government agencies to maximize the potential of the locally-made products.

To the Different Private and Government Agencies

1. The private and government agencies could strengthen collaboration on guaranteed access to funds for small and midsize local producers by offering government subsidies and support through the development of a credit guarantee system, the settlement of collateral problems, and the provision of processing and bureaucracy for small businesses. Broadening the finance options available and accessible to producers is vital in fostering their development and sustaining the most dynamic enterprises in a credit-constrained environment. Awareness of funding opportunities should also be strengthened.

2. The private and different government agencies should strengthen partnerships in coordinating, and working hand-in-hand to avoid duplication of local producers' programs, projects and activities. Local and provincial governments may craft government subsidy policies and tie-up with private lending organizations on access to finance accessible and bearable by producers. They may also formulate comprehensive policies on the access to social infrastructure and environmental factors, such as the supply of raw materials, partner logistics within and outside the province, supply of workforce, and management of competition within the locality. The DICT should focus on strengthening connectivity within the municipality. DICT should also continue capacitating producers on the usage of different digital tools that may aid the business. TESDA, DOST, and Academic Institutions may help with the technological advancements necessary for the operation of the business. The Department of Trade and Industry and Academic institutions may focus on capacitating producers from product conceptualization and development to commercialization, including building networks up to national and international boundaries. This would serve as an extension program for academic institutions, which is one of the mandates of higher education institutions. The Department of Agriculture may focus on capacitating local farmers to ensure a sustainable supply of raw materials.
3. Constant monitoring and evaluation are necessary to ensure the success of the private and government agencies' programs, projects, and activities, and business sustainability, thus aiding rural development.
4. Following the practices of sustainable environmental agriculture to protect the resources from deterioration and ensure healthy-safe products in accordance with the specifications of the global ISO system for food by using biological methods to serve the coffee, and refraining from using the chemical methods.

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