

Participant Profiling Analysis for the Kelulutpreneurs Incubator Under the Community Engagement Project of UiTM Cawangan Melaka and Yayasan TM

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Abstract

Purpose: This research paper presents a participant profiling analysis conducted for the Kelulutpreneurs Incubator; an integral component of the Community Engagement Project initiated by Universiti Teknologi MARA (UiTM) Cawangan Melaka in collaboration with Yayasan TM. The project aims to empower and uplift local beekeeping entrepreneurs, known as Kelulutpreneurs. There are two steps of screening involved in the participant selection procedure. This study adapts the exploratory research method through content analysis of submitted forms by the applicants, through specialized incubation programs tailored to their needs. The primary objective of this study was to comprehensively profile the aspiring and existing Kelulutpreneurs participating in the incubator program.

Design/methodology/approach: The profiling process encompassed socio-demographic data, entrepreneurial experience, motivations, challenges, and aspirations. By understanding the unique characteristics and attributes of these Kelulutpreneurs, the incubator can tailor its programs and support services to cater to their specific requirements effectively. Utilizing a mixed-methods approach, both qualitative and quantitative data were collected from the participants through surveys and interviews. The qualitative analysis provided rich insights into the participants' personal experiences and perceptions, while the quantitative data enabled the identification of key trends and patterns.

Findings: The findings revealed a diverse group of Kelulutpreneurs, ranging from enthusiastic newcomers with limited experience to seasoned entrepreneurs seeking innovation and growth opportunities. The results of this participant profiling analysis provide valuable inputs to enhance the Kelulutpreneurs Incubator's impact and effectiveness. The tailored support services and training programs can be optimized to address the specific needs and aspirations of the Kelulutpreneurs, thereby fostering their growth and sustainability.

Research limitations/implications: Respondents limited are only selected applicants and B40 group at Universiti Teknologi Malaysia, Cawangan Melaka, Lendu Alor Gajah.

Practical implications: This business model to increasing income to of B40 group, enhance the well-being as knowledge transfer program from university to community and increase sustainable of the biodiversity to environmental

Originality/value: This research contributes to the body of knowledge on community engagement initiatives and their potential for empowering local entrepreneurs to drive positive change in their communities.

Keywords: Kelulutpreneurs Incubator, Community Engagement, Beekeeping Entrepreneurs, Local Empowerment

Introduction

In today's dynamic and ever-evolving socio-economic landscape, community engagement projects play a pivotal role in fostering sustainable development and empowerment. One such commendable initiative is the "Kelulutpreneurs Incubator" under the collaborative efforts of UiTM Cawangan Melaka and Yayasan TM. This groundbreaking endeavor not only aims to promote entrepreneurship but also seeks to elevate the indigenous industry of kelulut or stingless beekeeping.

This innovative undertaking requires a comprehensive understanding of the participants involved and their diverse backgrounds, aspirations, and potential contributions. Therefore, the essence of "Participant Profiling Analysis" in this context cannot be overstated. By delving into the profiles of the individuals engaging in the Kelulutpreneurs Incubator, we can unlock valuable insights that will drive the success and sustainability of this community engagement project.

In this introduction, we will explore the significance of participant profiling, shed light on the Kelulutpreneurs Incubator, and underline the partnership between UiTM Cawangan Melaka and Yayasan TM, setting the stage for a more in-depth analysis of this vital community development initiative.

Literature Review

Community Engagement

The term "community engagement" refers to the cooperative process of working with and through groups of people who share geographic proximity, common interests, or comparable situations to solve issues affecting their well-being, according to the Centers for Disease Control and Prevention (CDC, 2011). According to a more contemporary interpretation, community involvement is people coming together via inspired action and learning to create and realize lofty aspirations for their shared future (Born, 2012). In all cases, community engagement is centered on working together to address common issues or goals.

Establishing trust and cultivating connections that result in enduring collaborations and, eventually, positive outcomes that improve the quality of life for community people are the primary goals of community involvement. There are nine key concepts that leaders and organizations should consider creating successful engagement procedures and partnerships, according to the concepts of Community Engagement (CDC, 2011). These guidelines are divided into three categories: things to think about before starting, crucial components for engagement, and crucial elements for guaranteeing successful involvement.

Community engagement is the practice of actively involving and working with community people, groups, or organizations to address problems and make decisions that have an impact on their well-being and the general improvement of the community is referred to as community engagement. It involves giving people the chance to engage in and contribute to forming projects, policies, programs, or initiatives that have an impact on their lives.

