





The Moderating Effect of Entrepreneurial Culture on Entrepreneurial University Relationships with the Promotion of Innovation Mediated by Sustainability Development Goals

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Abstract. This research aims to obtain relationship solutions between entrepreneurial universities (EU) in increasing the promotion of innovation (IP) following plans to implement sustainability development goals (SDG) in an entrepreneurial culture (EC) environment in tertiary institutions. This research employed quantitative methods with secondary data using SPSS tools and the Hayes process model to measure the moderating effect of entrepreneurial culture on efforts to increase the promotion of innovation in higher education. The findings of this research revealed that entrepreneurial culture in universities significantly moderated the relationship between entrepreneurial universities and the promotion of innovation. To increase the impact of initiatives taken by entrepreneurial universities in increasing the promotion of innovation, entrepreneurial culture must be maintained and enhanced as best as possible. The moderating effect of entrepreneurial culture is a novelty in order to increase the promotion of innovation in universities that implement sustainability development goals.

Keywords: Entrepreneurial Culture, Entrepreneurial University, Higher Education, Promotion Innovation, Sustainability Development Goals.

1 INTRODUCTION

Critics have pointed out flaws in the concept of the Entrepreneurial University's vision, particularly in its flawed approach to comparison. Furthermore, there are concerns that embracing entrepreneurial practices has not fulfilled expectations, as universities have not necessarily become more financially successful. This approach has also raised concerns about the potential negative impacts on the sharing of scientific knowledge and access to it.

Previous research conducted by Astuty, E. (2023) showed that there was a very significant influence by EU activities on the promotion of innovation, SDG (SDG_HE) activities on IP, and SDG on EC (ISEC) [1]. In addition, there was also a significant

influence from EU activities on EC (ISEC) but not significant for EC activities (ISEC) on IP. Astuty, E. uses Innovativeness Sustainable Entrepreneurial Culture (ISEC) rather than Entrepreneurial Culture (EC) [1].

This study has similarities empirically, but there are differences in terms of hypotheses. This hypothesis can be proven to have strong significance so as to produce a new contribution to science. This research has a novelty in research models and hypotheses.

2 METHODS

The research model proposed in this study was based on literature studies related to the Entrepreneurial University (EU), Entrepreneurial Culture (EC), Sustainable Development Goals (SDG), and Promotion of Innovation (IP) variables. Starting with studying the characteristics of each variable, and then submitting hypotheses related to the relationship between variables in order to obtain new solutions for the research gaps that have been described previously.

The research question proposed in this study is how the EC moderating effect on the influence of EU activities on IP mediated by SDG activities is. This arises because there is an insignificant value of the influence of EC on IP. Therefore, four research hypotheses are also proposed which are additional hypotheses to previous studies:

- H1: EC moderates EU influence on IP
- H2: The EC moderates the influence of the EU on the SDGs
- H3: EC moderates the effect of SDG on IP
- H4: SDG mediates EU influence on IP

The data source for this study is derived from Astuty E.'s work in 2023. The research was conducted at 11 higher education (HE) institutions in Indonesia equipped with scientific techno parks (STP), as well as 17 HE institutions without STP [1]. The data collection process involved a purposeful sampling technique. Notably, some of the HE campuses with STPs in Indonesia are recognized for their notable achievements in innovation. To ensure the reliability of the findings, HE institutions without STP were also considered.

A total of 300 faculty members from 28 HE institutions participated in the study. Data collection took place from June to September 2022, facilitated through surveys using an online questionnaire created on Google Forms. The questionnaire was distributed through various official university platforms, including institution email, the institution's Microsoft 365 SharePoint, Microsoft Teams groups, Telegram chat groups, and WhatsApp groups, by providing URL links. Faculty members served as the primary unit of analysis in this research. The questionnaires in the Mendeley collection assessed four factors: entrepreneurial universities, SDG-focused higher education, sustainable entrepreneurial cultures, and innovation promotion.

The research approach used is a quantitative method that uses statistical analysis and SPSS as a tool to analyze the Hayes process model number 59. In Figure 1, it can be seen that the relationship between EU and IP is mediated by SDG and moderated by EC/ISEC. This model was proposed because the SDG mediation function is appropriate

and is indicated by a very high significant path coefficient. However, the effect of EC on IP is less significant. This model is expected to be a new solution for the development of innovation promotion in higher education.

