

Fostering Eco-Entrepreneurial Intention Among Students

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ABSTRACT

The study has the goal to adopt the environmental sustainability issues in the system of entrepreneurial learning in higher education. It constructs a relationship of entrepreneurial education and role model in predicting the eco-entrepreneurial intention among students in Jakarta. It also places the gender to be tested the distinction of perceiving this intention. 100 respondents were selected using the test of multiple regression and the different tests on gender in perceiving interest in eco-entrepreneurship. The results show a significant impact on both variables at the level of 10%. Both hypotheses are loosely tested at 10% significance. However, it captures the effect and significance of eco-entrepreneurial intention. A significant difference is also identified between men and women in perceiving intentions. Education has a higher influence with a contribution of 14.45% of the R² value of 24.20%. Aligning with TPB, entrepreneurship education encourages awareness and attitude to the eco-business while role model improves attitudes and social norms to be social pressure for environmentally business behavior. Both impact positively on the eco-entrepreneurship intention. Lastly, providing suggestions for stakeholders in fostering eco-entrepreneurial intention on students.

Keywords: *Entrepreneurial education, eco-entrepreneurial intention, gender, role model*

1. INTRODUCTION

The hope of the global community to make the earth a suitable place for human life in the future is realized through a development program called the Sustainable Development Goals (SDGs). Previously event, some agenda were held by United Nations for ensuring environmental sustainability e.g., Earth Summit in Rio de Janeiro in 1992 and 2012, United Nation Frameworks Convention on Climate Change (UNFCCC) in 1997 and 2015, Millennium Development Goals (MDGs) in 2000, and others [1]. A prior study by McEwen recalled the degradation of the global ecosystem related to the coastal, forest, grassland, and the risk of water scarcity [2]. For the moment, the recent conditions are various disasters caused by human actions against nature such as floods, landslides, moving lands, forest fires, drought, or others. This condition requires public attention to sustain and reflects in various important decisions.

However, there is one aspect that is developed to realize people's welfare through the economic sector. The role of the government as regulators and entrepreneurs as business actors is required to synchronize business decisions with environmental sustainability. Entrepreneurs are expected to be able to apply business ethics oriented to green business or be able to balance economic goals with conservation. Both are synergized in an entrepreneurial model in the form of eco-entrepreneurship with an orientation to create a market through environmental innovation [3]. To

accelerate the achievement of environmental and economic development, the conceptual and practices of eco-entrepreneurship must be educated to the entrepreneur society included in the entrepreneurial learning program. To promote environmental issues to the nascent entrepreneurs is required the involvement of educational institutions [2], although are found less awareness among students on sustainability.

In several ways, micro small medium enterprises (MSMEs) are considered to have limitations so that has not been able to practice business in an environmentally friendly manner. Therefore, students as aspirant entrepreneurs need to be fostered with literacy about eco-entrepreneurship so that one day there will be an interest in environmentally friendly business practices. Thus, from the early to run the entrepreneurial process, an entrepreneur has understood and has a sense of responsibility that in carrying out his business activities he does not neglect the welfare of the future generations. This is as conceptualized priorly by Porter and Linde noted "Environment-Competitiveness Relationship" is a strategy to build company excellence to prioritize trade-offs between economic growth and ecological sustainability [4].

In line with this commitment, entrepreneurs are trying to have a positive impact on the environment. Moreover, at least three aspects are constructed in this study in shaping the entrepreneurial intention among students. The propensity for eco-friendly business is observed through education, role model, and gender which represent an

engagement of institutions, community, and personal in responding the current environmental sustainability issues. However, some preliminary studies have not shown a significant effect between entrepreneurship education and an interest in entrepreneurship e.g., [5-6]. But the goal of intention is more in the generally entrepreneurial activities particularly in studies [7-11]. Furthermore, the same thing happened in the study of [12] that education has not shown a significant effect on eco- entrepreneurial intention.

The second consideration through role models is that a model can inspire a new lifestyle-oriented towards a green lifestyle so that it will gradually encourage interest in eco-entrepreneurship among millennials. Although previous studies have not shown the expected effect [5-6] so jointly with entrepreneurship learning at the university level, the study aims to know the gender's perspective on eco-entrepreneurial intention so that it can be supported by facilities or atmospheres under the female expectation. Besides, we want to know the development of the role of education in educating and role models in inspiring millennials towards eco-friendly entrepreneurship.