Community involvement aims to include residents in the decision-making process and goes beyond merely sharing facts. This can be done in several ways, such as by asking for feedback, integrating locals in project planning and implementation, working with stakeholders,

promoting community empowerment, bringing significant concerns to light, and fostering open discussions.

Community engagement is viewed as a crucial component of democratic governance and social development since it guarantees that community needs and preferences are met. Community engagement attempts to actively involve members of the community in the decision-making process, going beyond merely educating people about decisions or actions that are being taken. This can be accomplished through a variety of techniques and strategies. First is consultation which is getting the community's opinion and feedback before making choices or putting plans into action. Second, participation which is Involving residents in the conception, development, and implementation of projects, initiatives, or programs. Third, collaboration is the process of cooperatively developing strategies and solutions with stakeholders, organizations, and people of the community. Fourth, empowerment by giving community members the tools, knowledge, and assistance they need to take charge of their own needs and problems. Next, information sharing and public awareness-building regarding significant concerns affecting the neighbourhood and finally making opportunities for open and honest communication during dialogue.

Young people's involvement in communities has drawn a lot of attention in both academic and practical contexts. Early research in this field centred on issues including adolescent cognitive development, the stability of intergenerational dynamics, and political socialization (see Flanagan 2004). Through the prisms of civic engagement and social capital, the involvement of young people within communities has been studied in more recent decades (Coleman 1988; Jarrett et al. 2005). The term "youth" in our context refers to both teenagers and those in their early to mid-20s.

The term "community" has many different meanings, ranging from small, neighbourhood-level collectives to larger, even global, ones (Kadushin et al. 2005). Young people actively participate and assert their influence in the environments around them through a variety of interconnected processes, primarily through formal and informal organizations and civic activities within the communities they are situated in. This definition of youth community engagement is based on these constituent elements.

Social Entrepreneurship

Social entrepreneurship refers to the practice of creating and managing businesses that are focused on generating both financial profits and positive social or environmental impact. These ventures tackle various societal issues, such as poverty, education, healthcare, and environmental sustainability, while also aiming to be financially sustainable. The main goal is to create positive change by applying innovative and sustainable solutions. Companies involved in social business, which is a specific type of business focused on addressing social and environmental challenges while also being financially sustainable, make distinct contributions to society and the greater good. Some of the contributions of companies engaged in social business include:

1. Solving Social and Environmental Issues: Social businesses are dedicated to addressing specific social or environmental challenges. They contribute by creating innovative solutions to problems such as poverty, hunger, healthcare access, clean water, and environmental sustainability.

2. **Sustainable Impact:** Unlike traditional charitable organizations that rely on donations and grants, social businesses aim for self-sustainability. They contribute to long-term solutions by creating revenue-generating models that continue to address social issues without relying solely on external funding.
3. **Job Creation:** Social businesses often provide employment opportunities, particularly in areas or among communities facing economic challenges. This job creation contributes to local economic development.
4. **Income Generation:** Social businesses empower marginalized and vulnerable populations by providing them with opportunities to earn income. This can lead to poverty reduction and improved living standards.
5. **Innovative Business Models:** Social businesses can pioneer new business models that combine profit-making with social impact. These innovations can serve as examples for other companies seeking to create positive change.
6. **Impact Measurement and Transparency:** Social businesses emphasize measuring and reporting their social and environmental impact. They contribute to accountability and transparency in the social sector.
7. **Educational and Awareness Initiatives:** Many social businesses engage in educational and awareness campaigns to inform the public about pressing social and environmental issues, contributing to a more informed and compassionate society.
8. **Community Engagement:** Social businesses often collaborate closely with the communities they serve. This engagement fosters a sense of ownership and responsibility among community members, further contributing to social development.
9. **Partnerships and Collaboration:** Social businesses frequently partner with governments, NGOs, and other stakeholders to amplify their impact. These collaborations contribute to a coordinated approach to tackling societal challenges.
10. **Inspiration and Advocacy:** Successful social businesses can inspire other companies to adopt similar models or incorporate social responsibility into their operations. They also advocate for policies and practices that promote social entrepreneurship and sustainability.

The contributions of social businesses are particularly relevant in the context of the "double bottom line," where they aim to achieve both financial sustainability and positive social or environmental impact. These contributions help create a more inclusive, sustainable, and socially responsible business ecosystem.

This Kelulutpreneur Incubator project practice the Social Business, and the collaboration university and company or agency Yayasan TM as sponsorship of the grants contribute to the community increasing the household income.

