Design Innovation, Utilization of Information Technology, and the Role of Entrepreneurial Spirit in the Gemstones and Fossils Creative Industries of Sangiran, Sragen Indonesia

Review of Integrative Business & Economics Research

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ABSTRACT

This study aims to improve understanding of the values of creative industries based on local wisdom, to determine the behaviour that encourages the creation of creative industries, and to develop the entrepreneurial spirit of creative industries. This project was performed as research and development of gemstone small and medium enterprise in Sangiran, Sragen, Central Java Province. The project realizes a prototype model for instruction in the development of jewellery design from gemstones and fossils as well as the technology for breaking down and polishing gemstones and fossils into value-added products. Training in the design of new rings and arrangements of gemstone jewellery was arranged to encourage innovative design with attention to local wisdom. The study spanned over three years. The output includes a published reference book on the gemstone small and medium enterprise (SME) development, a national seminar IENACO UMS, and a copyright process for innovation in gemstone pendants. In line with the principles of 'green entrepreneurship', several factors that affect the performance of SMEs were analysed to find support for local wisdom.

Keywords: productivity, value added, gemstone craftsmen, Sangiran, local wisdom.

1. INTRODUCTION

The Sangiran Museum has changed location three times. It was first located in Dayu Gondang Rejo Karanganyar; next, it was located at Krikilan (in a building now used as a village office); finally, it moved to its current location in 1986. At that time, gemstone sellers occupied the parking area.

The sellers' application for space was eventually approved by the local government in the form of land. The building was constructed through the sellers' mutual cooperation, but it collapsed because the land was unstable. A cooperative was established on September 29,

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1999, to apply for a grant from the local government for construction materials. This application was supported by the formation of the Balai Pelestarian Situs Manusia Purba (Prehistoric Man Site Preservation House), which has represented the cooperative until the present. The cooperative has had 35 sellers since 1986.

Precious stones are minerals created by geological processes that consist of one or more chemical components. They have high sale prices and are preferred by collectors. Precious stones are polished before being made into jewellery. In Indonesia, only some areas contain precious stones, including Banten province with its Kalimaya opals, Lampung with its nice grape and champaca stones, and Kalimantan island with its *kecubung* (amethyst) and diamond (polished diamond). Precious stones are named from "A" through "Z" and have their hardness ranked on the Mohs scale from 1 to 10 points. The most preferred precious stones in the world are crystallised ones, such as diamonds, emeralds, rubies, and sapphires. The grape types of agates like *Biru Langit*, *bungur* or *kecubung* originating from Tanjung Bintang, Lampung are currently hunted widely by collectors because of their crystal quality. There are precious stones in the Sangiran village of Sragen, but the village people have not made use of these stones because of local beliefs about not harming nature.

University researchers and related parties worked together to help the villagers increase productivity and add value to their products by expanding the marketing of products made by Indonesia's small and medium enterprises (SMEs) both domestically and globally. The findings of studies conducted by universities and other centres and the results of applied innovative technologies have been used in the production and marketing of SME products. Central and local governments are expected to implement an integrated policy to support the development of SMEs in Indonesia.

SMEs play an important role in supporting the economies of developing countries such as Indonesia. SMEs help sustain a healthy economic system that can survive global crises. According to data from the Indonesian Chamber of Commerce and Industry, the SME sector accounts for a large portion of Indonesia's gross domestic product (GDP). In 2009, SMEs accounted for 53% of GDP in Indonesia. However, at the end of 2012, SMEs in Indonesia employed only 0.18% of the total population. For high economic growth and sustainability, SMEs would ideally employ about 2% of the population.

Many researchers have argued that entrepreneurial orientation has either a positive or negative impact on improving business performance (Rauch et al., 2004). This study arises from the conflicting findings of previous research that found that either entrepreneurial orientation has a significant effect on business performance (Keh et al., 2006; Hui Li et al., 2008) or that it has no significant effect (Naldi et al., 2007). Most of the literature suggests a significant influence of entrepreneurial orientation on a company's performance. SMEs have many limitations, such as a limited quality of human resources, a lack of business networks and market penetration ability, and a lack of capital sources. However, innovative SMEs that have a competitive advantage will stay in business.

Structuring traditional markets, localising business with adequate support access, and providing infrastructure can help SMEs create value and help them to compete with foreign products. Of course, it is important not to nullify and displace the marketing of local products, which are mostly from SMEs.