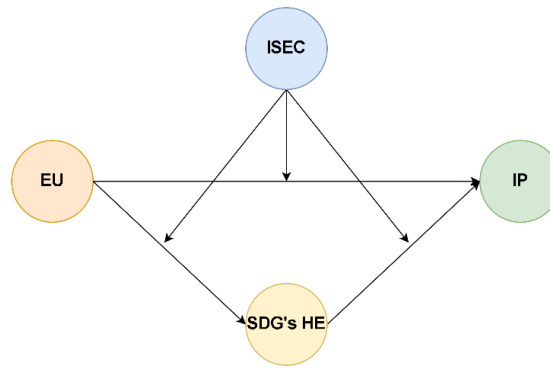


Fig. 1. The Moderation Effects Research Model of Entrepreneurial Culture (EC)

3 RESULTS AND DISCUSSION

The measurement model in Figure 2 uses a sample size of 300. The results of the normality test using Mardia's multivariate kurtosis with a value of 49,087 indicate abnormal data used (>21,28). In addition, the outlier measurement uses the Mahalanobis distance (d2) statistic with a value of 129,792 indicating an outlier because it is far above the standard upper limit (54,052). Multicollinearity measurement uses the condition number which results in 117,936, meaning that the data used does not contain multicollinearity because it is still below the limit of 1000 [2]. Due to the non-normality of the data, further estimation and parameter testing used a bootstrap approach with a sample size of 5000.

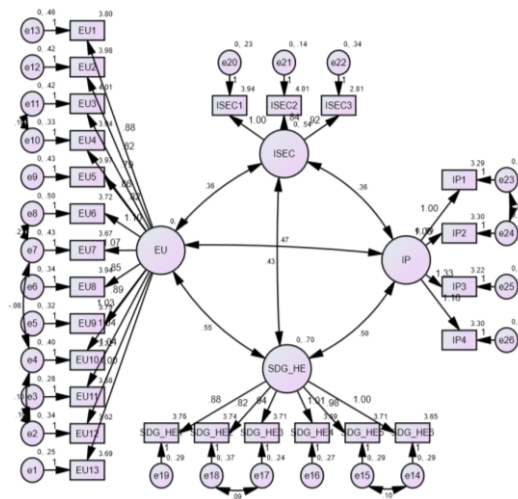


Fig. 2. Measurement Model

The influence of the EU on SDG has a very large value with a path coefficient of 0.505 categorized as very significant (H4 is accepted), while EC/ISEC and EUxISEC are not significant (H2 is rejected). This means that the EC has no moderating effect on the relationship between the EU and the SDGs.

Figure 3 shows that the higher the EC/ISEC, the stronger the influence of the EU on IP with the greater the slope of EU to IP. Figure 4 shows that the higher the level of EC/ISEC, the greater the effect of SDG on IP, but the slope of SDG on IP is increasingly gentle. This means that in high EC level conditions, the EU's direct influence on IP is stronger than the EU's indirect influence on IP which is mediated by SDG.

Entrepreneurial Culture (EC)/Innovativeness Sustainable Entrepreneurial Culture (ISEC) has a significant moderating effect on the effect of Entrepreneurial University (EU) activities on Innovation Promotion (IP). This is a solution to the problems found in this study.

