

Technopreneurship Based Product Innovation: a Case Study on Small Entrepreneur

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Abstract

Small businesses experience problems in creating product innovations in order to meet consumer expectations. This study aims to determine the role of technology and SME resources in creating food product innovation. In addition, the purpose of this study also describes the role of stakeholders in assisting small businesses in creating innovative products and product marketing. The study was conducted on a small company that produces processed salak food in Sleman, Yogyakarta. The analysis technique uses qualitative analysis. Data were collected from SMEs, local governments, and industry associations by means of observation, interviews, and focus group discussions. The study results show that technical assistance from higher education can be applied by SMEs in creating various kinds of innovative salak processed foods. In addition, economic feasibility studies have also been carried out so as to provide financial benefits for small entrepreneurs. The government as a stakeholder helps facilitate SMEs by providing promotions and product sales.

Keywords: Technopreneurship, innovation, stakeholders, small and medium entrepreneurs



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I. INTRODUCTION

For a long time, the Sleman district government has been promoting the cultivation of salak trees, especially on the slopes of Mount Merapi. Salak is a fruit that is characteristic of the Sleman Regency. SMEs have responded to the abundant production of salak harvest and the unstable price of salak by processing them into a variety of processed foods. Many SMEs are involved in producing processed salak food, but the products tend to be the same. Common problems faced by SMEs are lack of resources, limited production capabilities, and product innovation.

Technology is needed in creating product innovation so that the product is more acceptable to the market. Higher education is involved in providing production technology for SMEs. In addition, universities also implement research results for the advancement of SME. Several lecturers and students help SMEs through community service programs. Meanwhile, the local government is also involved in helping SMEs to introduce and market local specialty food products.

This study aims to determine the role of technopreneurship in creating product innovation. In the context of this research, technopreneurship is defined as a process of combining the entrepreneurial

spirit of SMEs with technology transferred from universities to SMEs. This research is also intended not only to find out the role of universities but also the role of the government, especially in helping product innovation for SMEs. The uniqueness of this research lies in the collaboration between SMEs and universities in developing salak processing technology so that it is able to create innovative salak processed foods. Previous research that addresses this issue is still limited, so this research contributes to SMEs and their stakeholders.

II. LITERATURE REVIEW

II.1. Technopreneurship

Technopreneurship is a creative action to overcome certain conditions based on technology (Baileti, 2012; Olatunji, 2015). Technopreneurship is creativity in overcoming problems that are being faced by a community or a company through technology and other resources. Technopreneurship develops when needs, new technology, and entrepreneurial elements become one in business (Ozgulbas et al., 2013). Technopreneurship combines several resources such as land, labor, and capital with technology to make decisions, compete and assume risks (Durse et al. 2013; Lumpkin & Dess, 2001). Technopreneurship is a combination of technology with an entrepreneurial spirit, such as the ability to read opportunities, creativity, proactivity, the courage to take risks, leadership, and other entrepreneurial spirits. Technopreneurship creates innovations in the form of new and more valuable things. Old products that are no longer relevant to market needs are replaced with new products that are more valuable (Roos & Roos, 1997). Penrose (1959) states technopreneurs combine resources and technology creatively to produce something according to market opportunities. Businesses need to develop original technology so as to produce new products or innovations to increase competitiveness (Olusegun et al., 2019). Innovation, exploiting opportunities, and commercialization will succeed in improving performance (Okorie et al., 2014).

II.2. Innovation

Innovation is an entrepreneur's specific tool in coping with business change (Drucker, 1985). Innovations can be in the form of ideas, practices, or objects that are considered new (Daugherty et al., 2011). Opportunities can be turned into new ideas, new processes, new services, or new products (Bentz, 1997). Entrepreneurs need to be open to new ideas (Hurley & Hult, 1998), accommodate new ideas, and develop into new products (Tsai & Yang, 2013). Khazanchi et al. (2007) stated that the benefits of innovation are a source of additional income, cost savings, or quality improvement. Innovation is useful in increasing the competitiveness of companies and expanding the range of company activities (Hult et al. 2004). Innovation is the key to success for companies to generate new ideas, competitive advantage, and company resilience (Zawawi, 2016).

Cooper (1998) states innovation occurs in a multidimensional concept. In general, innovation consists of two dimensions, namely technological innovation and administrative/managerial innovation (Yang, 2012). Technological innovation comes from the use of technology so that new opportunities are found and new products or services. Technological innovation results in new technologies, new products, and new services. Meanwhile, administrative innovation is the use of new governance that can be organizational strength, efficiency, and high performance. Administrative innovation produces new policies, new procedures, organizational forms of innovation, Encourage expansions, reward staff's creativity, and exploring the best methods to achieve corporate goals.

