

## Entrepreneurship Modeling in Higher Education Institutions: An Explanatory Study

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### ABSTRACT

This objective of this study is to determine the practices of corporate entrepreneurship in higher education institutions, particularly on the level of *middle managers* (vice deans, head of departments, and head of programs). Four quantitatively involved variables in the corporate entrepreneurship model are organization and environment as the dependent variables, entrepreneurial orientation as moderating variable, and public value orientation as the independent variable. A total of 146 respondents from various universities (private or public) in Indonesia participated in this study. Three hypotheses were analyzed using a Structural Equation Model (SEM), and all hypotheses were validated. Results show that organization and environment significantly affect entrepreneurial orientation, wherein the effect of the organization is larger than the environment. This study confirms that public value is strongly affected by entrepreneurial orientation. In particular, the entrepreneurial behavior of middle manager on the higher education institution level can support departments/programs to become an innovative, proactive, and risk-taking institution to seek opportunities for success. For future studies, similar higher education institutions are suggested to be grouped to build an appropriate corporate entrepreneurship model.

Keywords: Corporate Entrepreneurship, Entrepreneurial Orientation, Environment, Higher Education, Organization.

## 1. INTRODUCTION

Higher education institutions in the public sector are frequently doubted by various parties in implementing entrepreneurial orientation. According to Kirby (2006: 599), “public sector often faces sort of barriers to entrepreneurial activity in the private sector.” Many existing public universities still maintain the status quo given their fears of failure. A traditional box that is still adopted by public sectors that are in the “*comfortable zone*” is unsuitable with the implementation of entrepreneurial aspects that constantly attempt to maximize opportunity optimally through innovative, risk-taking, and proactive means. Two experts (Zhou, 2008 and Clark, 2004) strengthened the argumentation by Kirby by describing the following several reasons: a) hierarchical structure, b) impersonal relationships, c) limited entrepreneurial talents, d) strict supervision to comply with procedures and regulations frequently set by government, and e) inadequate compensation methods.

This condition results in higher education institutions to still face traditional problems that are different from institutions/organizations in the private sector. Furthermore, Wood

(2008) explained that "... most academics see their role as teachers and researchers and not as entrepreneurs, and many university managers are concerned about the likely negative impact on their institution's research performance if their leading academics become involved in entrepreneurial activity.." This issue has been causing complex difficulties and issues that remain unsolved until today. By contrast, several experts (Zhou, 2008) confirmed that entrepreneurship in higher education institutions does not constantly cause commercialization among others by conducting activities, such as serving as a support agency for developing structural equation models (SMEs) and providing scientific support to public issues by providing legal and expert assistance (professional consultancy).

Various obstacles are faced by higher education institutions to establish corporate entrepreneurship. According to Zhou (2008), several remaining gaps include 1) universities with insufficient resources and research results that can provide advantageous knowledge for society, and 2) collaborations between universities and industries remain limited in solving problems regarding technological issues in corporations. Consequently, most of the research results are difficult to be transferred and can only be applied to industries, particularly at low-mid level. Several universities in advanced countries (e.g., the United Kingdom and the United States of America) have exerted considerable efforts to create an *entrepreneurial university* by focusing on the following important aspects: a) building relationship with business communities and creating *partnership* to develop an innovation center, b) encouraging *entrepreneurship* learning, and c) funding teaching staff to conduct quality studies that can be applied to the business world.

In Indonesia, universities should feel challenged to implement entrepreneurship to provide beneficial advantages for the business world and community. Academic work cannot be underestimated in which university faculty and study programs can be categorized as a corporate cooperation. Principally, its management can be implemented in corporations. According to Wood. (2008), "academics are perhaps more similar to entrepreneurs than might be first expected. Where they differ most is in their propensity to take risks, suggesting the need to create a secure environment in which is perceived to be minimized." Specifically, academicians may be equated as entrepreneurs in which the main emphasis lies in creating things that benefit the environment and society.

