

Indonesian Female Entrepreneurs: Increasing the Development of New Products through Education

Karina Karina¹, Agus Gunawan^{1,2,3}, Jol Stoffers^{1,2,3,*}, Sandra Sunanto¹, Dewa Gede Ngurah Byomantara⁴

¹Master of Management Program, Graduate School, Parahyangan Catholic University, Indonesia

²Business Administration Department, Faculty of Political and Social Science, Parahyangan Catholic University, Indonesia

³Zuyd University of Applied Sciences, Research Centre for Employability, The Netherlands

⁴Sekolah Tinggi Pariwisata Nusa Dua Bali, Indonesia

*Corresponding author's email: [jol.stoffers \[AT\] zuyd.nl](mailto:jol.stoffers[at]zuyd.nl)

ABSTRACT--- *This study assesses the influence of education on development of new products by female entrepreneurs in Indonesia to provide a basis for policy-makers to develop educational policies. Data were collected from Global Entrepreneurship Monitor (GEM), with 5,620 male and female respondents, and interviews with female entrepreneurs, which resulted in a mixed-methods approach. Results suggest that education relates with development of new products by female entrepreneurs. This study provides a foundation for future research into other categories of Indonesian entrepreneurs. Future research should examine the need for education for female entrepreneurs, which solves economic and social problems in Indonesia.*

Keywords--- Female Entrepreneurship, New Product Development, Innovation, Education

1. INTRODUCTION

Female entrepreneurs contribute substantially to a country's economic development [3]. The Ministry of Cooperatives and SMEs reports that 23% of entrepreneurs are female, and the number of women-owned companies increases 8% annually [5]. It is important to encourage female entrepreneurship because increasing Indonesian women's economic potential is not only matters of equality and social justice, but also a way to minimise high social and economic costs in the long-term [25]. Global Entrepreneur Monitoring (GEM) categorises female entrepreneurs into early and established entrepreneurs, with the difference being the length of time an entrepreneur is involved with owning and managing a business. Early entrepreneurs have been in business for 42 months or fewer, and established entrepreneurs more than 42 months [3].

Based on survey results from an adult population that was conducted by GEM, female entrepreneurs in Indonesia are involved in four types of companies—extractive (3%), business services (3%), consumer-oriented (83%) and transforming (11%). Consumer-oriented companies relate to the needs and interests of individual consumers, rather than those of business [7]. Female entrepreneurs who focus on this type of company pay attention to ways they can offer unique products to increase competitiveness. Individual differences cause a general tendency to seek unique consumer products [16], with one example being the food and beverage industry [9]. Data from the Indonesian Central Bureau of Statistics suggest that the number of companies operating in this industry increased rapidly in 2013 at 3.3%, in comparison to 2012, during which it increased only 0.42%, resulting in a more competitive industry.

Most Indonesian female entrepreneurs prefer to run a similar business, even though competition is very high. This high-level competition can be a driver of productivity by enhancing innovation that leads to development of new products [12]. Due to competition, companies need something different to survive [21]. Therefore, policy-makers should increase the quantity and quality of female entrepreneurs. This study focuses on established female entrepreneurs who run businesses in consumer-oriented industries.

Competition, combined with rapid technological change, has made speed a critical competency for development of new products [8]. Social media such as WhatsApp, Instagram, and LINE, and online transportation services such as Go-Jek, Grab bike, JNE, and TIKI, facilitate sales in Indonesia. Contrarily, Aghion, Bechtold, Cassar and Herz [1] argue that greater competition discourages innovation. Other aspects also decrease development of new products, such as education of female entrepreneurs. Education is a precondition for innovation that leads to development of new products [27].

Therefore, this study addresses whether development of new products is influenced by level of education in female Indonesian entrepreneurs.

2. LITERATURE REVIEW

2.1 Indonesian Female Entrepreneurs

In addition to enhancing lifestyles and meeting the needs of contemporary society, entrepreneurship has grown into a distinguished career choice among women, especially in Indonesia. It offers women a chance to prevent their families from becoming extremely poor [26]. The reasons women become entrepreneurs are often due to compulsion, which coerces women because of necessity versus choice, or attraction, which occurs when women see entrepreneurship as an opportunity [4]. Another reason in Indonesia is technological change; online businesses empower women, assisting them with becoming entrepreneurs [17]. Factors that influence female entrepreneurial behaviours include honesty, hard work, and risk-taking. Risk-taking is an important characteristic for entrepreneurs because it is an integral part of the entrepreneurial process; it balances business with potential costs [5].

