The innovation of sustainable business model in eco-edutourism: a way for creating society 5.0

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Abstract

As a country with a huge population of more than 270 million people, Indonesia needs to reach society 5.0 to create a society-centred digital transformation. This study aims to formulate a business model for eco-edutourism in a vilage as a suburb with great potential in terms of natural resources and human resources. This research uses a qualitative approach with a type of case study. The primary and secondary data were obtained from semi-structured interviews, village databases, and related articles. The business model is formulated using the business model canvas with the identification of each element. The results show that the potential villages with natural resources and human resources can be developed into an education-based tourism village through its potential rich culture, cow farming, and proximity to another tourism destination. The business model canvas has been formulated from these potentials, which includes nine main elements. The main activities in this business are coffee processing educational tours, milk extracting educational tours, local cultural tours, nature tourism, and outbound tours. The value proposition formulated in the business model canvas in eco-edutourism is a social value that will focus on providing qualified education for visitors. The eco-edutourism initiation is expected to be an alternative to community-based digital transformation, especially in rural areas. Achieving digital transformation in the periphery areas on an ongoing basis can be a real step towards realising society 5.0 in Indonesia.

Keywords: business model canvas; eco-edutourism; society 5.0; tourism; village.

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INTRODUCTION

The development of the industrial revolution 4.0 has occurred massively in Indonesia, and the term "Making Indonesia 4.0" has even emerged as an effort to realise the industrial revolution 4.0 in Indonesia (Febrianto & Inayati, 2020). This condition certainly has a big impact on industrial development, especially in Indonesian manufacturing industry. In "Making Indonesia 4.0", the government is committed to achieve Top 10 Global Economy (Hidayatno et al., 2019; Indonesia Ministry of Industry, 2019; Schwab, 2016). This will provide a good contribution to Indonesia's economic growth. However, the rapid technology development coupled with industry development have not been able to fully solve the global society problem (Goede, 2020).

Furthermore, the artificial intelligence-based technology development has replaced people's jobs. The integration between machine development and human skills are difficult to realise because of the large increase in the human population. This is the main reason for the increasing number of open unemployment in Indonesia. Industrial revolution transforms the society 5.0 by facing challenges such as population growth and other social challenges. Society 5.0 makes humans as the centre of technological development, not only technology users. The existence of society 5.0 will answer problems that have not been resolved in the industrial revolution 4.0 and 5.0 (Goede, 2020; Mkwanazi & Mbohwa, 2018; Gladden, 2019).

Previous research from Ramoglou et al. (2015) explained that entrepreneurship is a way to overcome challenges in society 5.0. This is supported by Teece (2010) and Wirtz et al. (2016) who show that the development of a community-based business model is an alternative for society welfare (Kurowska-Pysz, 2016). There are many research which focus on the business model innovation to implement society 5.0 through technology development (Amshoff et al., 2015; Carayannis & David, 2014). However, previous business model innovation was not focus on human-based in the rural tourism SMEs communities although they have significant contribution to the Indonesia economic growth (Dewi & Mahendrawathi, 2019).

Eco-edutourism appears as an alternative of business model development that fits with village characteristic and potential. It is a sustainable tourism that aims to conserve the environment, preserve the lives and well-being of local residents by integrate nature, education, and tourism (Alipour et al., 2020; Nasikh, 2016). Hence, the development of eco-edutourism will support human-based digital transformation of society 5.0 (Kan, 2021; Kurowska-Pysz, 2016; Nasikh, 2016). The achievement of sustainable eco-edutourism can be seen from the fulfilment of

tourists, industry, environment, and society needs which are implemented in all types of tourism destinations (Kristiana & Nathalia, 2021).

Kemiri village in Malang regency is one of the border area with various tourism potentials. Its potential is the largest milk-farming village, an alternative road to Bromo Tengger Semeru tourism, one of national park in Indonesia. The demographic condition of Kemiri village with a total population of 6,134 people, including adults with 1746 heads of the family. In Indonesia tourism, Kemiri village becomes an effective route to go to Bromo Tengger Semeru (Azizah et al., 2019). Indonesia tourism development is currently directed to sustainable tourism development by using local resources, both human resources and natural resources (Budiani et al., 2018). The legal basis for tourism development is based on Law of the Republic of Indonesia Number 10/ 2009 concerning tourism which stated that tourism development is carried out based on the principles of diversity, uniqueness, and distinctiveness of culture & nature, and human need to travel. Kemiri village also has expert communities in managing milk, coffee, and biogas unchartered potentials. This village has also met the criteria for a tourism village through product potential and attractiveness, availability of undeveloped land/area as tourist destination, adequate support for facilities and infrastructure, human resources, and strong motivation from the community (Arida & Pujani, 2017).