III. RESEARCH METHODOLOGY

This study uses a descriptive qualitative approach. The data source comes from a small entrepreneur that produces processed food made from salak fruit in Sleman, Yogyakarta. Information is also collected from stakeholders including universities and local governments. Higher education plays a role as a technology companion, while the government facilitates regulation and marketing. Data were collected for three months using observation, interviews, and focus group discussions. The triangulation process was carried out by confirming the answers of all informants and reaching an agreement on answers. The data is processed and analyzed according to the tendency of the answers of all informants to answer the study problems.

IV. FINDING AND DISCUSSION

IV.1. Transfer and Utilization of Technology

A small entrepreneur needs new technology in processing food made from salak. A small entrepreneur produces processed salak food based on previous experience and emulates other SMEs. Therefore, the processed food that is made is not unique compared to other SMEs. In addition, the market response to processed bark tends to decline because it is getting saturated. Consumers want new innovations that will appeal to them.

The college offers technology those results from lecturer research. Small entrepreneur welcomes offers from universities and is willing to implement new technology. The technology in question is the technology for processing food made from salak so that it can produce higher quality products at a more efficient cost. The process of transferring technology from universities to SMEs is carried out in the following steps:

1. Identify the needs of SMEs

The identification of the needs of SMEs is carried out before the application of technology. This is done so that the resulting technology can actually be applied and overcome the problems faced by SMEs. SMEs need technology that is simple, effective, efficient, and easy to maintain.

2. Technology preparation

The next stage is designing technology. Lecturers and students conduct research to design appropriate technology that can be applied to help SME.

3. Manufacture of production equipment

Production tools are a form of appropriate technology that will be operated on SMEs. Machinery manufacturing is carried out in the campus workshop and in collaboration with other parties. Before being applied, the machine is tested as needed and work instructions are made.

4. Training

Equipment operation training is carried out by the university to SME. This training is very important in order for the machine to be truly efficient. The training is carried out directly at the location of the SME with materials commonly used by SMEs for the production process. After the SME is deemed to have mastered the machine, the machine can then be used for the operation.

5. Assistance

The assistance aims to reduce failures during the use of production tools. Assistance is also directed at providing the necessary skills during the production process.

The entrepreneurial spirit that has been owned by SME is combined with the mastery of technology obtained from higher education, resulting in technopreneurship. The output of technopreneurship is creative ideas. Well-managed creative ideas can create new, innovative products. The forms of product innovation that have been produced by SMEs include:

1. Product quality

The quality of processed food products has improved, which is indicated by texture, shape, and taste.

The texture of the food is smoother with the composition of the ingredients that blend together to produce a more perfect product. Technology is also designed to produce a product according to the tastes of the producer so that the product becomes more attractive.

2. Production quantity

Technology allows SMEs to produce more processed food than before with a long duration. SME can receive more food orders and the service is faster.

3. Rudeness

The packaging is not only designed to protect product quality, but the packaging is also designed to increase consumer appeal. Product packaging tailored to the target market. Packaging for the millennial target market is different from packaging for generation X or generation Y consumers.

This is done so that the product immediately gets a positive response from the target market.

4. Cost Efficiency

Technology is designed to be simpler so that it requires less electrical power. In general, SMEs in rural areas use electricity between 450-1,300 watts, so tools that require more electricity are certainly not feasible.

IV.2. The Role of Stakeholders

Higher education is one of the stakeholders in the development of SMEs. Higher education plays a role as a supplier of technology and human resources to help SMEs overcome business problems. Higher education plays a role in research activities, community service, and appropriate technology. Local governments are very interested in the progress of SMEs. Government support is manifested in the form of regulations that provide opportunities for SMEs to develop. In addition, the government also provides marketing support by providing product exhibition space and creating a website to introduce SME products to potential consumers. The government holds managerial and technical training that can be attended by SMEs. A sales network has also been established by the government involving souvenir shops and tourist villages.

IV.3. SME performance

The goal of innovation is to increase the competitiveness of the company which is realized by increasing sales and profits. The profits of SMEs have implications for the prosperity of entrepreneurs and the surrounding community. The results of this study indicate that after SMEs apply technology and create new innovations, sales increase by about 40%. It is not easy to find the right number for this increase because SMEs still have weaknesses in financial reporting. Likewise, with profit, SMEs experience increased profits resulting from increased sales and production efficiency. The development of SMEs is predicted to continue to increase along with the use of online marketing.

V. CONCLUSION AND FURTHER RESEARCH

Entrepreneurship combined with technological capabilities creates technopreneurship. SME adopts technology from higher education and is used in creating creative ideas. Creative ideas are developed into product and service innovations. Product innovation includes quality, shape, color, and taste. Packaging innovations are also carried out to increase the attractiveness of products to potential consumers. Higher education plays a role in transferring knowledge and technology by means of training and mentoring methods. Meanwhile, the government has a role in drafting regulations that provide convenience to SMEs and facilitate marketing. Technopreneurship has an impact on the performance of SMEs as indicated by an increase in the quantity and quality of products as well as

various product innovations. Finally, the sales and profits of SMEs have increased and the benefits are not only felt by SMEs but also by the surrounding community.