2.2 Consumer Oriented

Consumer-oriented companies have the single focus of ensuring consumer-centred product development [20]. Consumer-oriented companies create competitive advantages by offering rare, inimitable, or superior products [13]. For companies committed to superior customer value, innovation is an inescapable aspect of doing business because satisfying consumers requires a firm to respond to anticipated changes to customers' needs, wants, and preferences [22]. It is necessary for female entrepreneurs in such industries to possess a high degree of innovation, which refers to development of new products in this study.

2.3 Education

Consensus suggests that education is a precondition for development of new products [27; 28], reinforced by research that suggests that companies that employ educated workers have greater innovation, which leads to development of new products [2]. Knowledge and skill is one aspect that distinguishes those who are educated and those who are not is experience with interacting with businesses. Cooperation between education and business is becoming more popular, and this interaction opens access to information, technology, and communication facilities. An example is the programme University-Business Cooperation (UBC), a relationship driven by both university and business. The university is interested in applying fundamental research in practice (i.e., real-world learning), and businesses search for new products based on unique discoveries from research [10].

2.4 New Product Development

Competition, technological change, and shifting patterns of world markets force companies to invest in new product development, meaning development of original products, product improvements, product modifications, and new brands created through R&D [5]. Another factor that influences development is the educational background of owners and employees. Companies that employ educated workers have greater innovation [2, 23]. The goal of developing new products is to make profit for business survival, a requirement for success, and new product development is a source of competitive advantage [21].

3. RESEARCH DESIGN

Quantitative data used in this study came from Global Entrepreneurship Monitoring (GEM). GEM is a global study conducted by a consortium of universities, to analyse the level of entrepreneurship occurring in a wide basket of countries. Recent Indonesian GEM data are owned by Parahyangan Catholic University, as a representative of GEM in Indonesia. GEM conducts an annual survey to assess perceptions and attitudes of the adult population regarding entrepreneurship. The Indonesia GEM dataset was collected through the Adult Population Survey (APS). Adult Population Survey tracks the entrepreneurial attitudes, activity and aspirations of individuals. The sample included 5,620 males and females aged between 18 and 64 years from 23 provinces in Indonesia. Sampling followed several stages [24]. 1) The country was divided into 34 provinces. 2) Each province was then divided into regions (i.e., urban and rural) at the city level. 3) Each stratum at the city level was divided into districts. Strata (i.e., urban/rural) at the sub-district level were selected randomly. 4) Each district was divided into RT (Rukun Tetangga), the smallest community group. The team then randomly selected the sample. 5) Respondents were selected from each household at the RT level.

To understand entrepreneurship during various stages of business formation, GEM identified two categories of entrepreneurs—early-stage and established—based on the number of months a business has existed. Early-stage entrepreneurs were involved in owning and managing, alone or with others, a business in operation for 42 months or fewer (i.e., a nascent business). Established entrepreneurs were involved with owning and managing, alone or with others, a business that survived the market beyond 42 months, since 3.5 years is the approximate critical period within which a business is most likely to fail [3].

This study used data from 358 female entrepreneurs who had set up their businesses in a consumer-oriented industry and ran the business for more than 42 months. Established business ownership reflects the percentage of the population involved in running a sustainable business [3]. At the first stage, based on the data from the adult population (APS), a frequency distribution is conducted to find out the characteristics of female entrepreneurs in Indonesia. After that cross-tabulation was done to find out a relationship between categorical variables. The result is used as a basis for providing recommendation. This study also used qualitative data from interviews with three female entrepreneurs who ran a business in the food and beverage industry that have been operating for over 42 months, to further assess the relationship between female entrepreneurship and education, and cooperation between universities and Indonesian businesses. Data obtained from the interview will be validated by the triangulation method.

4. FINDINGS

Descriptive analysis shows the following profile of Indonesian female entrepreneurs.

Table 1: Profile of Indonesian Female Entrepreneurs

No.	Profiles	Categories	%
1	Education	Low education	93.0
		Highly educated	7.0
2	Role Model	Have	74.0
		No	26.0
3	Competition	Have	90.5
		No	9.5
4	New products	Yes	44.0
		No	56.0

Source: GEM, 2016

GEM categorises the education of entrepreneurs into less than primary education, primary education, junior secondary education, senior secondary education, diploma or undergraduate, and Master's/doctoral degrees. The Indonesian government has a 12-year compulsory education policy (Program Wajib Belajar 12 tahun); the minimum education of students in Indonesia is senior secondary education. Based on the policy, we categorise level of education into highly educated (i.e., more than senior secondary education) and low-educated. Most female entrepreneurs fall into the low-educated category (93%).

