

Sustainable Entrepreneurship, Technology Usage, and Marketing Strategies in Malaysia's Cuniculture Industry toward Food Security

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Abstract

Food connoisseurs have consumed rabbit meat, broilers, or roasters for centuries. China, North Korea, Italy, Russia, and Ukraine are the countries with the highest rabbit meat production in the cuniculture industry. For Malaysia, the cuniculture industry has been obscure. With the current food security situation, roasters should be prominently showcased as the alternative to chicken meat. Thus, the study investigates entrepreneurship, technology usage, and marketing strategies for sustainable rabbit meat production in Malaysia. The qualitative methodology design utilized interviews for primary data collection among rabbit farmers in Perak and Selangor, Malaysia. The findings evidenced a lack of entrepreneurial skills and marketing with limited technology usage among rural rabbit farmers. The implications from the findings significantly showed that the rabbit breeders or farmers require more support from the relevant agencies in marketing and promoting their products. Malaysia's rabbit meat has the potential to penetrate the international 'halal' market. Hence, it is recommended that further studies be undertaken to research other facets of Malaysia's rabbit farming and roaster production to create awareness of the nutritional values of rabbit meat to the public and for sustainable socio-economic wellbeing in the rural ecosystem.

Keywords: Food Security, Cuniculture Industry, Sustainable Entrepreneurship

Introduction

The coronavirus post-pandemic phase has significantly impacted the world's food security strategies. Prior to the pandemic, almost 900 million of the global population lacked access to food. The two-year lockdowns degraded the agriculture industry so much so that new food sources with less cost have to be sought within the short term to feed the vulnerable population (Luiselli, 2020). Malaysia as a developing country was not spared from the food security issues. The current problem with the shortage of white meat, in particular from the poultry sector has required Malaysia to find alternative food solution. This came in the form of rabbit meat or broilers. However, the cuniculture industry in Malaysia has taken a backseat interest as a new source of food. Rabbits are perceived as lovable pets for a significant percentage of the population thus the time has come for changes in the menu. Nonetheless, statistics and reports have shown that there are many rabbit breeders in the country, yet the market for broilers have not been prominent. Therefore, the objectives of the study were to assess the entrepreneurship, technology usage and marketing issues of Malaysia's cuniculture industry, specifically for the states of Perak and Selangor. Sustaining the domestic rabbit meat market would be the expected rationale for the project.

Literature Review

Agriculture has become the foremost strategy for the government for food supplies. Feeding the vulnerable and disadvantage societies have become the priority for world peace. As commented by Luiselli (2020), the key to food security is continuous and systematic access to food that is sufficient in quantity and quality. Hence, in advocating the research objectives, the literature review will cover the three variables on the cuniculture entrepreneurship, the marketing issues for rabbit meat and the usage of technology in farming. That said, the literature will also revolve around the nutrition value of rabbit meat. The literature review section will also accommodate legal and policy matters on animal farming.

Nutrition value of rabbit meat or roasters

In term of nutritional quality, recent research has shown that the rabbit meat has higher values compared to other meat species. Physically, the rabbit meat is characterized with darker colour, and firmer texture as compared to chicken meat (Lee et al., 2022). The protein content of rabbit meat is comparable as chicken meat (20-21 g/100 g portion of meat) but less than beef (26 g/100g portion of meat) and pork (27 g/100g portion of meat) (Nistor et al., 2013). Information on the fat content varies depending on the carcass portion but rabbit meat (59 mg) has lower amount of cholesterol than pork (61 mg), beef (70 mg) and chicken (81 mg) (Para et al., 2015, Dalle Zotte et al., 2011 & Dalle Zotte, 2004). The fatty acid profile is composed with high polyunsaturated fatty acids that account for 27 – 33% of total fatty acids. This value is greater than other meat species, including poultry (Dalle Zotte, 2014). In further, rabbit meat and ruminants are the richest source of vitamin B₁₂ and consumption of 100 g of rabbit meat is sufficient for recommended daily intake of vitamin B₁₂ (Dalle Zotte, 2011). On this nutritional basis, the rabbit industry has a promising role to provide alternative meat source in placed of poultry and ruminant animals.