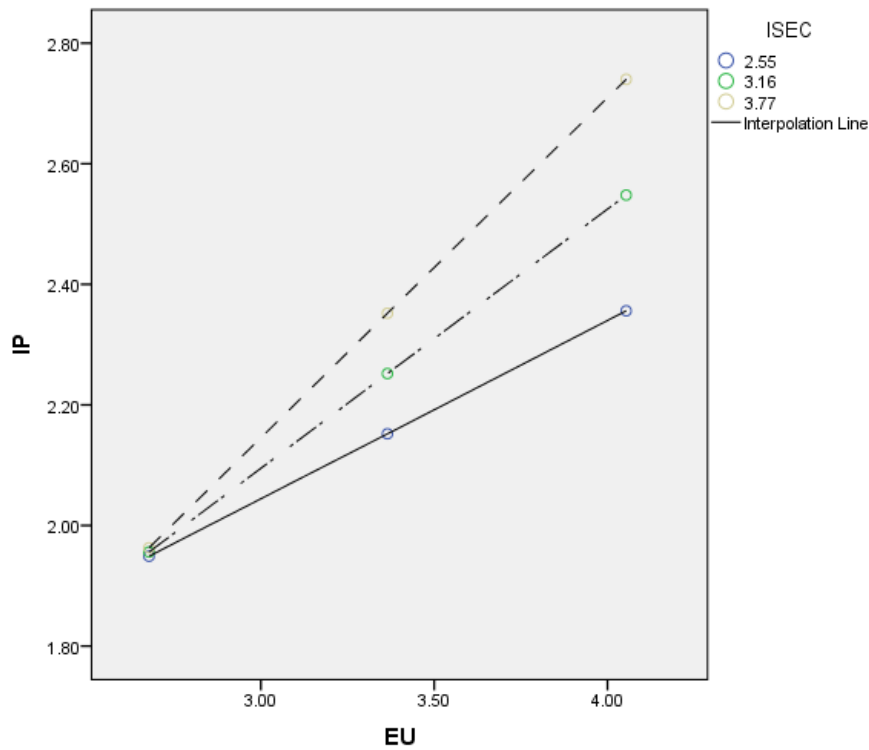


Fig. 3. Moderation Effect of ISEC to Relationship Between EU and IP

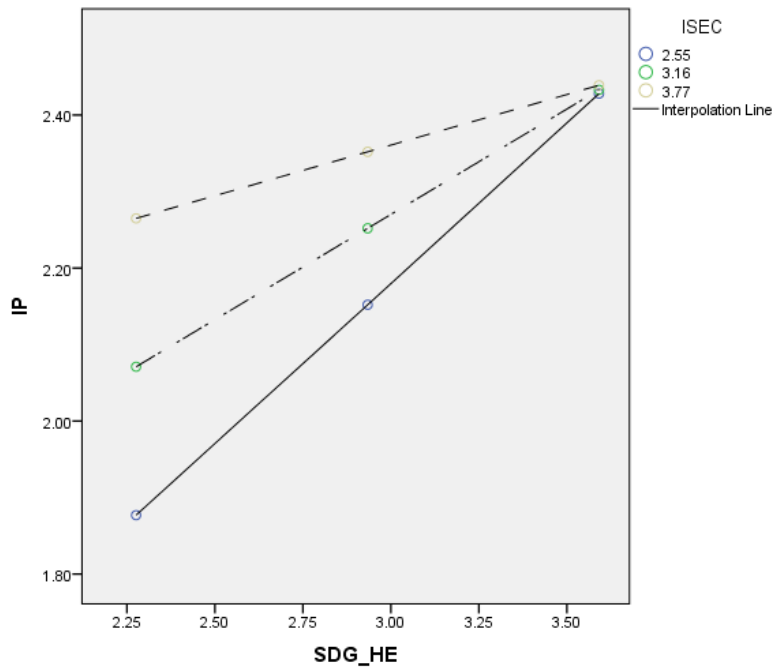


Fig. 4. Moderation Effect of ISEC to the Relationship between SDG_HE and IP

The entrepreneurial culture that exists in a tertiary institution deserves to be maintained in order to increase the promotion of innovation. This culture is not automatically formed in the Higher Education environment, it even requires a process to direct or foster it. Several forms of implementation of increased promotion of innovation at entrepreneurial universities are described in some of the results of previous studies below.

Universities, as well as science and technology parks (STPs), along with the businesses operating within STPs, actively contribute to the promotion and continuation of a learning environment that supports entrepreneurship. Numerous initiatives and programs have been established to enhance the collaboration between universities and industries, facilitate the growth of small and medium-sized enterprises (SMEs), and, most importantly, encourage entrepreneurial best practices [3].

In research by Borhani et al. in 2020, the process of transitioning a traditional university into an entrepreneurial one is depicted as longitudinal, necessitating research into longitudinal structures alongside traditional cross-sectional studies. Different data collection methods are required to evaluate the university's entrepreneurship programs and readiness for such a transformation. Quantitative and qualitative hybrid simulations are employed to assess the proposed systems for modeling this transformation and evaluating readiness [4].

4 CONCLUSIONS

Entrepreneurial Culture (EC/ISEC) is able to moderate the direct influence of Entrepreneurial University (EU) activities on the Promotion of Innovation (IP) more strongly than moderating the indirect effect of EU activities on IP. Thus, Entrepreneurial Culture needs to be maintained or improved so that the promotion of innovation can be carried out more effectively.

Efforts to increase the promotion of higher education innovation can be realized by maintaining and developing an entrepreneurial culture in line with the development of entrepreneurial university activities and in line with the implementation of sustainable development goals programs.

5 ACKNOWLEDGMENT

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