Kemiri village has attracted some community service development from universities that focused on improving rural economy through cow-farming and biogas production (Krisnaningsih & Setiyaningsih, 2018; Siniati & Sa'ada, 2019). Nevertheless, these efforts have not been maximized the rural economic potentials due to the absence of a sustainable business model. No research has developed an education-based business model in Kemiri village as a sustainable maximisation of the village's potential (Azhar et al., 2018; Mahfud et al., 2021). Therefore, this study aims to develop a sustainable education-based business model in Indonesian village as an alternative to realise human-based digital transformation and achieve society 5.0 in Indonesia.

Tourism

Tourism is a leading sector to increase national economic income in Indonesia since Indonesia has rich natural tourism destinations. Tourism can be defined as the journey of a person or group of people from one place to another within a certain period of time, for recreation and entertainment purposes (Priyanto et al., 2018; Kurowska-Pysz, 2016; Simamora & Salam, 2016). According to Primadany & Mardiyono (2015), a tourism object must meet four tourism objects, including: travel is carried out from one place to another places; the purpose of the trip is solely for fun; the money spent by the tourist is taken from his country of origin; the trip is carried out for a minimum of 24 hours or more. The development of tourism is carried out based on the national, provincial, and city/ district master plan of tourism development.

Ecotourism

Ecotourism can be described as a tourism activity with minimal impact, conservation, responsibility, and appreciation of the environment and culture of the people visited as a form of travel to natural areas that is carried out with the aim of conserving the environment and preserving the lives and well-being of local residents (Nasikh, 2016). According to Oktaviani & Suryana (2006), the government has to identify the tourism main issues, policies, regulations, and developing paradigms. The achieve a successful ecotourism development, it has to be well-planned and involves stakeholders (national and local government, investors, and society).

Edutourism

There are multiform perspectives on how tourism has been recognized in form of both social and economic development. Conventional tourism, ecotourism, and edutourism are common examples of this perspective. Edutourism provides a new perspective of how multiple actors develop an integrated conventional tourism with education. Edutourism also has a potential in particular area such as natural beauty which empowers the concept of social engineering to make special economic products while the community shares their knowledge through education and training programs to the visitors (Sulaiman et al., 2019). Edutourism is sustainable tourism because it focuses on how society should consider to integrate environmental, social, economic, and education which bring greater impact to social welfare (Alipour et al., 2020).

Eco-edutourism

Eco-edutourism is a combination of eco-tourism and edu-tourism. This tourism concept will make visitors enjoy the atmosphere of the natural beauty of and get education on how to preserve this environment based on the social community engagement (Santoso et al., 2019). The concept of eco-edutourism was motivated by maintaining biodiversity in our livelihood. With the concept of eco-edutourism, the community is expected to raise sustainable economic, social, and cultural development (Satria et al., 2021).

Business model innovation

Business model innovation is expected to gain the performance and competitive advantages which also articulate challenge and potentials and build the narrative of this development. This study uses the business model canvas to represent narrative business development in village's eco-edutourism society. The business model canvas recognizes the importance of the value proposition of the developed tourism product and service by integrating key partners, key activities, key resources, value proposition, customer relationship, customer segment, channels, cost structures, and revenue stream of tourism company (Ojasalo & Ojasalo, 2018).

Key partners are resources needed in the implementation of business activity that cannot be obtained with money other than by establishing cooperation (Crosno et al., 2021). Key activities are all activities related to business productivity related to a product, where the main activity is to generate a value proposition (Strulak et al., 2020). Key resources are a partition in the business model canvas that contains a list of resources that should be planned and owned by the company to realize their value proposition which consists of physical, intellectual, human, and financial resources (Dudin et al., 2015).

Meanwhile, the value proposition is one way that can be done to attract new customers and retain old customers so that they continue to use or visit the developed business (Keane et al., 2018). A customer relationship is a way for a business unit to communicate and retain existing customers and get new customers (Andreas et al., 2020; Azhar et al., 2018; Braun et al., 2021; Hamwi et al., 2021). Customer segment is the process of dividing customers into groups based on common characteristics so companies can market to each group effectively and appropriately (Dudin et al., 2015).

Channel element is an effort used to convey information and products to potential consumers so that they can be accepted (Daou et al., 2020; Joyce & Paquin, 2016; Salvador et al., 2021). Meanwhile, the cost structure required in the implementation of eco-edutourism is divided into two parts: fixed costs and variable costs (Braun et al., 2021). Revenue streams are the most vital part, where companies derive revenue from customers (Meertens et al., 2012). The previous studies that discuss about the implementation of business model canvas in nature-based tourism companies in Indonesia have been done by Ely et al., (2020) and Azhar et al., (2018). These previous studies explained about key resources needed to develop nature-based tourism and how to generate revenue in sustainable manner.