In line with gender's perspective, the study [13] generally stated that entrepreneurial intentions are similar for men and women although sometimes men are more consistent in maintaining their intentions. Conversely, the study of [14] found women entrepreneurs more motivated than eco-entrepreneurs. Specifically for entrepreneurial students in Indonesian studies identified there was no gender difference in perceiving green entrepreneurs [15] or no significant impact on eco-entrepreneurial intention [6]. However, [16] highlighted those female entrepreneurs are more likely to engage in ecological venturing while further research [17] pointed that women have a higher prevalence of entrepreneurship when the atmosphere is well conditioned to support entrepreneurship. Therefore, the aim of this research will ensure the effect of gender distinction on students' intentions on eco-business.

For this reason, there are several considerations in examining this theme. **Firstly**, aligning with the development of digital information technology where internet-based literacy is so close to millennials that knowledge related to sustainability or the environment is very easy to obtain through digital platforms. **Secondly**: climate change is increasingly erratic, which triggers natural disasters caused by natural factors or due to human actions. **Thirdly**: along with the pandemic situation which has not yet been estimated when it will end, it is hoped that it can touch humanity among students so that a sense of care for the environment grows. **Fourthly**: in line with the target of achieving the SDGs 2030 agenda, it requires participation starting from the personal, community, institutional and organizational levels so that the role of educational institutions is important in the introduction of the environmental movement in entrepreneurship studies. Referring to these collaborations, students' perceptions were tested to ascertain whether entrepreneurship education and role models were related to an interest in eco-friendly business as well as how the gender effect was in appreciating their interest in the business model.

Lastly, the goal of this study creates a suggestion for

educational institutions to emphasize more on the process of strengthening and realizing the three pillars of eco-entrepreneurship e.g., "eco-commitment, eco-innovation, and eco-opportunity" which are suitable with the "Kainrath's model" [3]. The second suggests to the government order to improve the eco-friendly atmosphere for youth entrepreneurs in Indonesia through presenting the environmentally role models or influencers in the digital platform e.g., YouTube, Instagram, Twitter, and others. Both could synergize in fostering the propensity for eco-entrepreneurship among entrepreneurial students. Furthermore, this contribution will be in line with the progress to gain the target of the number of educated entrepreneurs in Indonesia.

2. LITERATURE REVIEWS

2.1. Understanding Eco-Entrepreneurship

The term eco-entrepreneurship views entrepreneurship through the environmental side so the transformation involves an entrepreneurial process by maintaining the ecological mindset along in getting opportunities, maintaining commitment, and generating innovation. The prior definition from Kotchen defined "eco-entrepreneurial intention is the practice of starting a new business in response to an identified opportunity to earn a profit and provide a minimum negative environmental externality" [18]. Furthermore, referring to [3] mentioned that "eco-entrepreneurship is characterized by some fundamental aspects of entrepreneurial activities that are oriented less towards management systems or technical procedures and focused more on the personal initiative and skills of the entrepreneurial person or team to realize market success with environmental innovations". In aligning with the green economy, according to [19] pointed "eco-entrepreneurship emerges from as a mutual product of environment and entrepreneurship which aims to provide positive environmental outcomes when producing goods and services". In understanding the new model of economic development, UNEP defined "a green economy as one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities" [20] so that through eco-entrepreneurship as a harmonizing model between income growth with respecting to the social welfare and overcoming the ecological destructions.

2.2. Relating with the SDGs Agenda 2030

In 2000 Millennium Declaration in New York was agreed on MDGs. However, in 2015 was extended by SDGs with resulting in as many as 17 SDGs targets that will be implemented until 2030. The development of entrepreneurship arises in line with the challenges of the MDGs for the 2000-2015 period, which have eight goals including gender equality and ensuring environmental sustainability. Eco-entrepreneurship has relevance to the

three goals of SDGs such as “climate action, life below water, and life on the land” which are illustrated in the figure below.



Figure 1. Environmental pillar on the SDGs

The alignment of objectives between economic growth and environmental preservation is synchronized into a model of eco-entrepreneurship. In previous articles, this term has metamorphosed into some names including green entrepreneurship, environmental entrepreneurship, or sustainable entrepreneurship. In aligning with the progress, it is necessary to encourage students or nascent entrepreneurs to understand this model to form an interest in environmentally friendly-based entrepreneurial models.