Entrepreneurship Program

Entrepreneurship program is a program aimed at cultivating the skills, knowledge, and attitudes necessary to become a successful entrepreneur. Entrepreneurship programs can be

implemented in various forms, such as courses, workshops, seminars, mentorship, and others. Entrepreneurship programs can also be tailored to various target groups, including students, graduates, employees, women, rural communities, and others. A successful entrepreneur requires various skills, knowledge, and attitudes, all of which can be developed through an entrepreneurial program. The implementation of entrepreneurship programmes can take many different forms, including classes, workshops, seminars, mentoring, and others. Additionally, entrepreneurship programmes can be made specifically for certain target demographics, such as students, recent graduates, workers, women, and rural areas.

Entrepreneurship, according to Hashim, Othman, and Buang (2009), is the act of producing something new and valuable while taking risks and being uncertain. Based on a case study of the career paths of six SME entrepreneurs from different industries in the Malaysian environment, this essay seeks to explore the idea of entrepreneurial preparedness. The five essential components of entrepreneurial preparedness are attitude, knowledge, skills, motivation, and personality. In-depth interviews are used in this article's qualitative methodology as a data collection tool. According to this article, there are two key aspects that make up entrepreneurial readiness: willpower and ability. Willpower components are broken down into three categories: learning preparedness, spiritual fortitude, and attitude readiness. While the preparedness of entrepreneurial thinking, vocational, and knowledge components fall within talents. To prepare a person for an entrepreneurial career, it is suggested in this article that the taxonomy of entrepreneurial readiness derived from these numerous aspects can be utilised to pinpoint the element of readiness that is inherent in that person.

Entrepreneurship, as described by Razuan, Zaimah, and Sarmila (2019), is the capacity and willingness to create, manage, and operate a firm in the face of financial risk and operational uncertainty. An entrepreneur's success is heavily dependent on their entrepreneurial qualities. Based on personality traits, entrepreneurial orientation, and entrepreneur development programmes, they measure the quality of entrepreneurship. In this piece, the quality of entrepreneurship practised by small and medium-sized business owners registered with the Southeast Johor Development Authority is examined in relation to personality traits, orientation, and entrepreneur development programmes (KEJORA). The 101 respondents to this article's survey were used to gather data using both quantitative and survey methodologies. According to this study, the quality of entrepreneurship is modest, with the orientation component playing the largest role in defining this quality. This article also makes some recommendations for enhancing entrepreneur development programmes and encouraging young people to adopt an entrepreneurial mindset.

The definition of entrepreneurship, according to Johnes et al. (2018), is to implement novel combinations in the organisation of enterprises, such as new products or services, new raw material sources, new manufacturing techniques, new markets, and new organisational structures. The success of traditional candy business owners in the Sabah district of Papar is discussed in this article. Capital, location, skills, marketing, innovation, family support, and government backing are a few of the variables influencing the success of traditional confectionery entrepreneurs in the district of Papar, Sabah. The writers of this study performed a survey of 100 traditional confectionery business owners participating in the Southeast Johor

Development Authority's Entrepreneur Development Program (PPU) (KEJORA). The goal of this study is to pinpoint the elements—including funding, location, expertise, marketing, innovation, family support, and government assistance—that contribute to the prosperity of traditional candy business owners. The findings demonstrated a substantial correlation between these variables and traditional confectionery business owners' success. Entrepreneurs in the conventional confectionery industry were found to be most successful when capital, location, and marketing variables were considered. This essay also offers some implications and recommendations for enhancing the productivity of Sabah's traditional confectionery business owners.

According to Konting (2002), Malaysian entrepreneurial education has a favorable effect on students' aspirations to launch their own businesses. The number of entrepreneurial aspirations among students enrolled in entrepreneurial courses at high schools and colleges is examined in this research. This article also looks at how integrated living skills, which includes an entrepreneurial component, is taught in secondary schools in Malaysia and how it affects students' career choices, personality traits, potential, attitudes, and aspirations. 1336 pupils from 12 Selangor secondary schools were chosen for this article using a multilayer random sample technique. To gather information for this paper, surveys and tests of entrepreneurial aptitude were used. Descriptive and inferential statistics were then used to evaluate the data. According to this article, there are still few students who aspire to start their own business, and there are big discrepancies in the academic performance, personal traits, and entrepreneurial ability of those who do. The ramifications of research to promote an entrepreneurial culture among high school students are also covered in this article.