Much research suggests that role models are important for female entrepreneurs [14]. Data suggest that most women who become entrepreneurs and own an established business in a consumer-oriented industry have role models. Extant research accords with the conditions of female entrepreneurs in Indonesia; they have role models while setting up a business (74%). Role models provide learning, motivation, and inspiration, and help individuals define business concepts [14]. Analysis also suggests that female entrepreneurs perceive that they have competition (90.5%). GEM data suggest that for women entrepreneurs, education influences development of new products. Cross-tabulation between education of Indonesian female entrepreneurs and consumers' views on the novelty of products produced by female entrepreneurs suggests a positive relationship. Female entrepreneurs who are highly educated develop more new products (64%) in comparison to those who have low education (43%).

5. DISCUSSION

One of characteristics of consumer-oriented industries is, businesses produce more new products [16]. This statement does not apply to Indonesia. As Indonesian women build their businesses in consumer-oriented industries, they offer general products, without offering new ones (56%). One consumer-oriented business is food and beverage. To ascertain whether this condition applies in Indonesia, interviews were conducted with three female entrepreneur who have a business in the food and beverage industry. The first respondent is known as the owner of the pioneer restaurant of botram, a unique way of eating using banana leaves as a plate, with a menu of Sundanese cuisine. The second respondent is known as the owner of the cake shop that pioneered the 3D cake design. And the third respondent is known as the owner of straits-born cuisine restaurant. The number of customers interested in this menu made competitors also sell these products as well.

On the other hand, the number of competitors does not trigger Indonesian female entrepreneurs to offer new products. Based on the data, female entrepreneurs believe that many of their customers think that the products they offer are not

new or unfamiliar (56%). Most extant research suggests that competition leads entrepreneurs to innovate, in turn leading to development of new products [2]. However, conditions under which these female entrepreneurs operate accord with extant research, which suggests that high competition hampers development of new products [19]. So, why do results from previous studies not apply to research into female entrepreneurs in Indonesia? After further analysis, it was found that there is an influence of education on the tendency of female Indonesian entrepreneurs to create new (unfamiliar) and unique products.

Many extant studies suggest that education is a precondition of the development of new products [27], and this is the case with female entrepreneurs in Indonesia. Higher education motivates female entrepreneurs to develop products by creating new ones. For example, all interviewed respondents are Indonesian female entrepreneurs with a high educational background. According to interview results, in higher education, they can interact directly with the business environment. With this interaction, they gain experience and knowledge that they do not get when just attending formal classes. This is one of the reasons, why these females become entrepreneurs.

To increase the number of new products developed, the Indonesian government implemented policies and strategies to stimulate collaboration between universities and businesses, offering various funding schemes [11]. This is known as University and Business Co-operation (UBC), a relationship in flux that reflects on issues specific to the transition from an industrial to a knowledge society [15]. The advantage of cooperation between universities and businesses is expedition of new product development processes through the reduction of stages (e.g., time between product idea and introduction in the market) [10, 18].

In Indonesia, UBC focuses not only on cooperation between universities and businesses, but also between polytechnics and businesses. The degree of cooperation between universities and businesses is more than that between polytechnics and businesses because polytechnics were hesitant with using the programme [11]. Female entrepreneurs who have greater education are more innovative because they already have experience interacting with businesses.

As a top layer of hospitality education in Indonesia, STP Nusa Dua Bali implemented the UBC program. Cooperation with major hotels, such as Hilton and Hyatt, offers students the opportunity to obtain practical knowledge and experience from apprenticeships in reputable hotels. Examples of such cooperation between STP Nusa Dua Bali and hotels are classroom lectures presented by hotels' general managers, and inviting chefs from hotels to teach at STP Nusa Dua Bali.

Table 2: Form of UBC in the United States

No.	Programme
1	Cooperation in curricula
2	Investment in infrastructure
3	Involvement of business representatives in universities or polytechnics boards
4	Involvement of university representatives in company boards
5	Informal interaction
6	Mobility or placements and internship for students
7	Staff mobility
8	Knowledge sharing and transfer
9	Applied innovation and involvement of polytechnics staff and students in solving specific business problems

Source: Interviews with Staff of Ministry of Industry Indonesia, 2017

Table 2 shows a form of cooperation between universities and businesses in the United States. Based on interviews with staff members at the Ministry of Industry, Indonesia has engaged in something similar to UBC as applied in the United States, including:

- Investment in infrastructure—the Indonesian Ministry of Industry constructed miniature factories, with machines imported from Germany and small production capacities. The factories are located in several vocational schools, with the purpose of offering students real-life experiences using the machines.
- Internship programmes—as done by STP Nusa Dua Bali, students are given time to engage in internships in 5-star hotels.
- Through knowledge-sharing and transfer through teaching by practitioners, and through internships, knowledge-sharing and transfer is created for students.