2.3. Developing Hypothesis

Refer to Cortese cited by [2] stated that the involvement of educational institutions is important in encouraging students' knowledge, skills, and insights regarding environmental-oriented entrepreneurship. Through green education can encourage students to interest in eco-entrepreneurial activities, but study [12] did not show the significant effect between entrepreneurial educations the eco-entrepreneurial intention in two universities in Nigeria. Also, the prior study of [5] did not prove the same result among entrepreneurial students in Jakarta. However, to pursue the achievement of SDGs agenda 2030, environmental knowledge must be learned for students. It is in line with extending role education in introducing environmental education to encourage environmental behavior [21] or to reinforce the knowledge of sustainable development goals [22]. Thereby, the hypothesis is built in line with the expectations of students' growing interest in eco-entrepreneurship.

In the understanding of role models through [23] mentioned an influence of role models (e.g., peers, teachers, lecturers, family members, famous persons, or others) on the entrepreneurial intention among students. Also, [24] stated role model can influence someone to influence the individual so that there is a desire to increase the similarity or imitate the attributes carried out by the role model such as characteristics, behavior, perspective, or others. The existence of a model inspires someone according to the model that is the reference, including entrepreneurial interest [23] or entrepreneurial identity [25]. Thus the hypothesis is also built based on harmony in encouraging eco-entrepreneurial intention even though other studies show insignificant direct effects [26],[5].

Based on the study of [13] indicated a similar intention on

gender although sometimes men are more consistent in maintaining their entrepreneurial intentions. Further, [14] stated that women higher motivated as eco-entrepreneurs. However, [16] pointed that female entrepreneurs are more likely to engage in ecological venturing, whereas further study [17] pointed women have a higher prevalence of entrepreneurship when the atmosphere is well conditioned to support entrepreneurship. However, some studies in Indonesian students' have not shown gender differences in perceiving green entrepreneurs [15] or no impact toward eco-entrepreneurial intention [5]. Therefore, the hypothesis is built based on the ideal effect of encouraging students' interest in eco-entrepreneurship.

Cause of related to the student intention on eco-friendly business so the basis of analyzing of this model utilizes the theory of planned behavior (TPB). Generally, it consists of three antecedents in shaping the intention such as attitude, social norms, and perceived behavioral control. According to Bird noted the nature of entrepreneurial intention with defining as follows: “intentionality is a state of mind directing a person’s attention toward a specific object (goal) or a path to achieve something” [6]. The meaning of this goal relates to the environmental responsibility for sustaining the future when executing the business.

Furthermore, the mechanism is elaborated as follows: (1) through entrepreneurship education and environmental sustainability can increase student knowledge so that it can form a positive attitude towards the risk of environmental problems and ultimately can form intentions in eco-friendly business. (2) Role models can inspire students who impact to improve their social norm. This impact will shape the social force toward eco entrepreneurship so can form the intention among students. (3). Gender as a personal antecedent turns to relate with the attitude. Therefore, female entrepreneurs are more passionate about the eco-friendly business than males. Continuity and intensity in maintaining these aspects as an atmosphere of entrepreneurial development so that it will form perceived behavior control among students and one day will pursue their passion in eco-business. Based on these relationships, the development of some hypotheses are as follows:

- **H1:** Entrepreneurship education has a positive effect significantly on the eco-entrepreneurial intention.
- **H2:** Role models have a positive impact significantly on the eco-entrepreneurial intention
- **H3:** Related to gender, there are significant differences between female vs male students in perceiving an eco-entrepreneurial intention

3. METHODS

The stages of the research method as follow. **Firstly**, population were taken from students around in West Jakarta by using the Probability Sampling Method. The sample size consists of 100 students of Tarumanagara University and other higher educational institutions in the surrounding. The location was chosen because in this area there are many universities, making it possible to notice green business by students.

Secondly, three variables are used as predictors such as entrepreneurial education, role models, and gender for identifying the entrepreneurial intention so the next picturizing of the research model seems in **Figure 2**. The entrepreneurial intention has been measured through a Likert scale with five items adopted from [5] as the eco-entrepreneurial intention with resulting in a Cronbach's Alpha score of 0.751. Moreover, entrepreneurial education is taken from [6] with a total of 5 indicators. Previously, the items of role model were adopted from [23], then was improved by [6] in 3 items by resulting composite reliably of 0.852. It pointed to the role of parents and friends as models in introducing the passion to be an eco-entrepreneur. Further, gender is identified by dummy code [5] such as score 0 for male while 1 for female students. In determining the score of dummy inverse of the study of [5]. This assumption is contracted based on a statement [14],[16],[17] who highlighted female entrepreneurs are more likely to engage in ecological venturing or own high motivation in executing eco-friendly business.