For certain people, higher education institutions are still considered a sturdy and dashing ivory tower but optimal in directly influencing business development and the surrounding community. Most people believe that higher education institutions in Indonesia still cannot implement their goals to achieve optimal improvement in the welfare of the society. This condition is marked by the quality of graduates who are unprepared to enter the job market and research results that are unqualified to create innovation (Intan in Kompas, January 19, 2016). An important role of Indonesian universities to implement research results that can be used by the society/business remains minimal. Indonesian universities have published approximately 5,600 studies internationally in 2015 (Kompas, January 2016). This number remains minimal considering that Indonesia has over 4,000 universities. In addition, the role of higher education in Indonesia as an innovation agent remains limited. Universities must be encouraged to improve their research to generate innovation for the progress and prosperity of the nation while evolving into an entrepreneurial university.

The advantage of becoming an entrepreneurial university is its capacity to build public value. Public value is value for the public, thereby suggesting that the presence of a university can be beneficial for the community. Wood et al. (2008) stated that "public value reflects an organization's department objective to create value in certain way." Higher

education institutions as a public organization should implicitly have a high public value orientation. The creation of public value should be supported by an organization with an entrepreneurial orientation. Entrepreneurial orientation is a strategic orientation that reflects innovation, proactive mindset, and quality on the courage of risk-taking; such positioning is genuinely important for company growth and performance (Fairoz, 2010). Furthermore, Chen et al. (2011) contended that entrepreneurial orientation relates to entrepreneurial processes, whereas entrepreneurial orientation results from the change in old business practice stereotype and the building of new products and innovations that are patterned on the courage to take risks as an economic behavior. To support the economic growth in Indonesia, partnerships are required among universities, industries, and the government. This university–industry–government partnership is called triple helix. In Indonesia, this partnership remains limited given an unsupportive environment and limited capacity (Bambang, 2009). Thus, universities must implement entrepreneurial orientation to establish a good partnership.

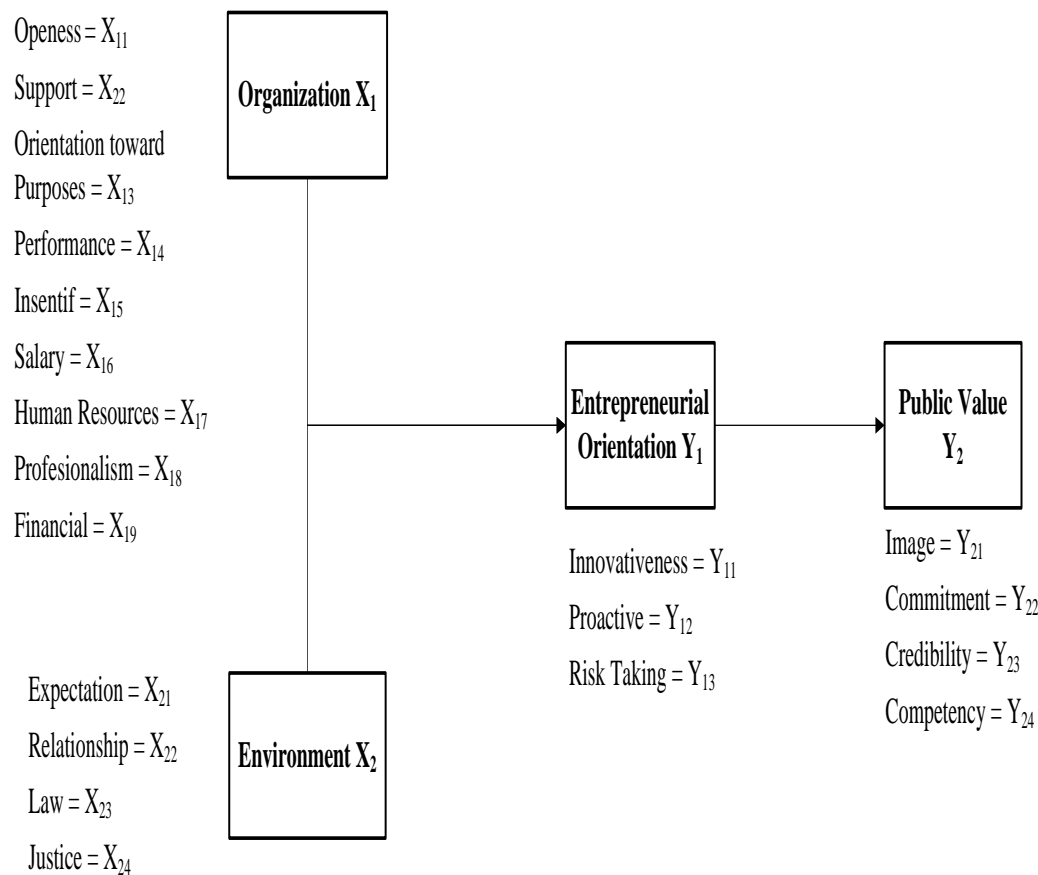
An organization must be capable of encouraging the transformation of entrepreneurship-oriented universities in the form of managerial support, performance-based reward, resource availability, and time availability. Several experts (Wood et al, 2008; Sykes, 1992) highlighted that support from an institution in terms of funding, adequate compensation system, and managerial support can encourage the entrepreneurial behavior of individuals in an organization. In addition to organizations, a rapidly changing environmental factor marked by technological change, competition, and growth of industry can become a strong driving factor in creating entrepreneurial behavior. In Indonesia, this phenomenon remains prominent because educational institutions are assumed to have existing limitations in resources and management (Bambang, 2009). Apparently, educational institutions are slow in responding to environmental changes, thereby preventing them from maximizing opportunities (Siswo, 2012).