This study provides managerial contributions for SMEs in developing technology-based innovative products. This study is also useful for local governments in finding effective and efficient SME empowerment models. For higher education, the results of this study can be used as a reference for research and community service programs. This research approach is a case study so it is not necessarily relevant for other cases. Therefore, the next research can take a wider case.

VI. REFERENCES

- Bailey, T. 2012. Technology Entrepreneurship: Overview, Definition, and Distinctive Aspects. *Technology Innovation Management Review*, 8(1) 5–12.
- Bentz, F. 1997. Managing Technological Innovation: Competitive Advantage from Change. New York: Wiley.
- Cooper, J. R. 1998. A multidimensional approach to the adoption of innovation. *Management Decision*, 36(8), 493-502. <http://dx.doi.org/10.1108/00251749810232565>
- Daugherty, P. J., Chen, H., & Ferrin, B. G. 2011. Organizational structure and logistics service innovation. *International Journal of Logistics Management*, 22(1), 26-51. <http://dx.doi.org/10.1108/09574091111127543>
- Drucker, P. 1985. *Innovation and Entrepreneurship*. (MA), Cambridge.
- Dutse, A.Y., Ningi, S.I., and Abubakar, S. 2013. Technopreneurship and Enterprise Growth in Nigeria: An Exploration into the Latent Role of Microfinance Banks. *IOSR Journal of Business and Management (IOSR-JBM) e-ISSN: 2278-487X, p-ISSN: 2319-7668. Volume 12, Issue 2 (Jul. - Aug. 2013), PP 25-32* www.iosrjournals.org
- Hult, G. T. M., Hurley, R. F., & Knight, G. A. 2004. Innovativeness: Its antecedents and impact on business performance. *Industrial Marketing Management*, 33(5), 429-438.
- Hurley, R. F., & Hult, G. T. M. 1998. Innovation, market orientation, and organizational learning: An integration and empirical examination. *Journal of Marketing*, 62(3), 42-54. <http://dx.doi.org/10.2307/1251742>
- Khazanchi, S., Lewis, M. W., & Boyer, K. K. 2007. Innovation-supportive culture: The impact of organizational values on process innovation. *Journal of operations management*, 25(4), 871-884. <http://dx.doi.org/10.1016/j.jom.2006.08.003>
- Lumpkin, G. T., and Dess, G. G. 2001. Linking Two Dimensions of Entrepreneurial Orientation to Firm Performance: The Moderating Role of Environment and Industry Life Cycle, *Journal of Business Venturing*, 16(5), 429–451.
- Okorie, N. et al. 2014. Technopreneurship: An Urgent Need In The Material World for Sustainability In Nigeria. *European Scientific Journal*, October 2014, 10(30), 59–73. ISSN: 1857-7881 (Print) e-ISSN 1857-7431.
- Olatunji, O. S. 2015. The Impact of ICT on SMEs Productivity in Nigeria on Small and Medium Scale Enterprise Productivity in Nigeria, Business Economics, and the Tourism Vaasa University of Applied Science. Page 1–47.
- Olusegun, O.O., Akpoviroro, K.S., and Adebowale, O.M. 2019. Impact of Technopreneurship on Business Performance. *Journal of Economics and Management Research. Vol. 8, 2019* <https://doi.org/10.22364/jemr.8.03>
- Ozgulbas, N., Koyuncugil, A. S., & Yilmaz, F. 2006. Identifying the Effects of Firm Size on Financial Performance of SMEs. *The Business Review, Cambridge*, 6(1), 162–167.
- Penrose, E. 1959. *The Theory of the Growth of the Firm*. Oxford University Press, Oxford.
- Roos, G., & Roos, J. 1997. Measuring your company's intellectual performance. *Long Range Planning*, 30(3), 325.
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- Tsai, K. H., & Yang, S. Y. 2013. Firm innovativeness and business performance: The joint moderating effects of market turbulence and competition. *Industrial Marketing Management*, 42(8), 1279-1294. <http://dx.doi.org/10.1016/j.indmarman.2013.06.001>
- Yang, C. C. 2012. Assessing the moderating effect of innovation capability on the relationship between logistics service capability and firm performance for ocean freight forwarders. *International Journal of Logistics Research and Applications*, 15(1), 53-69. <http://dx.doi.org/10.1080/13675567.2012.669469>
- Zawawi, N.F.M., Abd Wahab, S., Al-Mamun, A., Yaacob, A.S., Samy, N, K, & Fazal, S.A. 2016. Defining the Concept of Innovation and Firm Innovativeness: A Critical Analysis from the Resource-Based View Perspective. *International Journal of Business and Management*; Vol. 11, No. 6; 2016