Thirdly, the instrument is developed in an online questionnaire via google form where the measurement scale uses the ordinal in the form of Likert as well as 1 (not very agree) until 5 (strongly agrees). Validity and reliability tests are utilized to ensure the appropriateness of the instruments. The discriminant validity test used factor loading while the testing of reliability used the composite reliability and Cronbach's Alpha scores. Moreover, the gender is positioned for analyzing the difference between male and female students in perceiving their intention on

eco-entrepreneurship. For these reasons, this study used the two analysis tools such as multiple regression and the Mann-Whitney u test using the significance standard at 5-10%. This reason is that less response relatively by people to this topic, so this study assigns it to a loose significance level. The data analysis technique uses multiple regression with processing using Smart-PLS and differences test by using SPSS programs.

4. FINDINGS AND DISCUSSIONS

4.1. Respondent Profiles

This study involves 55% of female students while 45% of male students as respondents. Most of the respondents were in their twenties while the majority are from Tarumanagara University (55%). Another portion of 45% from the other institutions. Related to the owning of business: there are as many as 65% have not owned business while 21% are starting-up the early business, and 14% have run their businesses e.g., online business, fashion, food, beverage, or others. Moreover, the majority of respondents (82%) have responded to the information about eco-entrepreneurship. On contrarily, 18% of students are not clearly in understanding with the term. Therefore, nascent entrepreneurs need more literation toward eco-entrepreneurship to understand its impact on environmental sustainability in the future.

Table 1 Validity and reliability instruments

Variables	Items	Loading	Status	Reliability Scores	Status
Entrepreneurial Education	EE1	0.715	Valid	Composite: 0.888 Cronbach's α : 0.843	Reliable
	EE2	0.854	Valid		
	EE3	0.706	Valid		
	EE4	0.873	Valid		
	EE5	0.758	Valid		
Role Model	RR1	0.805	Valid	Composite: 0.870 Cronbach's α : 0.778	Reliable
	RR2	0.863	Valid		
	RR3	0.824	Valid		
Eco-Entrepreneurial Intention	EC1	0.827	Valid	Composite: 0.923 Cronbach's α : 0.895	Reliable
	EC2	0.879	Valid		
	EC3	0.773	Valid		
	EC4	0.827	Valid		
	EC5	0.888	Valid		

4.2. Testing of Validity and Reliability

Table 1 shows these results are suitable with the criteria's of reliability. Further information supports the validity values. It depicts the entire score of loading factors higher than 0.70 so that all indicators fulfill the criteria's valid. Further detection of the validity of indicators in the research model can be traced through the outer model test results in **Figure 2**.

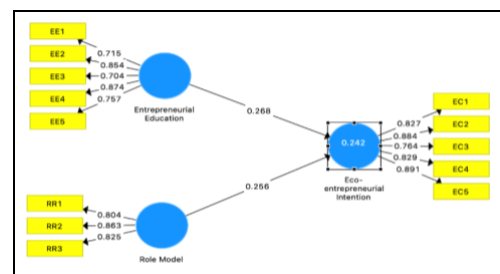


Figure 2. Testing of outer model

Based on **Figure 2** is concluded that all indicators are valid in measuring these constructs. Because there are only two independent variables so the value of R^2 is not high.

4.3. Result of Hypothesis Testing

The coefficient correlation between entrepreneurial education and intention is **0.539** with significance in 5%, meanwhile, the coefficient on the role model is **0.385** with a similar significance in 5%. Based on these scores can be utilized to calculate the contribution of independent variables in effecting the eco-entrepreneurial intention. Shown in **Table 2** the value of the original sample which is

the same as the score in **Figure 2**. The contribution of entrepreneurial education is 0.1445 which is calculated by $(0.268 \times 0.539^*)$. Whereas the contribution of the role model is 0.098 which is calculated by $(0.256 \times 0.385^*)$. Totally, both give the contribution is 0.242 which is calculated by 0.1445 plus 0.098. It is suitable with an R^2 of 24.24% or equal to 24.20%. The result shows that the contribution of education is greater than role models in encouraging the growth of student interest in eco-entrepreneurship. Innovation in education can encourage 14.45%. Although at the level of 10% this result indicates this education has been prepared for the aspiring entrepreneurs.