Based on the background discussed above, the problems in the second of this study's three years were:

1. How to design the gemstones and fossils industry to match market taste?
2. How to increase the technology used by overcoming the lack of skill and business

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management in the gemstones and fossils industry?
3. What is the role of entrepreneurial spirit in the development of creative industries?

The goals for the second year were:

1. Realise an appropriate technology prototype for modelling, engineering, and souvenir design
2. Implement the prototype and a test evaluation
3. Perform an administration process for HAKI (hak kekayaan intelektual, hak cipta)
4. Hold seminars and workshops for prototype development
5. Evaluate the implementation of the new technology
6. Create a substantive process for HAKI/Paten

The efforts of research universities and other related parties synergise the implementation of innovative applied technology in the production process and marketing of SME products. The creative industry of gemstones and fossils souvenirs was chosen because it is the leading sector in Sangiran, Sragen and is a small industry that employs many local workers.

1.1 Benefits for Social Science and Technology Development

1. Entrepreneurship science
   a. Development of the theory of entrepreneurship as a discipline that studies one's ability to face life's challenges through the application of creativity and innovation to meet market needs and opportunities.
   b. Development of the design of gemstones and fossils and improvement in the value added by the creative industry, increasing the competitive advantage of gemstones and fossils in the market.
2. Benefits for growth
   a. Poverty reduction and improvements in the socio-economic life of artisans by increasing the potential of the craft community, which in the long run will accelerate the economic recovery of Indonesia.
   b. Expansion of employment opportunities for the wider community through the growth of new entrepreneurs in the souvenir gemstones and fossils field.
3. Benefits for the institution
   a. Popularise the existence of Universitas Sebelas Maret Surakarta and its role in providing alternative solutions to local and global issues and its support for competitive social and economic activities based on science and technology.
   b. Creation of synergies between the sustainable development potential of the community, government, and Universitas Sebelas Maret Surakarta based on the principles of cohesion and harmony (link and match) and provision of inputs into the development of education curriculum materials.

This study also identifies the strengths, weaknesses, opportunities, and threats that occur in each industry, using these as the basis for formulating policies, strategies, and action plans to develop the gemstones and fossils souvenir industry by increasing its competitiveness.

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The objective of this study is to disseminate the policies and development strategies for the gemstones and fossils souvenir industry, increasing regional competitiveness in the industry.

2. THEORETICAL BACKGROUND

Data from the Central Statistics Agency/Badan Pusat Statistik (BPS) showed that during the first quarter of 2009, non-oil exports in Indonesia declined dramatically to their lowest point both in terms of value and volume of national exports. Non-oil exports in January and February 2009 only amounted to 6.5 billion US dollars. In October of 2009, exports reached their highest level of 10 billion US dollars. Indonesia's exports dropped by 22.31% between 2008 and 2009. However, exports increased by 20.72% between September and October 2009 and they increased by 10.12% between October 2008 and October 2009 (BPS, 2009). These last two months were encouraging because non-oil exports mostly derived from SMEs continued to grow. One must be careful, however, to consider the quality of exports in terms of the quality of products, the quality of service, and the quality of distribution.

China, with a population of around 1.3 billion has the fastest economic growth in the world. Its economy grew 8.7% in 2009 and was projected to grow by 9.5% in 2010. With a large population and high economic growth, China, often called the consumer of last resort, has siphoned the various needs of other countries. The ratio of China's GDP to world GDP increased from 1.3% in 1990 to 7.3% in 2008. A report from the Organisation for Economic Cooperation and Development (OECD) predicted that China would become the third largest exporting country in the world, behind the United States (US) and Germany, in 2010. In this capacity, it is natural that China needs to import many raw materials. Therefore, imports from ASEAN countries were expected to rise sharply. This means that SMEs have a great opportunity to fill the demand both for finished goods for China's domestic consumption and raw materials for Chinese production (Kompas, 2008).

Regional economic development is different from national economic development (Meyer-Stamer, 2003) in that: (i) there are a number of instruments used for economic development that are outside the scope of local initiatives; (ii) national economic development is formulated and implemented by the government, while regional economic development can be designed and implemented by private parties without the government's participation; and (iii) national economic development programs include a clear understanding of the division of tasks between the legislative and executive branches of government, whereas regional development initiatives typically have unclear role definitions.