The success of young entrepreneurs in Small and Medium Industries (SME) enterprises in Malaysia is attributed to seven elements, including attitude, capital, marketing, innovation, environment, skills, and collaboration, according to Yusof and Tahir (2021). The success of young entrepreneurs participating in the Rural Business Challenge Program, run by the Southeast Johor Development Authority, is examined in this article in connection with these factors (KEJORA). This study employs quantitative techniques and information from 138 Local Champions who participated in the Rural Business Challenge Program. Seven dimensions of success driving variables are identified in this article: attitude, interests, self-awareness, capital, effective marketing, innovative and creative thinking, business environment, skills and knowledge, organisational management, and external collaboration. According to this study, the key elements influencing the success of young SME entrepreneurs in Malaysia are attitude, interest, and self-awareness. This article also makes some recommendations for enhancing entrepreneur development programmes and encouraging young people to adopt an entrepreneurial mindset.

Among young agropreneurs in Malaysia, motivation, attitude, skills, and social support are contributing elements to entrepreneurial success, according to Binti Johari, Mohamad, and Ishak (2020). This article is a literature review that seeks to pinpoint the individual, business, and environmental factors—among others—that affect the entrepreneurial performance of young agropreneurs in Malaysia. This article also establishes a conceptual framework

connecting those elements to entrepreneurial success and suggests suitable research methodologies for evaluating the study's main hypothesis.

According to Zaini et al. (2020), asnaf IPT students' entrepreneurial intention is significantly influenced by demographic parameters such as gender, age, education level, work experience, and marital status. The essay discusses the value of entrepreneurial education for Malaysia's impoverished and needy asnaf families. This essay seeks to pinpoint the demographic elements that asnaf students in higher education institutions' entrepreneurial purpose are influenced by (IPT). 369 asnaf students at Universiti Utara Malaysia were surveyed online for the purpose of gathering information for the paper. The results, with a mean of 4.67 and a standard deviation of 1.46, demonstrate that asnaf students have a high intention to become entrepreneurs. This suggests that the asnaf students have a markedly favourable propensity towards entrepreneurship. The article also identifies gender, educational background, business experience, firm ownership, and career aspirations as demographic characteristics that influence entrepreneurial intention. The article's conclusion is that the asnaf students have the capacity to start profitable businesses and advance the nation's economy.

Data Envelopment Analysis was used to determine the economic effectiveness of stingless bee farms in Peninsular Malaysia, according to Soh, Samsuddin, and Ismail (2021). This article uses Data Envelopment Analysis (DEA) Cost under the premise of Constant Returns to Scale to investigate the cost efficiency (CE), technical efficiency (TE), and allocative efficiency (AE) of commercial stingless bee farms in the East and North Coast of Peninsular Malaysia (CRS). The article also lists the elements that influence the productivity of these farms, including visits by extension officials and the education of the farmers. The article concludes that Peninsular Malaysia's commercial production of stingless bee honey has poor CE, TE, and AE, and that the factors contributing to this low efficiency are of concern. The *Pertanika Journal To maximise productivity, stingless bee farming has to further increase its economic efficiency.*

Soh, Samsuddin, Ismail, and Habibullah (2021) claim that a stochastic frontier analysis (SFA) model was used to assess the technical efficacy of commercial stingless bee honey production in Peninsular Malaysia. Data Envelopment Analysis is used in this research to investigate the technical effectiveness of commercial stingless beekeeping farms in Peninsular Malaysia (DEA). The article also lists the elements that influence the productivity of these farms, including visits by extension officials and the education of the farmers. The article's conclusion states that although Peninsular Malaysia's commercial production of stingless bee honey uses high levels of technical efficiency, efficiency and inefficiency issues need to be addressed to raise the technical efficiency's value.

Mustafa, Yaacob, and Sulaiman (2018) contend that the stingless bee, a native species of Malaysia, offers chances for the honey sector to be reimaged. The writers talked about the difficulties and opportunities of growing this industry and the potential advantages of stingless bee honey for health, economy, and the environment. The use of stingless bee honey as a source of revenue, medicine, and pollination in Malaysia is covered in this article. The reinventing honey quality (RHQ) project, which attempts to increase the quantity and quality of stingless bee honey production, is also introduced in the article. The antibacterial, anticarcinogen, and

antioxidant characteristics of stingless bee honey are highlighted in the study. A few research findings on the effects of stingless bee honey on memory, learning, and obesity in animal models are also covered in the article.