Table 2 Path coefficients

Path analysis	Original Sample	Sample Mean	Standard Deviation	T Statistic	P Value
Entrepreneurial Education → Eco-Entrepreneurial Intention	0.268	0.295	0.157	1.704	0.089**
Role model → Eco-Entrepreneurial Intention	0.256	0.243	0.153	1.682	0.093**

R^2 : **0.242**; R^2 adjusted: **0.227**; Q^2 : **0.159**; Goodness of fit: **0.491**
 **Significant at 10%

Table 3 Result Mann-Whitney testing

Eco-Entrepreneurial Intention				Mean Rank		Sum of Ranks	
Mann-Whitney	Wilcoxon W	Z	Asymp. Sig.	Male	Female	Male	Female
940.500	1975.500	-2.079	0.038*	43.90	55.90	1975.50	3074.50

*Significant at 5%

Table 2 depicts the path analysis on two variables towards eco-entrepreneurial intention. The path coefficient between entrepreneurial education and the intention produces a statistical p-value of 0.089 while a results t-statistic of 1.704. It shows less than 1.96, so this education does not significantly predict the intention in 5%. However, if it is compared with the t-value of 1.68, so entrepreneurial education is still able to have a significant effect at the level of 10%. It points the first hypothesis (**H1**) is accepted.

The same mechanism is considered to test the second hypothesis. The path coefficient between a role model and intention results is a statistical p-value of 0.0893 or a results t-statistic of 1.682. It shows less than 1.96, but the role model is still able to have a significant effect at the level of 10%, so the second hypothesis (**H2**) is not rejected in this framework. A standard of 10% indicates that this research uses a level of tolerance loosely in the hope of seeing developments from previous studies where the effect of these two variables is not significant on eco-entrepreneurial intention.

Although relatively low, the statistical descriptive such as original sample, mean, and standard deviation on these paths seem the similar value. This study results in the Q square is 0.159 which means it is relevant to predictive the intention of eco-entrepreneurship. The GOF index produces 0.491 indicating that the structural model has a

relatively large degree of fit and precision. Lastly, the R square results are 0.242 that signs both independent variables contribute to form the eco-entrepreneurial intention of 24.20%, but approximately 75.80% of the model is predicted by others. It is a relevant cause of involving two predictors for eco-entrepreneurial intention among students.

The third hypothesis testing is based on **Table 3**. The result indicates "asympt. sig." of 0.038 with the value of z-score of -2.079. The mean rank on the male is 43.90 while the female is 55.90. Moreover, the sum of ranks produces the different scores. Based on this result, the third hypothesis (**H3**) is recognized as significant at the level of 5%. There are found significant differences between female vs male students in perceiving eco-entrepreneurial intention. The number of female is 55% while 45% from male students.

4.4. Discussions

Although only at a tolerance level of 10%, the results show a significant effect on entrepreneurship education and role models in building student interest in environmental sustainability-oriented business models. Compared to previous studies, this result is very possible because it is in line with the era of sustainable development and the growing awareness of the environment among millennials. Also, in pandemic conditions and natural disasters, it is

very possible to stimulate feelings so that awareness of the environment is awakened. Suitable with [9], the Indonesian government has targeted approximately "five million new entrepreneurs until 2025" which has been projected since 2013. Hence, many projects have been held to support a student to be an entrepreneur. Aligned with this program and synergizing with sustainable development, the university can foster the entrepreneurial learning program to adopt both conditions to be addressed in the green business model through improving personal and social skills with requiring for starting an eco-business and gathering resources such as financial, technology, supplies and other which inlining with an eco-friendly relationship. Besides, students have been informed of the concept of sustainability knowledge and how to network with the eco-friendly supply chain. This progress can overcome the indicator of EE3 and EE1.

For this reason, it needs to be encouraged through eco-entrepreneurship learning, especially how to identify opportunities and innovations to commercialize its products. By organizing seminars, it can bring eco-entrepreneurs in Indonesia to share in raising awareness of the environment and social communities as part of their business excellence. The seminar can conduct public lectures, guest lecturers, by inviting academics, practitioners, and alumni in synchronizing education with sustainable business practices. The resource persons can motivate and inspire young eco-entrepreneurs to be more interested in eco-business. These reasons can be utilized to foster the indicator of role model specifically RR1.