According to Arsyad (1999), the purpose of regional economic development is to create jobs, achieve regional economic stability, and develop a diverse economy based on the area. Furthermore, Arsyad (1999) explained that a strategy to achieve the objectives of regional development must address physical/locality development, business development, human resource development, and community development.

2.1 Green Entrepreneurship Orientation

Green entrepreneurship is a relatively new concept that has been a focus of attention for both academic and practitioners since the 1990s (Harini et al., 2013). Applying business practices that are environmentally responsible opens additional opportunities for

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entrepreneurs. Entrepreneurs can identify and exploit niche market opportunities to improve their welfare while caring for the environment. The term "green entrepreneurship" means entrepreneurship that is developed in the green sector, solving old problems in new ways. A green entrepreneur is someone who starts a business to make or offer products, services, or processes while keeping the environment in mind.

Green entrepreneurs are individuals and organisations involved in entrepreneurial activity that has environmental benefits (Rao et al., 2013). The term also refers to an organisation's efforts to design, promote, price, and distribute products that will not harm the environment. Ndubisi et al. (2009), and others defined green entrepreneurship as entrepreneurs' tendencies to innovate or create green organisations as essential elements of a comprehensive green system. According to Chan et al (2013), there are still important differences between the points of view of green entrepreneurs in developed countries and developing countries. Developed countries and international organisations tend to emphasise the term "green" and market opportunities, while developing countries focus more on the term "entrepreneurship" and what the market needs. Chinese and Indian entrepreneurs, for example, completely changed the pattern of economic development by developing affordable products that met the needs of poor people in a green manner (Khanna, 2011).

Osukoya (2007) argued that small firms have several advantages over large companies in adopting environmentally conscious practices. Consumers are likely to see smaller companies as more friendly than larger companies and small companies can react actively to increasing demands for green products and services in virtually all market segments (Osukoya, 2007). The entrepreneurial spirit is more important than existing regulations in making business innovation green (Martinsons et al., 1996).

2.2 Entrepreneurship Education and Creative Industry

Entrepreneurship education has been taught as a separate discipline and can be broken down into theory, concepts and scientific methods, which are complemented with instructional media in the form of training provided by external parties or experience (John in Rahmawatiand Nurlaela, 2009). Entrepreneurship education aims to create entrepreneurs who have knowledge, skills, and a mental attitude of entrepreneurship.

According to Meng and Liang (Rahmawati and Nurlaela, 2009), entrepreneurship is one of the keys to economic growth and development. A company's survival is highly dependent on the resilience of entrepreneurs and their ability to reach a competitive advantage through creative thinking and innovative behaviour (Zimmerer and Scarborough, 1996).

Pinillos and Reyes (2011) stated that the entrepreneurial spirit is associated with someone's individualism, which in turn is related to an individual's goal achievement. According to Lyer (2004) in Kaur (2014), innovations in the entrepreneurial process can be summarised as follows:

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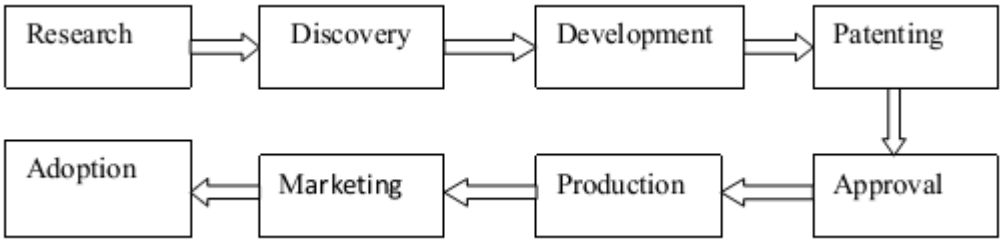

Figure II.1 Entrepreneurship Processes (Lyer (2004) in Kaur (2014))

Kaur (2014) also mentions that innovation in business is carried out by the following main activities:

1. Improvements in the design of an existing product
2. The discovery of a new product.
3. Outsourcing R & D and innovation
4. Innovation based on process needs
5. Changes in industry structure and markets

A model is the smallest unit of a learning program that contains material and activities that clearly transform and address some stated goals. Training is an activity undertaken to improve knowledge, skills, and attitudes with the goal of improving current and future performance (Nurlaela, Rahmawati, and Celviana, 2009). Training is useful for a community to increase self-efficacy and personal attitude because it is the most influential element in determining the entrepreneurial spirit. Therefore, training and developing skills that improve creativity, innovation, networking, leadership, and negotiations are appropriate (Linan et al., 2011).