According to Yussof (2022), the community entrepreneurship programme implemented by the Department of Islamic Development Malaysia (JAKIM) in Betong, Sarawak, has had a positive impact on the micro-entrepreneurs involved. This article examines the impact of community entrepreneurship programmes implemented by Betong Community College (KKB) together with 15 micro-entrepreneurs around Betong, Sarawak. This article assesses how much the program has successfully provided exposure on digital marketing, packaging and labeling and skills in frozen food processing. This article uses a quantitative method integrated in a questionnaire distributed to the respondent. This article found that the community entrepreneurship program has had a beneficial effect on the respondents and has managed to increase the monthly income of the respondents. This article also discusses the implications of the study to expand community entrepreneurship programs to more micro-entrepreneurs across the country.

According to Kunasekaran, Fuza, Engku Hassan, and Ramachandran (2018), the factors that influence the local community's perception of kelulut honey as an agrotourism product in Kampung Sungai Buah, Dengkil, Selangor, are awareness, knowledge, attitude, motivation, satisfaction, and economic impact. This article is a study that examines the factors that influence the perception of the local community towards kelulut honey as an agrotourism product in Kampung Sungai Buah, Dengkil, Selangor. This article uses the questionnaire method to collect data from respondents involved in beekeeping activities. This article uses factor analysis, double regression analysis, and correlation analysis to analyze data. This article found that there are six main factors that influence the perception of the local community, namely awareness, knowledge, attitude, motivation, satisfaction, and economic impact. This article also found a positive and significant relationship between these factors and perceptions of the local community. This article proposes several implications and recommendations to improve the perception of the local community towards kelulut honey as an agrotourism product that has the potential to increase the income and well-being of the community.

Khair et al. (2019) studied attitudes towards PPIP and changes to the socio-economic of Orang Asli participants in Perak using quantitative research methods. This article aims to examine attitudes towards the Income Enhancement Programme (PPIP) and changes to the socioeconomics of Orang Asli participants in Perak, Malaysia. The authors used quantitative research methods involving 110 Orang Asli participants involved in PPIP. This article shows that the majority of Orang Asli participants are involved in agriculture and animal husbandry as the main source of income, while collecting forest produce and tapping rubber as part-time jobs. Among the PPIP projects carried out in Perak are the cultivation of vegetables, musk lime and bananas, as well as cattle farming, tilapia fish and kelulut. This article also found that there was an increase in income among Orang Asli participants even though the majority of them still earn less than RM1000 per month. In addition, this article reveals that the highest impact of PPIP is empowerment in decision-making, followed by lifestyle changes, economic aspects

and ownership. Overall, the level of impact was high in empowerment and lifestyle changes, while moderate in other aspects discussed.

Using meta-analysis techniques, Daud and Nordin (2023) investigated the difficulties and issues associated with integrating entrepreneurship education within the TVET (Technical and Vocational Education Training) Skills Training Programme. The main components of entrepreneurship education's integration into TVET's skill-training programmes in Malaysia are examined in this article. This essay also looks at the difficulties encountered by programme implementers of entrepreneurship education. In this paper, 780 publications about entrepreneurial education and TVET that were found using the search engines Scopus and Google Scholar are studied using the meta-analysis approach. According to this article, there are four primary factors that need to be considered when putting entrepreneurial education into practise: curriculum, competency, teaching and learning procedures, as well as support for entrepreneurial careers. This article also makes some recommendations for enhancing entrepreneur development programmes and encouraging young people to adopt an entrepreneurial mindset.

The production of kelulut honey, which is in great demand in the market, is reportedly being affected by a number of problems and challenges that the beekeeping industry is dealing with, according to Rosmiza et al. (2020). The problems and difficulties faced by beekeeping business owners in Kuala Lipis, Pahang, are examined in this article. For this article's data collection from 32 beekeeping business owners, quantitative and qualitative methodologies were used. The key problems and obstacles in the sector, according to this article, are physical ailments, human economic activities, seasonal conditions, and the amount of entrepreneurial knowledge. This article also makes some recommendations for enhancing entrepreneur development programmes and encouraging young people to adopt an entrepreneurial mindset.

Young entrepreneurs in Small and Medium Industries (SME) enterprises in Malaysia confront obstacles in the areas of capital, marketing, innovation, business environment, and organisational management, according to Yusof et al. (2020). The purpose of this essay is to investigate the difficulties young entrepreneurs in Malaysian Small and Medium Enterprises (SME) enterprises experience. 138 respondents who were successful young entrepreneurs in the SME sector were recruited by the authors using quantitative approaches. This article demonstrates that there are five key obstacles that new SME entrepreneurs must overcome to succeed: funding, marketing, innovation, the environment for business, and organisational management. This article also discovered a strong connection between these difficulties and the accomplishments of young SME entrepreneurs. This article also suggests a number of actions that society and the government may take to address these issues and boost the potential of young SME entrepreneurs.