METHODS

This study uses a qualitative with a case study approach to investigate and explore the formulation of an eco-edutourism business model. This study modifies the research method to formulate an eco-edutourism business model in Kemiri village, Malang Regency (Amshoff et al., 2015; Azhar et al., 2018., Curtis, 2021; Hunke et al., 2017). Primary data were obtained from semi-structured interviews with informants and observation, while secondary data were obtained from village databases and related literatures.

This study uses purposive sampling to select informants. The purposive sampling criteria are society involved in Kemiri's tourism development, including youth organization (3 informants), farmers reprsentatives (3 informants), and village head (1 informant). The research steps are divided into five steps including literature review, data collection and preparation, data validation using triangulation technique, formulation of a business model using the business model canvas method, and disseminating the business model. The formulation of the business

model canvas begins with identifying current conditions of nine elements, including customer segments (CS), value propositions (VP), channels (CH), customer relationships (CR), revenue streams (RS), key resources (KR), key activities (KA), key partnerships (KP), and cost structures (CS).

RESULT AND DISCUSSION
Data validation using triangulation

The observation and interview results show that the geographical and topographical potential of Kemiri village encouraged Kemiri villagers to have skills in milk processing, coffee processing, and biogas production. This is supported by the frequent use of Kemiri village to become partner villages for training in making milk, coffee, and biogas by university's community development program. However, based on the interview with village head and community representatives, it was revealed that the training had not been followed up. It makes the skills of the Kemiri village community were not directed. On the other hand, the culture of Kemiri village is still well-preserved, such as art village, mask dance, sacred *punden*, and one *suro* night rituals that attract visitors.

The potential of Kemiri village, both in terms of geographics, topography, communities skills, and culture, is very suitable to be initiated and developed into an eco-edutourism village. This potential includes cow farming education, milk-processed products (such as milk candy) training, and biogas production's training. The beautiful village with traditional tourism bringing visitors back to the atmosphere of local wisdom (Arida & Pujani, 2017). However, creating an eco-edutourism village is not only in terms of regional and cultural potential but also from its human resources.

Triangulation consists of data triangulation, investigator triangulation, methodological triangulation, and theory triangulation. Triangulation of data has been achieved by selecting the appropriate informants to achieve objectives of study. Observers and interviewers are management and entrepreneurship researchers, so investigator triangulation has been fulfilled. Methodological triangulation was obtained by compiling an interview instrument that validated by some experts. This research was conducted based on the business model canvas to fulfil the triangulation theory.

The result shows that villagers has low level of participation in village development, apathetic, and less mutual toward eco-edutourism programs. Besides, it is also found that these communities have lack of knowledge in developing and find marketable village potentials. The majority of villager's occupation is conventional farmer so that the potential of Kemiri village were not maximized.

Business model canvas formulation for the eco-edutourism

The process of formulating this business model is based on identifying its elements and involves the internal parties of the Kemiri village including village head, farmer representatives, and youth organisation representatives.

Key Partners	Key Activities	Value Proposition	Customer Relationship	Customer Segment
- Tourism office - Youth organization of Kemiri village - Kemiri village community - Cattle farmer - Owner of the coffee plantation - Cultural actors	- Promotion - Coffee processing - Dairy product - Culture tour - Natural tourism - Outbond **Key Resources** - Natural resources - Human resources - Financial support from local government - Tourism infrastructure	- Nature-based tourism and education - Integration of livestock, plantations, agriculture and processed industries - Beautiful natural scenery of Bromo - Local cultural wisdom that is still maintained	- Discount voucher for school and companies - Bundling package - Special price for communities **Channels** - Travel catalogue - Blillboard - Social media - Website	- Primary education - Urban family - Domestic and international tourists - Companies