## 2. ENTREPRENEURSHIP MODELING

The following modeling is proposed (Figure 1) to identify the extent to which universities can implement entrepreneurship. The modeling utilizes two independent variables, namely, organization and environment. Intervening variables include entrepreneurial and public value orientations as dependent variables. This modeling is developed to obtain facts on the field on the strategies that middle-manager-level leadership in universities at every faculty (programs and departments) can use to build entrepreneurial-oriented public value orientation. Therefore, optimally maximizing opportunities and possibly encouraging programs/departments to evolve into educational institutions that are innovative, proactive, and risk-taking are expected.

The encouragement of entrepreneurial behavior among middle managers in universities must be supported by a well-managed organization. An organization is well-managed if they are supported by various aspects, such as management support, adequate rewards, and resources availability. Management support is an important determinant to increase entrepreneurial behavior that can encourage the emergence of innovative ideas, acceptance of employers' ideas, and support for small projects. Moreover, reward is a form of appreciation for the resulting performance and can encourage the finishing of challenging tasks. Resource availability can also become an important determinant and becomes the key to build entrepreneurial behaviors in higher education institutions. In addition to organizations, a conducive university environment can also encourage entrepreneurial

behavior. Two important determinants, namely, multitude expectation and legal mandate, can encourage entrepreneurial behavior.



**Figure 1: An Initial Operational Framework and Hypotheses**

The following three hypotheses are proposed on the basis of this modeling: 1) organizational influence toward entrepreneurial orientation; 2) environmental influence on entrepreneurial orientation; and 3) the effect of entrepreneurial orientation on public value. The hypotheses are based on the research result conducted by several experts, including Diefenbach, 2011; Fairoz, 2010; Lee & Lim, 2009; Meynhardt & Metelmann, 2009; Hornsby, 2009; Wood, 2008; Kuratko, 2005; Currie & Procter, 2005; Floyd & Lane, 2000; Lumpkin & Dess, 2001 and Miller, 1984.

### 3. RESEARCH DESIGN AND METHODOLOGY

Verification research was conducted to test the modeling of corporate entrepreneurship based on data on file. A verification method is used with explanatory research to describe the nature of casual relationship through hypothesis testing (Cooper and Schindler, 2011). Based on the research method used, information on the effect of organization and environment on entrepreneurial orientation and their impact on public value can be obtained. A survey method was used to obtain research data by collecting samples from the population, that is, middle managers in higher education institutions. The analysis unit of this study is the Head

of Programs and Head of Departments in the faculty. The units of observation are universities.

The following indicators have been developed to measure the research variables of this study. 1) For organization variable, three dimensions are used, that is, management support (openness, mutual support, and clear goal orientation); reward (performance, incentive, and salary); and resources (human resources, professionalism, and finance). 2) For environment variable, two dimensions are used, that is, multitude variety from stakeholders (hopes, contribution, and relationship); legal (legal and justification aspects). 3) For entrepreneurial orientation, three dimensions are used, that is, innovativeness (new ideas, creativity, and development); proactive (market opportunities and competitive advantages). 4) Public value orientation uses two dimensions, namely, image (impressions and confidence) and trust (credibility, competence, and benevolence). A sampling technique used is convenience random sampling of university middle managers in several areas in Indonesia.