2.3 Quality of Organisational Learning

The concept of organisational learning arises in the context of environmental change and competitiveness, which requires organisation and leadership competencies to transfer knowledge to all members of the organisation. Supporting organisational learning with a conducive environment creates people who are knowledgeable and reliably competent. In addition, supporting empowerment requires giving assignments and positive support to every member of the organisation when they are engaged in learning activities, leading to improvement in their performance. Dixon (1994) defined a learning organisation as an organisation that facilitates the learning of all of its members and consciously transforms them in the organisational context.

At the level of the individual, group, and organisation, the purpose of the learning process is to continuously transform the organisation to meet stakeholder satisfaction. To achieve this, each head of the organisation must bring new thinking patterns and apply them to any individual, group, and community. According to Garvin (1993), there are five activities that must be performed in organisational learning: systematic problem solving, experimenting with new approaches, learning from past experiences, learning from the experiences of others, and transferring knowledge quickly and efficiently. Marquardt (2001) defined organisational learning as an organisation that learns collectively and is excited to continuously transform itself through the collection, management, and use of knowledge, leading to the success of the company. It is important to empower human resources both

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inside and outside the company to learn while working and to use technology to optimise both learning and work productivity.

2.4 Module Development

Workshop model and training module. Through a workshop forum with a related speaker/source, teaching materials/modules were arranged as materials to be delivered in the learning process. A model is the smallest unit of the learning programs compiled so that the material presented in the activities is clearly transformed and addressed to the goals. The training module covered aspects of learning about entrepreneurial insight, including designing technology applications of gemstone and fossil souvenirs and the learning principles of small business management, organisational and human resources management, and small businesses planning.

Workshop model and training module completion. Completion of the workshop model and training module was done through a workshop forum with a speaker/source related to the field of the teaching module.

Development of gemstones and fossils souvenirs design to be patented. Indonesia has outstanding resources of natural stones. Many natural stones are turned into highly demanded ornaments after being processed to become beautiful handicrafts. Besides ornaments such as rings, necklaces, bracelets, hairpins, and brooches, these precious stones are also used for accessories in bags and keychains. These stones are believed by some to bring good luck. Some types of stone are suitable for use by month of birth; for example, in January one uses garnet and zircon, while in February one uses amethyst and citrine.

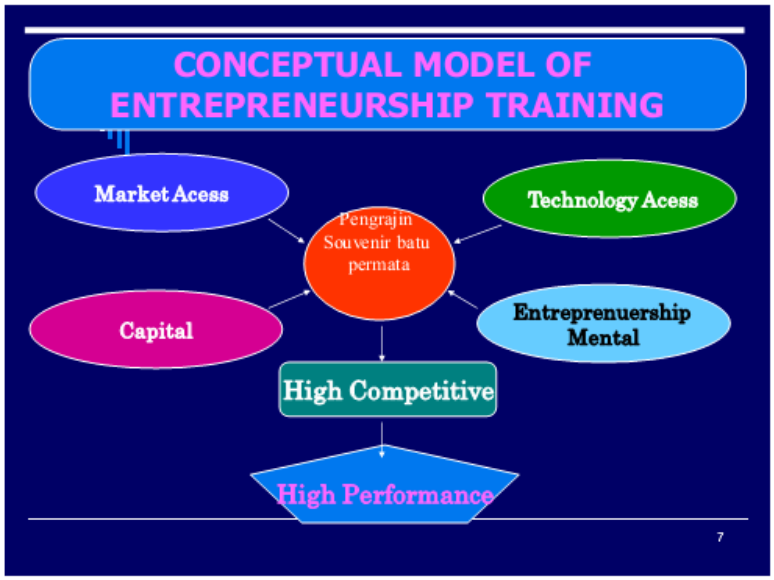

Figure II.2. Conceptual framework of training

3. RESEARCH METHODS

This study was a cross-sectional study of subjects and objects across time. The study

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was done in Sragen, Central Java province.

The steps of the research were as follows:

1. Analyse the training needs.
2. Design entrepreneurship training.
3. Develop instructional materials (modules).
4. Judge and perform a limited field test.
5. Implement the model.
6. Revise the model.
7. Evaluate the model implementation and design development.
8. Write recommendations and reports.