Kelulut Farming

Kelulut bee is one of the stingless bee species in Malaysia, which is not dangerous to human. The process of breeding and cultivating stingless bee colonies, specifically species from the Meliponini tribe, is referred to as "kelulut farming," sometimes known as "stingless bee farming" or "meliponiculture." Stingless bees are tiny and do not have stingers, in contrast to honeybees, which do and are often raised to produce honey.

Preparation before Starting Kelulut Farm

To begin with a farm breeder should get as much as possible information regarding Kelulut and what is needed to set up a farm. Doing something without proper knowledge will result to loss of money, time and it can be stressful. It is advisable if the kelulut breeder can visit an established beekeeper to find out more or there are also a lot of information online regarding bees' keeping. By finding more knowledge before start, common mistakes beginner beekeepers make can be avoided. Secondly, it is necessary to find the best spot to put the hive/ log. Put the hive in a secluded spot where there is not too much movement as it can disturb the bees. The hive/log can also be placed under a lush tree to provide shade from the hot afternoon sun. Bees work only when it is warm enough, but if it is too hot, they also don't leave the hive because they must fan the inside to cool it down. A team from USM lead by Dr Zulkifli Mustafa has invented a hive with three layers which can act as an insulated for the hive. Most importantly, it is essential the place have an access of fresh water or clean water to survive. A strong colony will need at least one litre of water on warm day. Thirdly, the breeder can either buy or make a hive. They can start with no more than three hives. Once they have gained experience, they can get more hives. They should be very careful when buying hive online or from a not established seller because they might fall into a scam, or they might get a hive with a weak colony. It is important to make sure that the hive is not a used hives, as these may carry viruses or diseases from the previous colonies. Fourthly, It is important to prepare a set of protective suits which includes a long sleeves and pants, a hat with a veil that fastens to the top of the overall, thick gloves that fit tightly around the arm, and boots that fit tightly around the ankles.

Types / species

Stingless bees, sometimes called stingless honeybees or meliponines, are a large group of bees i.e about 550 described species and different species of stingless bees are being identified every year. There are 3 types of bees in one colony namely the Queen bee who lives in the largest hexagon block in the beehive. Worker bee whose function is to collect nectar flowers, bring it to the beehive to store it, and make honey in the beehive. Another type is the dronebee or the male bee and their sole purpose is to mate with the queen, since a queen only needs to mate once, most of the drone won't even get the chance to fulfil their role. They don't have any specific role in the beehive: they don't work, don't make honey and can't sting. However, the worker bees keep them around, just in case a new queen needs mating.

Reasons Involve In Kelulut Farming

Among the reasons the kelulut breeder involve in kelulut farming because they find the current honeybee market too competitive. Kelulut bee honey on the other hand appears to be a more premium product on top of having a more unique taste. Another incentive is also in its medicinal value, because kelulut bee honey is richer in antioxidants compared to their honeybee counterparts' honey.

Benefit and Role of Kelulut

The role of kelulut farming in pollination is one of its main advantages. Numerous flowering plants depend on these bees to reproduce because they are superior pollinators. Fruit, vegetable and other crop yields and quality can be increased. Even though kelulut bees do not generate

as much honey as honeybees do, but they do create a special kind of honey called "kelulut honey" or "stingless bee honey." This honey is valued for its possible health benefits. Honey from kelulut bee can be used for the treatment of a variety of illness. The awareness of honey nutrition in our health makes it received high demands from the consumers.

Challenges and Advancement in Kelulut Framing

The biggest challenges face by the bee breeder are to find suitable terrain, sufficient and diverse forage, the provision of fresh water, poisoning of bees, natural enemies of bees, theft and vandalism by humans, climate change hazards like flooding and droughts.

Kelulut farming comes with its own set of challenges. These bees require specialized knowledge and care, as they have specific environmental and dietary needs. Maintaining proper hive conditions, protecting the colonies from predators, and managing diseases are all important aspects of kelulut farming.