#### 4. RESULTS AND DISCUSSION

A total of 146 people participated in this study. Respondents involved came from various public universities (47%) and private universities (53%). Data were collected from June to August 2016 through questionnaires. Most of the respondents were male (58.3%), and the rest were female. Respondents who were university middle managers (vice dean, head of department, and head of program) came from various areas, including Central Java (23.9%), followed by West Java and Jakarta for 19.2%, and other areas in Indonesia. In terms of age, most respondents were 30–44 years old (84.9%).

The result of descriptive analysis for each variable (Table 1) confirmed that the mean value of public value that can be built is slightly high ( $\geq 4.16$ ). Respondents provided the highest assessment on a positive image, followed by consistency in providing quality education service for society and the importance of building trust. The exploitation of network resources by collaborating with stakeholders was also an important concern for respondents. The high public value is assumed to be affected by entrepreneurial orientation ( $\text{mean} > 3.41$ ), organization ( $> 3.27$ ), and environment ( $> 3.78$ ). In terms of entrepreneurship, the highest mean is for the variable of openness to faculty development innovation, particularly in the learning process and optimism in implementing new things to improve learning quality. Middle manager organizations (vice deans, head of departments, and head of programs) in universities provided the highest score in openness to innovative ideas for faculty development, thereby supporting the requirement to overcome issues that emerge in the faculty and conducting evaluation toward improving faculty performance. Environmental aspect also received the highest mean score, thus indicating that university officials are genuinely concerned about the environment. Two aspects, namely, proposing legal aspect in every decision-making and sharing of innovative works among the faculty members, received high ratings. In addition, most of the respondents place a high expectation on the ability to create breakthroughs, such as offering marketable departments/programs and implemented/practical studies.

Table 1: Organization, Environment, Entrepreneurial Orientation, and Public Value Study

No.	Variable	Mean	Indicator
1.	<b>Organization</b>	<b>3.27–4.25</b>	Openness innovative ideas for faculty development, providing support to overcome issues that emerge in the faculty, and conducting evaluation toward improved faculty performance
2.	<b>Environment</b>	<b>3.78–4.19</b>	Proposing legal aspect in every decision-making, sharing of innovative works among the faculty members, and creating breakthroughs, such as offering marketable departments/programs and implemented/practical research.
3.	<b>Entrepreneurial Orientation</b>	<b>3.41–4.13</b>	Openness toward faculty development innovation, particularly in the learning process; optimism in implementing new products to improve the learning process and collaborating with stakeholders to maximize opportunities and implement new approaches to satisfy a high demand of the society.
4.	<b>Public Value</b>	<b>4.16–4.22</b>	Positive image followed by consistency in providing quality education services for the community and the importance of building trust. Maximizing network resources by collaborating with stakeholders have also become an important concern of respondents.