Protection of the welfare of animal in Malaysia

Agriculture includes animal farming. In Malaysia, there are several statutes relating to animals. These include, at the federal level, the Animals Act 1953 (Malaysia) and the Wildlife Conservation Act 2010 (Malaysia), with the latter enacted to replace the Protection of Wildlife

Act 1972 (Malaysia). The Malaysian Animal Welfare Act 2015 (AWA 2015), along with the Animal (Amendment) Act 2013 (AA 2013), are the principal legislations that govern the care and use of animals in Malaysia. The Animal (Amendment) Act 2013 traces its origins to the Act, which was enacted in 1953 (Gettayacamin et al., 2014 & Department of Veterinary Services Malaysia, 2006).

There are additional state-level animal protection regulations, most of which apply to farm animals. Cattle Registration Enactment 1996 (Perlis), Control of Pig Farming Enactment 1992 (Perak)16, and Poultry Farming Enactment 2005 are three examples (Kelantan). The Animal's Act is intended to govern some specific animals held in captivity or domesticated and under human control. This Act contains provisions to (i) manage and prevent animal disease, (ii) limit animal transportation, (iii) control animal slaughter, (iv) avoid needless cruelty to animals, and (v) cover broad issues relating to the general welfare and conservation of animals. For this study, the animal reference encompasses the cuniculture industry.

Environmental law and policies in the farming industry

Laws are a tool for ensuring that rabbit farming pollution is managed well. Even now, many problems still need specific laws and rules to be made. Federal and state veterinary laws cover livestock management, disease control, slaughterhouses, animal exports, animal-based food products, and the ethics of veterinary officers (Department of Veterinary Services Malaysia) (Sakawi et al., 2015). Based on the laws already in place, there are no specific rules about dealing with rabbit farming pollution. Because of this, there are always problems with enforcement and controlling pollution. No effective actions could be taken against animal farming owners whose operations significantly impacted the surrounding environment.

Malaysia's government recently enacted national policies in support of sustainable agriculture techniques. The Shared Prosperity Vision 2023 or *Wawasan Kemakmuran Bersama 2030* (WKB2030) is a pledge to make Malaysia a nation that achieves sustainable growth and equitable wealth distribution across income categories, ethnicities, regions, and supply chains (Economic Planning Unit, 2022). Innovative and high-value farming is one of the Key Economic Growth Activities (KEGA) proposed in WKB. It attempts to incorporate ecologically friendly and cutting-edge technologies into farming activities, including drones and the Internet of Things. This policy also promotes the circular economy concept to reduce waste creation. On October 20, 2021, the National Agrofood Policy 2.0 (Dasar Agromakanan Negara 2.0; DAN2.0) was launched (Ministry of Agriculture and Food Security Malaysia, 2022). It is a policy built on three pillars: the economy, society, and the environment. One of the goals is to promote sustainable food consumption and production. This strategy would allow Malaysia's agro-food sector to stay competitive, contributing to national economic growth while maintaining environmental sustainability. Both initiatives can catalyse the national livestock industry's transition to sustainability. As a result, this industry may expand to meet demand and self-sufficiency ratio (SSR) without negatively impacting the environment.

Agriculture Entrepreneurship and Technology Usage

As previously noted, agriculture is the key to transform the food security issues to food sovereignty for all countries of the world. Agricultural entrepreneurship is coined in the 18th century by French physiocrats has today assumed the level of cash crops production (Anand Singh et al., 1994). With the increased population, the pandemic has affected the global economy, thus increasing the poverty level for the less privileged communities. In the

endemic phase, the Malaysian government too scrambled to ensure that the population is well cared for with proper daily intake of food.