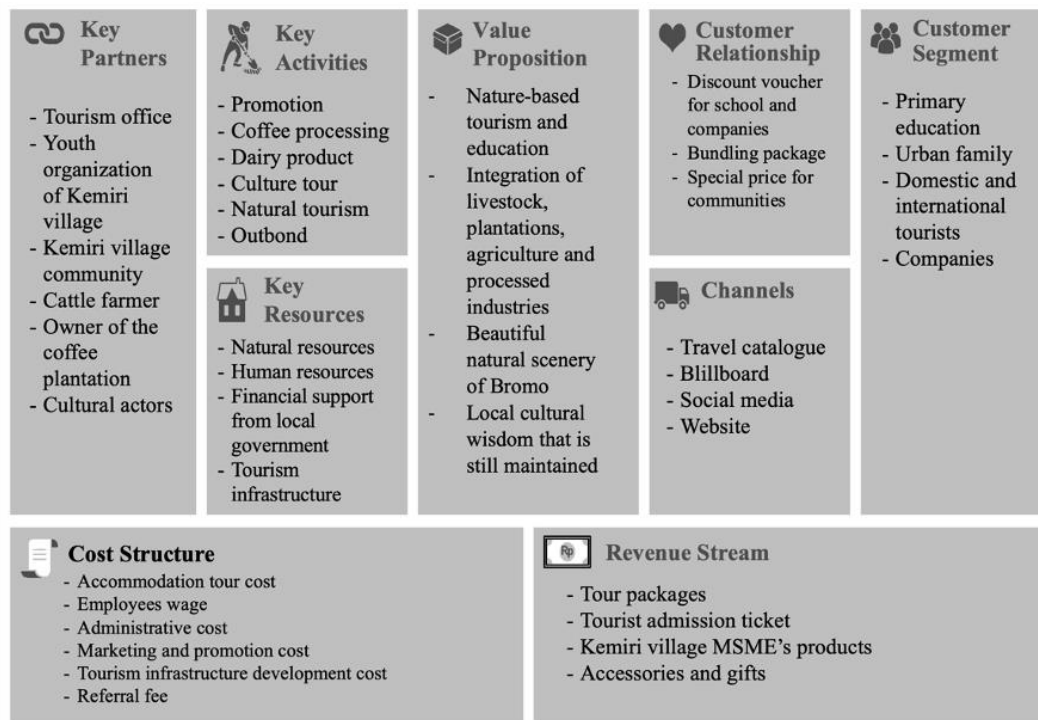| Cost Structure	Revenue Stream
- Accommodation tour cost - Employees wage - Administrative cost - Marketing and promotion cost - Tourism infrastructure development cost - Referral fee	- Tour packages - Tourist admission ticket - Kemiri village MSME's products - Accessories and gifts

Figure 1. Business Model Canvas

Based on the Business Model Canvas (Figure 1), the following is an explanation of each of its elements.

Customer segment

The target market of eco-edutourism programs in Kemiri village are elementary schools, urban families, domestic and international tourists, and corporate in urban cities such as Surabaya and Jabodetabek. These target market was chosen because elementary schools usually provide study tours to their students by inviting them to learn by play in rural areas. The visitors can learn about farming activities, and raising livestock from the villagers. Selection of the right customer segment is the key business success, especially in preparing of the business model canvas (Braun et al., 2021; Hamwi et al., 2021).

Customer relationship

Customer relationship that will be used at eco-edutourism Kemiri village is by giving special prices or discount vouchers to schools, companies and communities. For example, there is a bundling package of culture tour, coffee plantation and cow farming tour with special price. Hence, the tourists who visit this place will experience emotional bonding and memories through locally made merchandise and accessories. This way of establishing customer relationships has

proven effective in supporting business productivity (Azhar et al., 2018; Jie et al., 2016; Priyanto et al., 2018; Salvador et al., 2021).

Value proposition

Kemiri village has a complete natural wealth and beauty. When all these elements are combined, it will become an advantage and uniqueness. As one of the accesses to Bromo mount, Kemiri village has great tourism potential to be developed. In addition, as a center for dairy cattle and processing, coffee plantation products become added value for this village to become a new tourist destination that not only offer recreation but also education. Meanwhile, the social value of this eco-edutourism are sociability with local society, local wisdom learning, nature awareness, and character-based education (Ayuningtyas et al., 2019). Eco-edutourism in Kemiri village will also have a good environmental impact if it is developed without harm its beautiful natural ecosystem. This business model is adopted from ecocanvas which has been widely applied abroad for the business sustainability (Daou et al., 2020).

Channels

As a publication of Kemiri village eco-edutourism, several strategies and distribution channels will be implemented in the online and offline approach. The offline approach will be carried out by offering and promoting tour packages to the target market such as setting billboards in strategic locations. Meanwhile, online channels will be carried out through social media such as Instagram, Facebook, and websites to enable potential consumers to know about this location. The collaboration of these two types of distribution channels are effective to attract and retain visitors (Banerjee & Bhardwaj, 2019; Yi, 2018).