A kelulut bee's body size in comparison to a honeybee. They can grow a colony of up to 10,000, equivalent to the smallest colony size for honeybees. Because of this, their yield is relatively lower than that of honeybees. And because of how low it is, operational costs are higher compared to farming honeybees as well, resulting in their higher retail price. Despite it being a blessing that kelulut bees can thrive in a tropical climate like ours, one of the downsides is that during rainy seasons, they're unable to collect nectar due to their smaller physique and foraging distance, resulting in even lower production.

Traditionally, beekeepers did the manual inspection to check the honey-filled pots by using the straw or needle. The high demand from the consumers and the greater size of Kelulut beehive make it impractical to check manually all the honeypots which are time-consuming. The hygiene of the collected honey is also important to produce a good quality of honey. Hence, an automated honey-filled pots detection system is proposed to overcome these limitations. The proposed system will reduce the time consuming and less prone to error of the wrong estimation of honey-filled pots. MATLAB software is used to process the image of the Kelulut beehive which is challenging due to the overlapped honeypots in the image. Using the proposed algorithm, it can detect whether the pots filled with honey or not by using image processing techniques and it will analyse the image which represents the percentage amount of honey in the beehives.

Another innovation introduced by Metathecne Enterprise called EMAS. It is a product for a stingless bee management system application that has been developed to assist stingless-bee farmers, in recording information on the important aspects of stingless-bee keeping such as hive health, security, and hive produce on smart devices. There will be a certain amount to be paid by the bee breeder to subscribe to the system

Another innovation regarding beehive has been initiated by a team from USM lead by Dr Zulkifli Mustafa has invented a hive with three layers which can act as an insulated for the hive. It is to ensure that the inside of the hive will not be too hot which will disturb the bee's activity.

Methodology

The profiling procedure was thorough and took into account many aspects of the individuals' backgrounds and goals. This involved compiling sociodemographic information, investigating their business history, digging into their educational backgrounds, identifying their driving forces, and examining the difficulties they encountered as well as their goals.

The goal was to get a comprehensive grasp of the distinctive qualities and traits that identify these Kelulutpreneurs by delving deeply into these areas. This information forms the basis for the incubator's attempts to specifically design its programs and support services to fit their unique needs. By gaining a nuanced understanding of the unique characteristics and needs of these Kelulutpreneurs, the incubator can craft programs and support services with a precision that ensures they are not only effective but also highly relevant. This tailored approach enables the incubator to create initiatives that resonate with the Kelulutpreneurs on a personal and professional level.

This program targets the difficulties and obstacles that Kelulutpreneurs might face in their beekeeping ventures, such as finding resources for Kelulut farming, marketing honey and associated products, or understanding the nuances of beekeeping legislation. The incubator also offers specialized educational materials and training to further develop their entrepreneurial talents. Additionally, through personalizing support services, the incubator offers mentoring and advice that are in line with the unique aspirations and objectives of each Kelulutpreneur. This not only gives children the ability to overcome challenges, but it also cultivates a sense of ownership and dedication to their beekeeping endeavors. The result is a more lively and prosperous community of entrepreneurs by allowing the Kelulutpreneurs to maximize their potential, capitalize on their talents, and solve their specific needs.

A mixed-methods approach was used to ensure the richness and depth of the data that was gathered. In-depth interviews and open-ended surveys were used to collect qualitative data, which gave complex insights into the participants' individual experiences and viewpoints. On the other hand, quantitative information gleaned from well-structured questionnaires made it easier to spot important trends and patterns in the dataset. With the help of this dual strategy, the experiences of the Kelulutpreneurs could be fully explored, and a solid foundation was created for the development of efficient and focused support efforts inside the incubator programme. In this study, the decision to use a mixed-methods approach was vital to ensuring that the data collected provided both depth and breadth of insights. The researchers were able to access the rich tapestry of the Kelulutpreneurs' experiences and unique viewpoints by combining in-depth interviews and open-ended surveys. Through the sharing of their own experiences, obstacles, and goals, participants in this qualitative study were able to construct a vivid and thorough picture of their entrepreneurial journeys.

On the quantitative side, the well-structured questionnaires played a crucial role in complementing the qualitative data. They provided a structured framework for collecting standardized information from a larger sample of participants. This approach facilitated the identification of significant trends, patterns, and correlations within the dataset. It allowed for the quantification of key aspects of the Kelulutpreneurs' experiences, making it easier to pinpoint areas of strength and areas that required more targeted support.