Moreover, Indonesia as a country rich in ethnicity and culture is a resource to be developed into an eco-business based on local wisdom. As a starting point, it can be explored from the community's cultural heritage such as local food, arts and crafts, traditional houses, local food sources, regional clothing/fabrics, local traditions, and others. In addition to natural conditions in Indonesia that have not been reached by electricity so green energy technology can be developed to provide electrical energy for remote communities. Therefore, these odds can be improved to encourage students in starting of eco-business. It is used to power the student intention or facilitate the highest validity score in EC5.

Further, a variety of cultural wisdom can be empowered to seize opportunities so that government can encourage and direct influencers as role models related to environmental sustainability, green behavior, and eco-friendly business for millennials and youth entrepreneurs. Advances in information technology can be used to encourage the role of influencers to inspire green behavior among the community so that they can grow a green market for eco-friendly based goods or services. Advances in information technology can be used for promotion or to encourage markets to improve community welfare.

Examined from the modeling aspect, understanding of role models can be traced from the study of [26-27]. These studies have shown an indirect impact of role models on entrepreneurial intention. Those studies place the direct effect of a role model on the antecedents of TPB (attitude, social norms, and perceived behavior control). Related to

gender, it was a moderating variable for linking the attitude, and social norms to the intention. Although these results can be analogized that females tend to have a stronger environment attitude [28], higher motivation in executing eco-friendly business [14], more likely to engage in ecological venturing [16-17].

The rising of ecopreneurship came from this reason. Based on [29] eco-entrepreneurship combines three components as environmental, economic, and social sustainability in a holistic way so that the logic of thinking about ecopreneurs tends to be different from the thinking of entrepreneurs who are oriented towards conventional activities. Thus, the motivational aspect is also different from those in general entrepreneur, for example [30] noted green value as an aspect that motivates ecopreneurs. By the OECD, green entrepreneurship is related to "technology used for production in any sector of the economy" or related to specific outputs [29]. The goal of establishing a venture or enterprise serves as a vehicle or as a tool for realizing the idea of their eco-business.

However, in its implementation, there are many obstacles faced by students/nascent entrepreneurs. For beginners, it may be difficult to stabilize a commitment to profit and nature simultaneously. One example is when the use of plastic packaging is cheaper, you have to think twice if you have to use packaging that is more environmentally friendly but is more expensive or takes longer to get it. Second, it is relatively difficult to ensure that the supply chain is also green based. For example, when running an organic food product business, it must be ensured that the raw materials, processes, and packaging are carried out on an organic basis or reduction of environmental damage.

Another obstacle is that developing creativity is not easy, making it difficult to increase market creation. When a product innovation reaches a boom then is emulated by other entrepreneurs, so it is relatively difficult to maintain innovations sustainably. Education to the potential market and consumer must be carried out in line with education for entrepreneurs. Hence, the commercialization process of market opportunity is created through the community. The task of a role model is to build education on both parties so that awareness of environmental sustainability is formed.

Related to TPB, involving variables in encouraging the intention of eco-entrepreneurship as follows: (1) education increases knowledge and awareness so can form a positive attitude towards eco-business. (2) Role models (family and friends) foster attitudes and social norms that will become social pressures to the green business behavior. It inspires students to create a state of mind inlining with an eco-business model.

Through the improvement and effectiveness of education and the role of influencers will increasingly shape perceived behavior control. Thus, it will be increasingly interesting that someday there will be a business-oriented towards eco-entrepreneurship. Suppose that interest in this sector can synergize with the government's efforts to create 5 million educated entrepreneurs in Indonesia by 2025. It is almost equivalent to 2% of Indonesia's population so that if it is targeted 2% from 5 million per year from 2025 until 2030 there are at least 500.000 young

eco-entrepreneurs will be born. Moreover, statistically, there are many women so that women's passions can be fostered in the economic field. This improvement will align with the target of SDGs in 2030 in encouraging the empowerment of women in economic development as well as being able to be more appreciate the environment.

5. CONCLUSION

The results prove that there is a significant effect on entrepreneurship education and role models at the 10% level. Although using a loose tolerance level, these results indicate an improvement over previous studies. The test results also show a significant difference between female and male students in owning an intention of eco-entrepreneurship so that stakeholders can provide facilities or maintain an atmosphere that is suitable or more easily handled by women. Even though the study generates an R^2 of 24.20%, entrepreneurship education contributes 14.45% to form intention. In line with entrepreneurship learning, it needs education such as introduction to the concept of eco-entrepreneurship and driving factors in the model, preparing personal skills to build green ventures and social skills in building community collaboration to the protégés, and providing assistance for start-ups or the newcomers. Therefore, it can suppress doubts or foster self-confidence among students in running a green business.