The data were collected in the following ways:

1. A pilot study was conducted using a quantitative descriptive approach.
2. The design development stage was conducted using a descriptive and FGD (focus group discussion) approach, followed by adoption of a limited trial of design models with an experimental method (single one-shot case study). Once there was an improvement from the limited test, then a broader test was performed using an experimental method (one group pretest-posttest).
3. The next stage was model validation with either a quasi-experimental method (pretest-posttest with control group design) or an evaluation stage.

Design development was tested using a judges' test or limited field tests to assess the design's feasibility. Limited field tests using the experiment method of a single one-shot case study with three testing occasions were used:

1. Limited testing 1st test
2. Limited testing 2nd test
3. Limited testing 3rd test

If the design development was not perfect, it was necessary to revise to achieve suitable competency for improving the design development activities. Design revision was done in the following situations:

1. There was a deficiency or laxity in the real use conditions
2. The newly used design test was evaluated for design improvement.

The design trial test was combined with the experiment as follows:

1. Comparing the effectiveness and efficiency of the old design system with the new system.
2. Comparing before and after using the new design.
3. Comparing an experimental group and a control group.

The development and implementation of the design process needed guidance, supervision, and evaluation to avoid deviations.

Design validation was performed as follows:

1. Rational assessment of whether the planned design of the activities process would be more effective than the old design.
2. The validation was "rational" in that it was an assessment based on rational thought rather than facts.
3. Validation was done by presenting several specialists or experienced experts with the new product.
4. Weaknesses and strengths were identified. Design validation was further explored performed in discussion forums.

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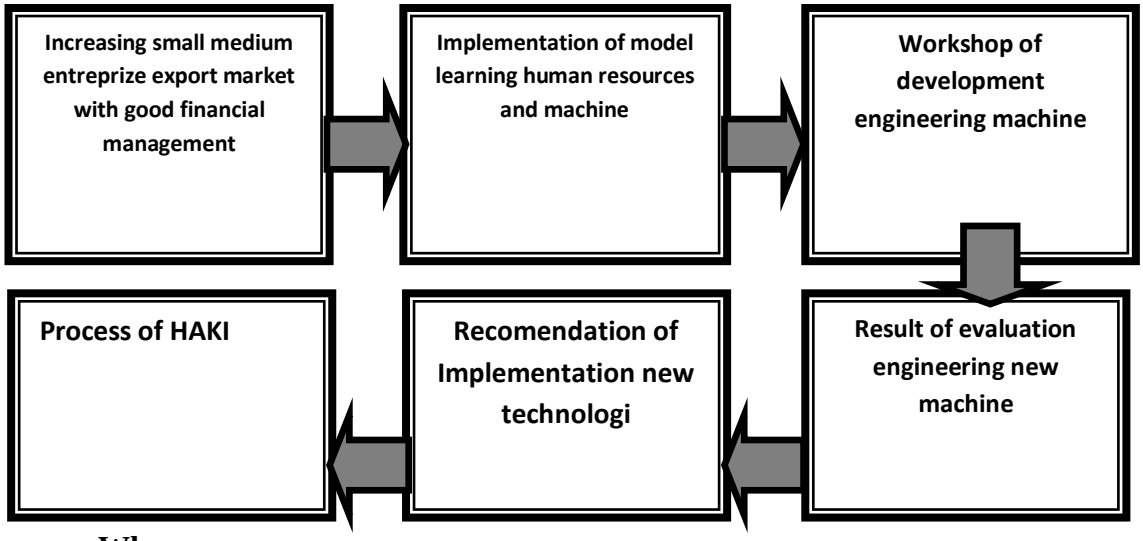
The design development of the gemstones and fossils souvenirs was expected to improve the export products' performance to the extent that change was observed.

The road map in the second year was as follows:



Where:
HAKI: hak kekayaan intelektual

4. RESULTS AND DISCUSSION

4.1 Descriptive

Population of this research were small medium enterprize gemstone in Sangiran Sragen Indonesia. The following data present the minimum, maximum, and mean (average) of each variable.

Table 4.1 Descriptive Statistics

Variables	N	Minimum	Maximum	Mean
Green orientation	99	26,25	76,25	60,34
Quality of learning	99	25	80	64,94
Innovation product	99	10	85	53,08
Development product	99	2,5	82,5	45,65
Performance	99	10	65	30,64
Valid N (listwise)	99			

The averages for the green orientation and the quality of learning variables were above 60, meaning that the respondents understood the importance of environmental orientation and the

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need for learning quality. The averages of the product innovation and product development variables were under 60, meaning that gemstones SMEs were less creative because tourists wanted lower prices. These results indicate that product development based on local wisdom and environmental friendly beliefs is needed for gemstone SMEs, and that product and material diversification are also required.