Education influences interaction experiences with a business environment, which relates to cooperation between educational institutions (e.g., polytechnics and universities) and businesses. Since most female entrepreneurs have low education, it is important for the government to encourage the intensity of relationships and cooperation between polytechnics and businesses, and stimulate education among female entrepreneurs.

6. CONCLUSION AND RECOMMENDATIONS

For female entrepreneurs in Indonesia, development of products is influenced by education. One factor that influences the difference in the tendency to produce new products between each level of education is interactions with the business environment offered at the educational levels. The interaction with the business environment is generally done only in higher education [18]. Interaction and cooperation with businesses determine the pace of innovation [11]. Based on interviews, that have been conducted with the staff members of the Indonesian Ministry of Industry, cooperation between business and educational institutions takes place at a higher level. It is necessary the government is concerned with developing policies related to the implementation of UBC system in lower educational institutions as well. UBC patterns to note are universities (which in the future will be applied by polytechnics) that serve as a source of knowledge and transfer knowledge, and businesses that obtain benefits from the collaboration. The most important forms of this interaction and cooperation are knowledge-sharing and transfer, and informal interactions [15]. The Indonesian government supports collaboration using, for example, funding schemes. Since most female entrepreneurs have low education, it is necessary for the government to address the problem of a lack of development of new products. Changes to consider include:

1. Improving the role of UBC by setting conducive regulations for UBC;
2. Developing a collaboration program or cooperation with the business environment in compulsory education curricula, through the Ministry of Education (e.g., requiring seminars from business professionals, or internships);
3. Cooperation between the Indonesian Ministry of Education and the Ministry of Industry, or other ministries, to bridge education institutions and the business environment;
4. Other ministries in addition to the Ministry of Education should help universities and polytechnics interact more with the business environment, through networks and extant platforms.

Future research should explore the mapping of female entrepreneurs in terms of other types of businesses or categories of entrepreneurs. It should also test which form of UBC is most effective in Indonesia. Research into female entrepreneurs in other countries would be interesting and contribute to the current study.

5. REFERENCES

- [1] Aghion, P., Bechtold, S., Cassar, L., & Herz, H. (2014). *The Causal Effects of Competition on Innovation: Experimental Evidence* [NBER Working Paper 19987]. Cambridge (MA): National Bureau of Economic Research.
- [2] Akhmedjonov, A. R. (2010). *Education, Training, Innovation: Evidence from Transition Economies* [Dissertation]. Santa Monica (CA): Pardee Rand Graduate School.
- [3] Allen, E., Langowitz, N., Elam, A., & Dean, M. (2007). *The Global Entrepreneurship Monitor*. Wellesley (MA): Babson College, Global Entrepreneurship Monitor.
- [4] Ameu, G. J., & Adiele, K. (2012). New Product Development and Consumer Innovative Behaviour: An Empirical Validation Study. *European Journal of Business and Social Sciences*, 1(6), 97-109.
- [5] Anggadwita, G., Luturlean, B. S., Ramadani, V., & Ratten, V. (2017). Socio-Cultural Environment and Emerging Economy Entrepreneurship: Women Entrepreneurship in Indonesia. *Journal of Entrepreneurship in Emerging Economies*, 9(1), 85–96.
- [6] Bruni, A., Gherardi, S., & Poggio, B. (2004). Entrepreneur-Mentality, Gender and the Study of Women Entrepreneurs. *Journal of Organizational Change Management*, 17(3), 256–268.
- [7] Cambridge Dictionary (2017, April 14). Retrieved from <http://dictionary.cambridge.org/dictionary/english/consumer-oriented>.
- [8] Cengiz, E., Ayyildiz, H., & Kirkbir, F. (2005). *Critical Success Factors in New Product Development*. Retrieved on 11-15-2017 from <http://www.acarindex.com/dosyalar/makale/acarindex-1423871858.pdf>
- [9] Committee for Economic Development of The Conference Board (2017). *Economic Contribution of the Food and Beverage Industry*. Arlington (VA): Author.