The focus on agriculture entrepreneurship has been more pronounced when there was a scarcity in household cooking items such as rice, cooking oil and poultry. The recent furor with chicken price hikes and shortage aggravated the country's food security issues (Low et al., 2022). Back to the original discussion, agriculture entrepreneurship or "agropreneurship" in the Information Era is infused with technology to assist with maximized production within a short period of time (Lans et al., 2020). New food sources using technology as the innovative enabler has changed dramatically because of economic liberalization, a reduced protection of agriculture markets and, a fast changing, more critical society (ibid). Adapting to the market and technology changes by aligning to consumers' food fetishes (for example, organic/local food), more strict environmental regulations, food safety and product quality, biotechnology, value chain integration, sustainability, etcetera) have made the agriculture industry flourish but sustaining the market has been a pain. Nonetheless, the future for agriculture entrepreneurship is bright and sustainable to feed the population.

Marketing Issues in the Cuniculture Sector

Although chicken is the most popular white meat in Malaysia, the high price require consumers to look for alternative white meat. The closest source is rabbit meat or broilers (aka roasters). Rabbit meat can a popular source of food if the correct marketing strategy is put in place. For now, marketing the broilers for domestic consumption has become a major problem. The scenario is similar in Hungary as noted by Bodnar and Skobrák (2014), in Algeria as evidenced by Sanah, et al (2020), in Kenya from Mailu et al (2012), and from Brazil (Magalhães et al., 2022) to cite a few. Championing the consumption of rabbit meat as an alternative to chicken must be regularly promoted through collaborative efforts by both the farmer or breeder and the relevant agencies.

Methodology

The objectives of the study were to assess the entrepreneurship, technology usage and marketing issues of Malaysia's cuniculture industry. A qualitative research design was deemed appropriate in undertaking a phenomenological study which where the phenomena has been identified but the focus was on the subjective experiences and understanding of the structure of those lived experiences (Raco et al., 2014, Cope et al., 2005 & Abebrese, 2014). To shed more understanding to the issues, interviews were used to gather primary data from respondents identified through purposive sampling technique. The respondents were the rabbit breeders or farmers in Perak, Malaysia. Six respondents turned up for the focus interview sessions conducted by five research members. An unstructured interview protocol guideline was used to ensure standardization and keeping to the objectives of the project. The interviews were then transcribed, coded and thematically analysed using the NVivo software.

Findings

The general demography of the six respondents were five male and one female. All of them are rabbit farmers based at Cenderong Balai, Perak Tengah, Malaysia. Their age range is 25 to 45 years. The findings from the thematic analysis is shown in three forms, the word cloud (figure 1), the matrix coding query (figure 2) and, the cases relationship map (figure 3).



Figure 1. Analysis of word cloud from interview transcripts

The word cloud in Figure 1, the interview transcripts produced 1000 most frequent word displays. Seven of the most common occurrences were rabbit, meat, people, sell, breeding, farming and want. The second layer had 14 repeated words which were cooperative, government, 2017, time, get, one, point, product, just, place, food, Perak, various and started. The rest of the words in the cloud were repeated used but did not appear as regularly as the first two layers.