This development study operated smoothly and was institutionalised through the establishment of Business Study Groups (KBU), accompanied by Mekar Niaga BDS (business development service). It was identified that gemstone craftsmen have four types of life skills: 1) personal skills, which are skills needed to understand themselves, to think rationally, and to perform with strong self-confidence; 2) social skills, which include the ability to communicate, to cooperate, and to be considerate of their social responsibility to the community; 3) academic skills, such as the ability to formulate and solve problems through critical thinking, to analyse, and to use the scientific method when doing research, exploration, innovation and creation; and 4) vocational skills related to the field of weaving that can be used either as an employee or in independent business. Craftsmen must also have the entrepreneurship ability to manage and develop business plans, to conduct business development through creative and innovative thinking, and the ability to conduct business in a professional and independent way.

Planning, implementation, and supervision of research and development involved an intensive partnership between a) the village/Camat government agency for recruiting craftsmen, b) the department of industrial cooperatives and SMEs for funding, c) the tourism department of Sragen, d) Universitas Sebelas Maret Surakarta and Yogyakarta State University as researchers, and e) the SME Gemstone Cooperative at Sangiran in Sragen.

The performance of the industrial partners improved after the application of technology. They increased their profits, number of employees, and investment; expanded their marketing; improved the skills of craftsmen in planning and managing the business of gemstones, obtaining decent incomes that fulfilled their daily needs; cultivated insight into the entrepreneurial spirit among the craftsmen, leading to a strong work ethic and enhanced ability to produce excellent products that can compete in the global market; and improved the ability of craftsmen to manage natural resources and to be able to use various technologies in their handicraft businesses. SMEs could understand themselves, others, and the environment better and were able to work in teams in both formal and informal sectors.

Research was done on improving applied technology. The science and technology selection method used in the implementation of activities started with observation of gemstone products, the manufacturing process, and stone polishing machines in Sangiran district. The research team and the craftsmen determined appropriate concepts in identifying designs that would match consumer demand and determined that a diversification of new products would be attempted. The research team also conducted observations to find the advantages and disadvantages of rock breaking machines and bur duduk (bur machine) in improving financial management, workshops activities, and business operations. Individual mentoring determined the potential of each craftsmen to be developed.

From the issues mentioned before, alternative solutions were offered for the gemstone craftsmen in the village of Sangiran to enable them to be independent and start new businesses with appropriate skills. The training involved the following components:

1. Export-import training, accounting, cooperatives taxation, and marketing management.
2. Entrepreneurship mental attitude training.

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3. Financial management training for participants.
4. Business management training.
5. Success stories presented by relevant business practitioners and study visits to silver SMEs in Kota Gede Yogyakarta.
6. Making the website bambangartsangiran.com to increase exports.
7. Copyright process for the new design of pendants from the training results.

4.2 Mentoring Implementation

The instructor team visited each group, identifying problems that occured and providing solutions to those problems by giving explanations of the difficulties experienced by learners in the jewellery making process. The mentoring team provided direction and guidance to get good results by providing examples of gem jewellery theory and practice.

At the end of the meeting, an evaluation was held to determine whether learners could produce the product according to the standard and whether the selection of the new gemstone product design would be accepted or rejected. If the learner's results did not meet the standard or otherwise was not as expected, then the team gave time constraints and provided further guidance until the learner was able to produce standard products of good quality.

The workshop for the improvement training model was conducted as a forum with speakers from related fields (Giriwoyo Wonogiri Gemstone SME and Kota Gede Yogyakarta Silver SME). It used teaching materials and modules delivered during the learning process. Elephant stone pendants were selected for patenting.

4.3 Green Entrepreneurship Analysis to Empower Local Knowledge-Based Resources

The following table gives the regression output of the influence of green orientation, quality of learning, product innovation, and product development on performance.