Revenue stream

The revenue stream of eco-edutourism in Kemiri village comes from the entrance ticket for tourists destination. Entrance ticket types are village entrance fee, tour package tickets, and tickets for other additional rides. In addition to tour tickets, eco-edutourism can also have income from partnership such as guest house rentals, souvenirs and MSME's products store, and cullinary tenants. This partnership model will be a strategic way to achieve a good financial performance This revenue stream can expand further along with the visit growth (Crosno et al., 2021).

Key activity

The main activity of the Kemiri village eco-edutourism are promotion, coffee processing, dairy products, culture tour, natural tourism, and outbond. These activities include milking cows, milk processing, coffee harvesting, and activities related to culture and local customs rituals (Crosno et al., 2021).

Key resource

To implement eco-edutourism activities smoothly, Kemiri village's key resources are natural resources (plantation and farming), human resources, financial

support from local government and tourism infrastructure such as open stage, a hall, an information center, and other public facilities (Daou et al., 2020).

Key partner

For the smooth running of eco-edutourism activities in Kemiri village, supports are needed from the Malang Regency tourism office, community leaders, youth organization, local communities, farmer groups, farmer, and local business actors. This partnership is very important because the main concept of eco-edutourism is the a good cooperation and communication between all elements of society.

Cost structure

The cost structure of eco-edutourism in Kemiri village consists of direct and indirect cost. The direct tour costs are cost incurred from accommodation tour, employees wage, administrative cost, marketing and promotion cost, and tourism infrastructure development cost. Meanwhile, the indirect cost including referral fee for lodging and accommodation partners which promoting this village tourism attraction.

Theoretical contribution

Business model plays an essential role to run company's affairs, develop marketing strategies, and endure its performance for stabilizing and upgrading its business environment (Schaltegger et al., 2015). Various kinds of business models have been introduced and may be implemented in multiple fields of business, including tourism business. The implementation of Business Model Canvas (BMC) on tourism continues to increase recently. This is because the concept of business model canvas offers the integration between business elements to address customer needs, how to generate revenue, and create customer satisfaction by utilizing company resources (Richards, 2021). On the other hand, the business model canvas acknowledges that company may become stagnation and fail. Therefore, business model canvas will provides how company focus on identifying the key areas in functioning and developing business management and how to develop further sustainable business development (Dudin et al., 2015).

The result of study explains about the implementation of business model canvas in nature-based villages. This study strengthen the study result of Ely et al. (2020) which explained about the implementation of business model canvas in urban fisheries tourism of Ambon Island. As this study, the previous study also faced similar challenges in promoting and attracting potential customers and differentiate their tour offers because the location characteristic is separated (in Negri Assilulu villages, Negeri Larike villages, and Wakasihu villages of Ambon Island). Therefore, the local government manage it by optimise its tourism marketing and promotion by utilising technology and social media. Besides, the tourist destinations also analysed customer (visitors) needs using nine elements of knowledge structure of business model canvas that represent what costumer needs

on tourism. This previous research explained that visitors need various attractions such as diving/snorkelling adventures as the main attraction, culinary and history and culture attractions. As this study, the previous study also provides recommendation that villagers need to develop diversification of tourism offers.

Meanwhile, this study also has similar challenge with the previous study of Azhar et al. (2018) in terms of international visitor number. Baturaden tourist destination in Central Java that researched by previous study only has 5% of international visitor, although the local government already promoted this destination in various mass media channel. This study found that there were lack of marketing effectiveness because the tourist destination management did not utilize social media and the internet-based promotion. There were also are lack of adequate human resources, tourism infrastructure and another technical problem that exacerbated Baturaden tourism improvement. As this study, Azhar et al. (2018) suggest the importance of creating society 5.0 by involving all society elements to build the eco-edutourism and mapping the village's resources and key partners. This study also supports the previous finding that eco-edutourism should be integrate with technology-based promotion and business model.

CONCLUSION

From the above discussion, it can be concluded that Kemiri village has the potential to be used as an education-based tourism village in natural and human resources. This step is implemented as a community-based digital transformation that can improve social welfare. The potential of natural and human resources are important resources in formulating the business model canvas during the eco-edutourism business implementation. From the formulation of the business model canvas, it can be concluded that the selected customer target are elementary schools, families, urban tourist, and corporate that will conduct study or company tour. In addition, the value proposition of this business is a social and education value which provides social benefits to customers. The existence of this value can be a strategy to attract visitors or customers. Formulating a business model in Kemiri village is one way to realise society 5.0 in Indonesia, especially in rural areas. This business model is adoptable by other villages with similar characteristics in Indonesia.This research is limited to the research location, which only involves one rural village. Therefore, further research can expand the research object and enrich the formulation of business model with other methods such as *sprint design*.

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