- [10] Dan, M.-C. (2013). Why Should University and Business Cooperate?: A Discussion of Advantages and Disadvantages. *International Journal of Economic Practices and Theories*, 3(1), 67-74.
- [11] David, F., & Sijde, P. V. (2015). University-Business Co-operation in Indonesian Higher Education for Innovation. New Technology-Based Firms in the New Millennium, Volume XI. In: Groen, A., Cook, G. & van der Sijde, P. C. (eds.). *Emerald Group Publishing Limited* (pp. 187-200), Bingley, UK.
- [12] Gomellini, M. (2013). *Innovation and Competition: A Survey*. Rome, Italy: Bank of Italy, Structural Economic Analysis Department, Economic and Financial History Division.
- [13] Jalilvand, M. R. (2017). The Effect of Innovativeness and Customer-Oriented Systems on Performance in the Hotel Industry in Iran. *Journal of Science and Technology Management*, 8(1), 43–61.
- [14] Karimi, S., Biemans, H. J., Lans, T., Chizari, M., & Mulder, M. (2014). Effects of Role Models and Gender on Students' Entrepreneurial Intention. *European Journal of Training and Development*, 38(8), 694–727.
- [15] Lse, L. E. (2013). *Study on University-Business Cooperation in the US* [EAC-2011-0496]. London, UK: LSE Enterprise Limited.
- [16] Lynn, M., & Harris, J. (1997). *The Desire for Unique Consumer Products: A New Individual Differences Scale*. Ithaca, NY: Cornell University School of Hotel Administration.
- [17] Melissa, E., Hamidati, A., Saraswati, M. S., & Flor, A. (2015). The Internet and Indonesian Women Entrepreneurs: Examining the Impact of Social Media on Women Empowerment. In: Chib A., May J., & Barrantes R. (eds.). *Impact of Information Society Research in the Global South* (pp. 203-222). Springer, Singapore.
- [18] Moeliodihardji, B. Y., Soemardi, B. W., Brodjinegoro, S. S., & Hatakenaka, S. (2012). University, Industry, and Government Partnership: its Present and Future challenges id Indonesia. *Procedia-Social and Behavioral Sciences*, 307-316
- [19] Monsef, S., & Ismail, Y. K. (2012). The Impact of Open Innovation in New Product Development Process. *International Journal of Fundamental Psychology and Social Sciences*, 2(1), 7-12.
- [20] Mukerjee, K. (2013). Customer-Oriented Organizations: A Framework for Innovation. *Journal Business Strategy*, 34(3), 49-56.
- [21] Owens, J. D., & Davies, J. (2000) The Importance of a New Product Development (NPD) Process: Getting Started. Presentation at the European Conference on KM, Bled School of Management, Slovenia.
- [22] Racela, O. C. (2014). Customer Orientation, Innovation Competencies, and Firm Performance: A Proposed Conceptual Model. *Procedia—Social and Behavioral Sciences*, 148, 16–23.
- [23] Smith, M., Busi, M., Ball, P., & Meer, R., van der (2008). Factors Influencing an Organisation's Ability to Manage Innovation: A Structured Literature Review and Conceptual Model. *International Journal of Innovation Management*, 12(4), 655-676.
- [24] Soetanto, H. C. (2016, April 14). *A Medium Corporation*. Retrieved from <https://medium.com/>
- [25] Sutanto, S., Gunawan, A., Gunawan, T., & M. P. Dijk, M. P. (2016). Women Entrepreneurs: A Study of Indonesian Female Evidence and Perception for Becoming Entrepreneurs. Retrieved on 11-16-2017 from http://repository.unpar.ac.id/bitstream/handle/123456789/1543/Mklh_Sandra%20Sunanto_Women%20Entrepreneurs%20A%20Study%20of%20Indonesian-p.pdf?sequence=1&isAllowed=y
- [26] Tambunan, T. (2007). Recent Development of Women's Enterprises in Indonesia. Retrieved on 11-16-2017 from <http://www.kadin-indonesia.or.id/enm/images/dokumen/KADIN-98-2309-21112007.pdf>
- [27] Villalba, G. E. (2007). The Relationship Between Education and Innovation [EUR - Scientific and Technical Research Reports]. Geel, België: JRC European Commission.
- [28] Zakic, N., Jovanovic, A., & Stamanovic, M. (2008). External and internal factors affecting the product and business innovation. *Facta Universitatis, Economics and Organization*, 5(1), 17-29.