Table 4.2. Regression results with dependent variable: performance

Variable	Coeff	t	Sig	
Green orientation	0.285	2.127	0.036	**
Quality of learning	0.134	1.751	0.083	*
Product innovation	-0.265	-2.188	0.031	**
Development product	0.655	5.820	0.000	***
Adj. R^2	0.542			
F-Statistic	29.973			
N	0.000***			

Where: *= significant at the 10% level
**= significant at the 5% level
***=significant at the 1% level

A questionnaire was distributed to 99 gemstone craftsmen from the Museum Souvenir Sangiran cooperative and traders in Sangiran, and the results were as follows:

1. Testing was done based on the results of the questionnaire, beginning with the fulfilment of the requirements and the classical assumption of normality. The result for the influence of entrepreneurial ability based on green entrepreneurial spirit on performance had a positive coefficient, with a significance level of 0.489. This result is logical, because when humans have a green entrepreneurial

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spirit, they use environmentally friendly products from a variety of technologies. These technologies helped the environment by turning waste saws into souvenirs.

2. The influence of environmentally friendly product development on performance was tested. The test result showed a positive coefficient of 0.532, which indicated that the development of environmentally friendly products affects performance improvement. The green entrepreneurial spirit can boost profits and improve the economic level of the community.
3. Learning quality's impact on performance was tested. The result was a positive coefficient of 0.249, indicating that the quality of learning influenced performance improvement. Training and mentoring can boost profits and improve the economic level of the community.
4. A test of the impact of product innovation on performance was run. The test found a negative and significant coefficient of 0.284, indicating that the innovation of environmentally friendly products did not affect the performance improvement. Product innovation can boost profits and improve the economic level of the community.

The test results indicated that green entrepreneurial spirit, the quality of learning, and the development of products affect business performance. This indicates that the performance of gemstone companies is not only influenced by green entrepreneurial spirit, but also by the quality of learning and the development of the product. It means that skill is an important factor because skills bring new innovations that add value.

5. CONCLUSIONS

5.1 Conclusions

The results of the research included a) the application of rock polish tools and *bur duduk*, b) SMEs completing and using new technology in the form of stone crushers tools, c) a reference book has been published under the title "Entrepreneurship Development in Small and Medium Gemstone Enterprises", d) new export opportunities such as the export of *batu manis gajah* stone to Germany, e) the copyright process for elephant stone pendants, and f) renovation of the workshop into a guest house.

The craftsmens' revenues increased due to the government's policy that civil servants should wear agate stone rings and because of the many lovers of agate stones in Indonesia. In the first year, SMEs participated in an exhibition hosted by LPPM UNS. A study comparing gemstone SMEs to silver SMEs in Yogyakarta obtained knowledge about the new design and tools needed. Implementation of green entrepreneurship supported new local wisdom at the stage of data processing. A website was made to increase exports, improving the SMEs' finances.

Qualitative indicators for the second year (2016) were reached and included a) developing potential and building the region through people's participation in the productive sectors of the economy, b) transforming people's professional involvement in the productive sectors of the economy and making human resources more dynamic and constructive, and c) developing educational programs and life skills in an effort to develop the small business sector, micro-enterprises, and informal sectors.

From observations conducted on respondents related to cultural and social community circumstances, it was identified that the right training model was a training model that fits the needs of participants, was prescriptive, was participatory, and used a facilitator approach.

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The teaching materials had to be adapted to participants' needs as revealed in a needs analysis, and to participants' abilities as revealed by the educational background of the participants. The produced training modules were commercialised into a book, the first print run of 500 pieces of which has already sold out.

5.2 Recommendations

As a follow-up to the products produced by this research in the form of training models, training modules, and reference books, the necessary next steps have been identified.

1. Diversification of businesses by expanding guest houses is important because many tourists come to Sangiran.
2. Diversification of products will increase craftsmen's income.
3. The training model and module should be validated by testing by related experts and restricted tests by potential users. The training model test will examine whether the training format enables learning and the transfer of knowledge and skill to craftspeople.
4. A feasibility test of the training model will examine whether the training module is consistent with the training participants' needs and abilities and whether it enables the participants to participate actively.
5. There may be a need to evaluate and revise the training model after the feasibility tests by relevant judges and potential users.
6. After it has been evaluated and revised, the training model can be applied to entrepreneurship training with the expectation that the affective domain will improve, the entrepreneurial spirit will develop, the psychomotor domain will improve in the form of precious stone skill, and the cognitive domain will improve in the form of improved knowledge of business management.
7. More research will be done on the extent to which precious stone based entrepreneurship training provides a high-value product and improves the performance of craftsperson's business.
8. Feedback on the outcome of training will be given to the stakeholders as an initial measure of disseminating the training model more broadly.

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