Likewise, the role models are in line with government programs in encouraging entrepreneurship. Through social media, the role influencers should be directed to inspire the community regarding the issues related to sustainable development, environmental sustainability, green behavior, and eco-business so that it will increasingly attract millennial interest in the eco-business. This study only involves two predictors and places the perception of gender in the context of differences between males and females in understanding eco-entrepreneurship. Therefore, further study can place entrepreneurial passion as a factor in understanding eco-entrepreneurial intention among students in the big cities in Indonesia. This passion is needed in ensuring the sustainability of entrepreneurial activities so the nascent entrepreneurs will be more interested in eco-business in the future.

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REFERENCES

- [1] K. Nuringsih, I. Prasodjo, M.N. Nuryasman. "Ensuring Local Wisdom Environmental Sustainability through Sustainable Entrepreneurial Development: A Conceptual Framework for Kulonprogo, Yogyakarta", *Advances in Social Science, Education and Humanities Research*, vol. 439, 2020, pp. 182-187.
- [2] T. McEwen. "Ecopreneurship as a solution to environmental problems: implications for college level entrepreneurship education", *International Journal of Academic Research in Business and Social Sciences*, May, vol. 3(5), 2013, pp. 264-288.
- [3] K. Chopra. "Ecopreneurship: Is it a viable business model?", *AEIJMR*, vol 2(3), 2014, pp. 1-6.
- [4] M.E. Porter, C. van der Linde. "Toward a new conception of the environment-competitiveness relationship", *Journal of Economic Perspectives*, vol. 9(4), 1995, pp. 97-118.
- [5] K. Nuringsih, I. Puspitowati. "Determinants of eco entrepreneurial intention among students: Study in the entrepreneurial education practices", *Advanced Science Letters*, 23(8), 2017, pp. 7281-7284. DOI: 10.1166/asl.2017.9351.
- [6] K. Nuringsih, M.N. Nuryasman, I. Prasodjo, R. Amelinda. "Sustainable entrepreneurial intention: the perceived of triple bottom line among female students", *Jurnal Manajemen*, Vol. XXIII(02), June, 2019, pp. 168-190. DOI: <http://dx.doi.org/10.24912/jm.v23i2.472>.
- [7] S. Indarti. "The effects of education and training, management supervision on development of entrepreneurship attitude and growth of small and micro enterprise", *International Journal of Organizational Analysis*, vol. ahead-of-print no. ahead-of-print. DOI: <https://doi.org/10.1108/IJOA-09-2019-1890>.
- [8] D. Maresch, R. Harms, N. Kailer, B. W. Wurm. "The impact of entrepreneurship education on the entrepreneurial intention of students in science and engineering versus business studies university programs", *Technological Forecasting and Social Change*, vol. 104, March, 2016, pp. 172-179. DOI: <https://doi.org/10.1016/j.techfore.2015.11.006>.
- [9] Y. Kaijun, P.I. Sholihah. "A comparative study of the Indonesia and Chinese educative system concerning the dominant incentive to entrepreneurial spirit (desire for a new venturing) of business school students", *Journal of Innovation and Entrepreneurship*, 2015, pp. 1-16. DOI: 10.1186/s13731-014-0014-0.
- [10] P. Gelard, K. E. Saleh. "Impact of some contextual factors on entrepreneurial intention of university students", *African Journal of Business Management*,

vol. 5 (26), October, 2011, pp. 10707-10717. DOI: 10.5897/AJBM10.891.

[11] D. Turker, S.S. Selcuk. "Which factors affect entrepreneurial intention of university students?", *Journal of European Industrial Training*, vol. 33 (2), 2009, pp. 142-159. DOI 10.1108/03090590910939049.

[12] M. B. Abina, I. W. Oyerin, S. O. Onikosi-Alliyu. "Determinants of eco entrepreneurial intention among students: a case study of university students in Ilorin and Maleté". *Ethiopian Journal of Environmental Studies & Management*, 8(1), 2015, pp. 107-112. DOI: <http://dx.doi.org/10.4314/ejesm.v8i1.10>.

[13] F. J. Santos, M.A. Roomi, F. Liñán. "About gender differences and the social environment in the Development of Entrepreneurial Intentions", *Journal of Small Business Management*, vol. 54, Issue 1, 2016. pp. 49-66. DOI: <https://doi.org/10.1111/jsbm.12129>.