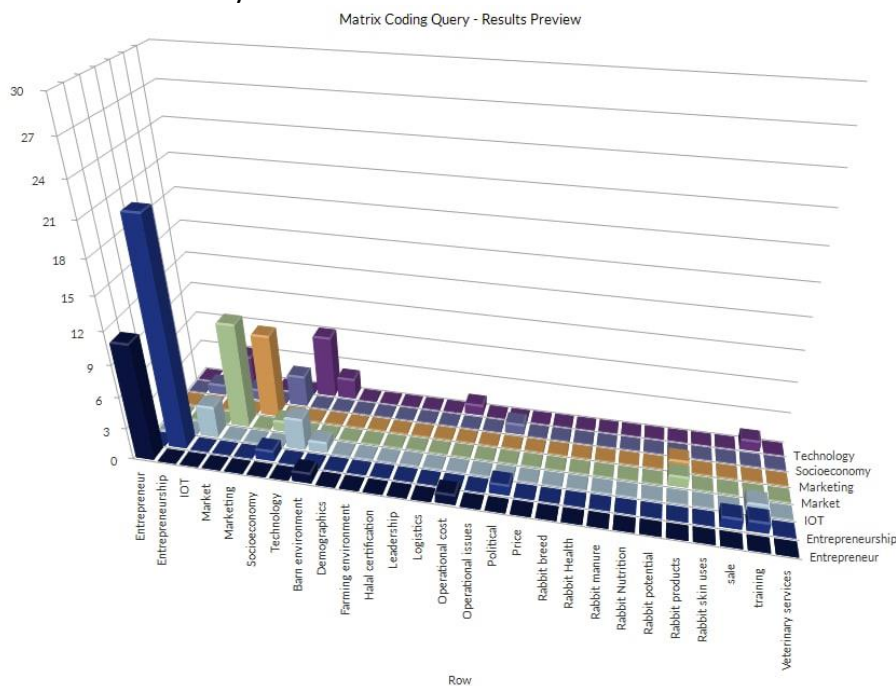


Figure 2. Results of the Matrix Coding Query for codes with cases

Figure 2 reads the crosstabulation between the codes or nodes and the cases. These variables cross and indicated the themes that are ranked accordingly. The highest occurrence is entrepreneurship followed by entrepreneur, market, marketing, technology, IOT, barn environment and so on. The ranked themes are indicative of evidential support for the research objectives.

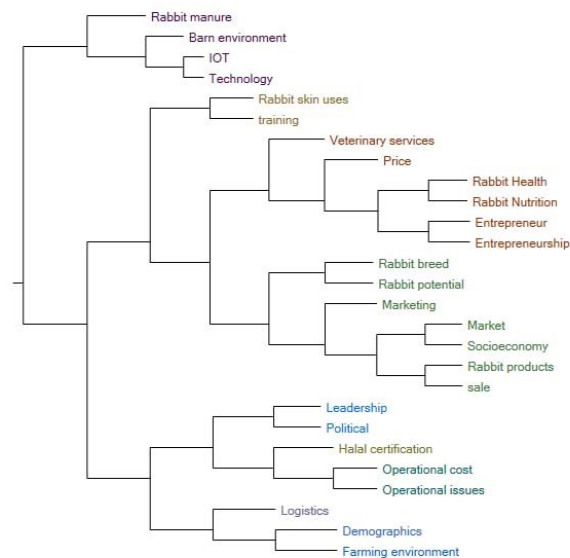


Figure 3. Cases tree analysis of rabbit meat marketing issues

In Figure 3, the cases are listed in hierarchical relationship to show the repeated words uttered by the six respondents. Rabbit manure is listed on top as the discussed on waste management were emphasized by the respondents. Rabbit manure is indicative of recycling and reusing rabbit poo as fertilizer for the garden, which also generates a side income for the rabbit farmers.

Discussion and Conclusion

The three illustrations from the findings revealed the in-depth responses from the six respondents in relation to assessing the entrepreneurship, technology usage and marketing issues of Malaysia's cuniculture industry. As evidenced from all the three thematic outcomes, the codes supported the three main issues on agricultural entrepreneurship, technology usage and marketing issues. The three variables require further analysis and empirical evidence and a survey from relevant stakeholders is recommended. The entrepreneurial skills are lacking among the breeders and reiterations for skilling in new methods and the introduction of agricultural technologies such as the Internet of Things (IoT) to assist with the cuniculture production have been consistent. Getting certified by the relevant authorities have to be assisted by the respective agencies and these calls for assistance have been a long time coming.

To conclude, the marketing rabbit meat for the domestic market is a major issue in the cuniculture industry for Perak Tengah. Although agricultural entrepreneurship has been attempted, sustaining the profitable endeavour require support and interferences from the community leaders and relevant agricultural agencies from both the state and federal governments. The rabbit breeders are part of the social network in Cenderong Balai, Perak where communication too plays an important role in ensuring collaborative efforts are undertaken for socio economic growth, continuity in the food chain and sustaining the livelihood of the rural areas.

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