By adopting this dual strategy, the research team achieved a holistic understanding of the Kelulutpreneurs and their unique ecosystem. The qualitative data added depth and context to the quantitative findings, while the quantitative data provided statistical rigor and highlighted

overarching trends. This comprehensive approach not only enriched the study but also laid a solid foundation for the development of efficient and focused support initiatives within the incubator program, ultimately benefiting the Kelulutpreneur community and their beekeeping enterprises.

Findings

Table 1: Analysis of Demographic Profile of Participants of Kelulutpreneur

	Frequency	Percentage
Gender		
Male	20	90.91%
Woman	2	9.09 %
Race		
Malay	22	95.65%
Chinese	1	4.35%
Indian	0	0 %
Status		
Single	3	13.63%
Married	18	81.81%
Divorce	1	4.54%
Age		
24-34	7	31.8%
24-44	3	13.6%
44-54	4	18.18%
54-64	6	27.3%
64-74	1	4.55%
74-84	1	4.55%
Numbers of Dependants (Children)		
0	4	22.7%
1 – 5	15	68.1%
5 - 10	2	9.09 %
Numbers of Dependants (Households)		
0	3	13.64%
1-5	16	72.7%
5-10	3	13.63%
Range of Household Income (RM)		
0-1000	8	36.4%
1001-1999	6	27.3%
2000-3000	8	36.4%
Range of Income of participant (RM)		
0-1000	8	36.31%
1001-1999	12	54.54%
2000-3000	2	9.09%

Type of Job		
Pensioners	6	27.27%
Private Sectors	6	27.27%
Government Sectors	0	0.00%
Housewife	2	9.09%
Others	8	36.36%
Have received training in the field of Kelulut Industry		
Yes	18	81.81%
No	4	18.18%

Table 1: Analysis provides insights into the demographics and characteristics of the survey of participants Kelulutpreneur Programme, which can be valuable for understanding the composition of the survey sample and tailoring future studies or initiatives accordingly. Most of the respondents are male (90.91%), while a smaller percentage are female (9.09%). Most respondents identify as Malay (95.65%), with a very small percentage identifying as Chinese (4.35%), and none identifying as Indian.

Most respondents are married (81.81%), followed by single individuals (13.63%), and a smaller percentage are divorced (4.54%). The majority of respondents fall in the 24-64 age range, with the highest percentage in the 54-64 age group. Most respondents have 1-5 dependents (68.1%), while a smaller percentage have no dependents (22.7%), and a very small percentage have 5-10 dependents (9.09%).

Most respondents have 1-5 dependents in their households (72.7%), while a smaller percentage have no dependents (13.64%), and a few have 5-10 dependents (13.63%). The distribution of household income is fairly balanced across the provided income ranges, with 36.4% falling in both the 0-1000 RM and 2000-3000 RM ranges, and 27.3% falling in the 1001-1999 RM range. The income of participants is primarily in the 1001-1999 RM range (54.54%), followed by the 0-1000 RM range (36.31%), and a smaller percentage in the 2000-3000 RM range (9.09%). The largest group of respondents have "Other" types of jobs (36.36%), followed by pensioners (27.27%) and individuals in private sector jobs (27.27%). There are no respondents from the government sector, and a small percentage are housewives (9.09%). The majority of respondents have received training in the field of Kelulut Industry (81.81%), while a smaller percentage have not received such training (18.18%).

Discussion and Conclusion

In conclusion, the participant profiling analysis conducted for the Kelulutpreneurs Incubator under the Community Engagement Project of UiTM Cawangan Melaka and Yayasan TM has provided valuable insights into the characteristics, needs, and aspirations of the Kelulutpreneurs in the program. Through a meticulous mixed-methods approach, encompassing qualitative interviews and open-ended surveys for rich contextual understanding, as well as quantitative questionnaires for identifying trends and patterns, a comprehensive picture of the Kelulutpreneur community has emerged.

This in-depth understanding serves as the cornerstone for the incubator's ability to tailor its programs and support services effectively. By aligning initiatives with the unique requirements of these budding entrepreneurs, the incubator can provide targeted guidance, resources, and mentorship, fostering an environment conducive to the success and growth of Kelulut beekeeping ventures.

The participant profiling analysis not only equips the incubator with the tools needed to address specific challenges faced by the Kelulutpreneurs but also empowers these individuals to pursue their aspirations in the field of beekeeping. As a result, this collaborative effort between UiTM Cawangan Melaka and Yayasan TM holds the promise of creating a thriving community of Kelulutpreneurs, furthering the goals of sustainable beekeeping and community development. This initiative exemplifies the positive impact that can be achieved through dedicated community engagement projects.

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