[14] A. Bhatnagar, D.Y.P. Vidyapeeth, B.R. Bharwaj, S. Gandhi. "Women ecopreneurship-a case study from emerging country", *Greener Journal of Business and management Studies*, vol. 3(2), 2013, pp. 91-98.

[15] C. Sudyasjayanti, "The green behavior differences of green entrepreneur intentions among male and female students", *International Journal of Academic Research in Business and Social Sciences*, 7(12), 2018, pp. 1326-1335. DOI: 10.6007/IJARBSS/v7-i12/3786.

[16] D.M. Hechavarría. "Mother nature's son? The impact of gender socialization and culture on environmental venturing", *International Journal of Gender and Entrepreneurship*, vol. 8(2), 2016 pp. 137-172. DOI 10.1108/IJGE-10-2015-0038.

[17] D.M. Hechavarría, A.E. Ingram. "Entrepreneurial ecosystem conditions and gendered national-level entrepreneurial activity: a 14-year panel study of GEM", *Small Business Economics*, Springer, vol. 53(2), August, 2019, pp. 431- 458.

[18] M. J. Kotchen. *Advances in the study of entrepreneurship innovation and economic growth*, Emerald Group Publishing Limited, 2009.

[19] Y. D. Uslu, Y. Hancıoğlu, E. Demir. "Applicability to green entrepreneurship in Turkey: A situation analysis". *Procedia-Social and Behavioral Sciences*, 195, 2015, pp. 1238-1245. DOI: 10.1016/j.sbspro.2015.06.266.

[20] UNEP. "Towards a Green Economy Pathways to Sustainable Development and Poverty Eradication: A Synthesis for Policy Makers", *United Nations*

Environment Programme (UNEP), Edited by A. Steiner. Available at: www.unep.org/greeneconomy, 2011

[21] N. Roczen, F.G. Kaiser, F.X. Bogner, M. Wilson. "A competence model for environmental education", *Environment and Behavior*, 2013, pp.1-21. DOI: 10.1177/0013916513492416.

[22] C. Bangay. "Protecting the future: the role of school education in sustainable development—an Indian case study", *International Journal of Development Education and Global Learning*, vol. 8(1), 2016, pp. 5-19. 10.18546/IJDEGL.8.1.02.

[23] J. Kennedy, J. Drennan, P. Renfrow, B. Watson. "The influence of role models on students' entrepreneurial intentions", *Queensland Review*, 10(1). 2003, pp. 37-52.

[24] D.E. Gibson. (2004). "Role models in career development: New directions for theory and research". *Journal of Vocational Behavior*, 65, 2004, 134-156. DOI: 10.1016/S0001-8791(03)00051-4.

[25] T.C. Efrata, Maichal. "Role model and entrepreneurial performance: the role of entrepreneurial identity and self-efficacy as intervening variable", *Journal of Applied Management*, vol. 16(1), March, 2018, pp. 27-34. DOI: <http://dx.doi.org/10.21776/ub.jam.2018.016.01.04>.

[26] S. Karimi, H.J.A. Biemans, T. Lans, M. Chizari, M. Mulder, K. N. Mahdei. "Understanding role models and gender influences on entrepreneurial intentions among college students", *Social and Behavioral Sciences*, 93, 2013, pp. 204-214. DOI: 10.1016/j.sbspro.2013.09.179.

[27] S. Karimi, H.J.A. Biemans Harm, T. Lans, M. Chizari, M. Mulder. "Effects of role models and gender on students' entrepreneurial intentions", *European Journal of Training and Development*, vol. 38(8), 2014, pp. 1-34. DOI: 10.1108/EJTD-03-2013-0036.

[28] P. Braun. "Going green: women entrepreneurs and the environment", *International Journal of Gender and Entrepreneurship*, vol. 2(3), 2010, pp. 245-259. DOI: 10.1108/17566261011079233.

[29] OECD. "Measuring Green Entrepreneurship", in *Entrepreneurship at a Glance 2011*, OECD Publishing. <http://dx.doi.org/10.1787/9789264097711-4-en>, 2011.

[30] J. Kirkwood, S. Walton. "What motivates ecopreneurs to start business?", *International Journal of Entrepreneurial Behavior and Research*, vol. 16(3), 2010, pp. 204-228. DOI: 10.1108/13552551011042799.