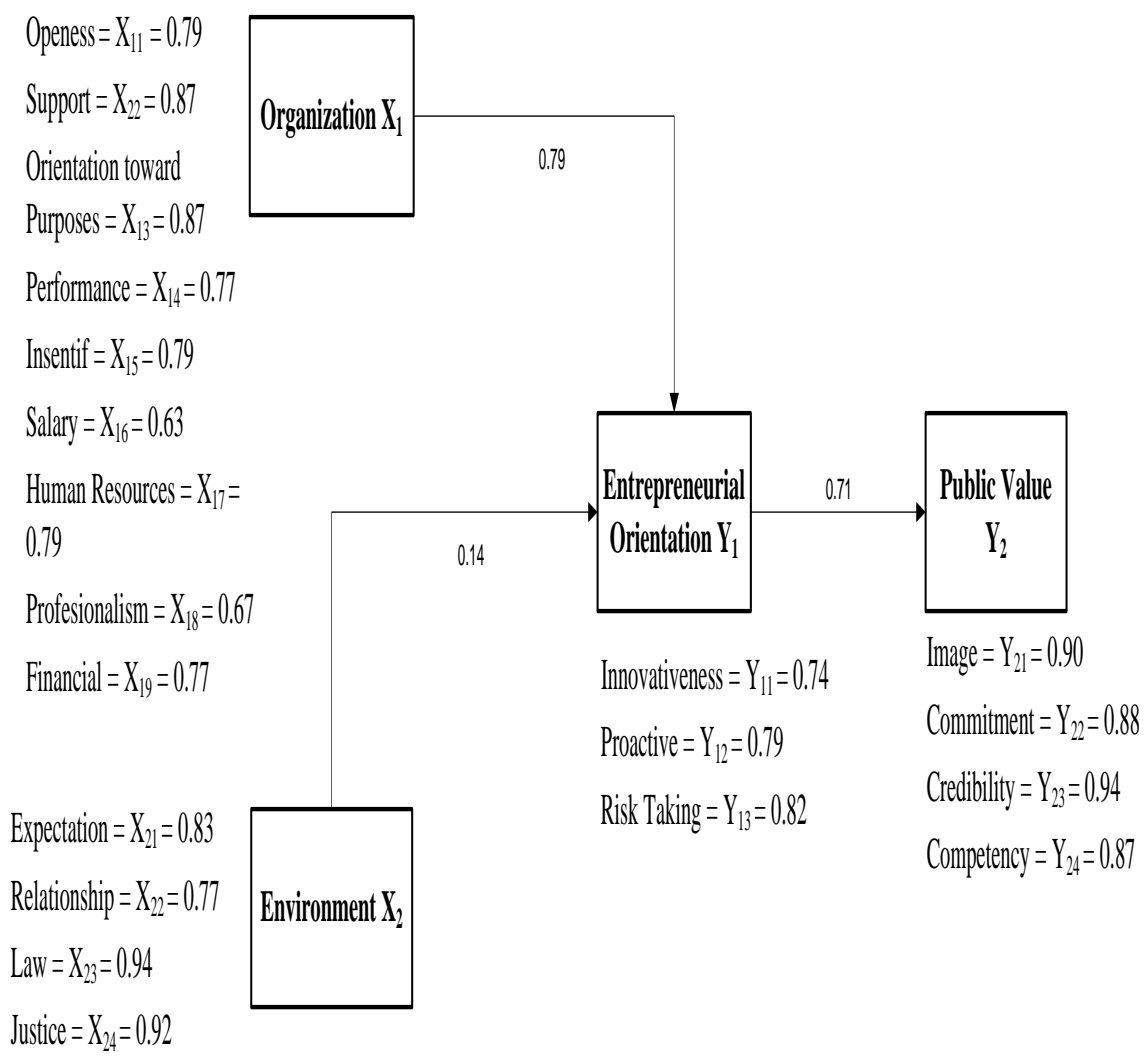
Research modeling can also confirm the existence of a significant effect between variables by utilizing SEM-PLS (Figure 2).

The result of hypothesis testing confirms that organization affects entrepreneurial orientation with a **very strong** influence (**0.79**). Thus, this research modeling succeeds in verifying that an organization built from three important dimensions, namely, management support, reward, and resources, can increase entrepreneurial orientation among middle managers in higher education institutions in Indonesia. The findings of this research support the research result by Wood (2008) who succeeded in determining that middle managers in the public sector can act entrepreneurially when they are supported. By contrast, these middle managers would not behave entrepreneurially if top managers do not innovate. Hornsby (2009) found that the aspect of management support can show the extent to which managers can facilitate, support, and encourage the formation of entrepreneurial behavior in organizations.

Environmental aspect minimally affects entrepreneurial orientation (0.14). In particular, the role of middle managers in managing the environmental aspect can encourage entrepreneurial aspect but not as significantly as the effect of organization. The finding of this study can support previous studies conducted by several experts (Kuratko, 2005; Floyd & Lane, 2000; Lumpkin & Dess, 2001; Miller, 1984) who can explain several matters related to the environment, including the important role of middle managers in building a competitive environment. In addition, studies conducted by several experts (Meynhardt & Metelmann, 2009; Currie & Procter, 2005) stated that a multitude of expectations influence behavior.

Furthermore, this study modeling successfully verifies the existing strong effect of entrepreneurial orientation (0.711) toward public value orientation. Entrepreneurial

orientation confirms that entrepreneurial behavior of middle managers in higher education institutions (vide deans, head of programs, and head of departments) can encourage departments/programs to become universities that are innovative, proactive, and risk-taking to seek opportunities to succeed and thus affect the creation of public value. This finding is aligned with the concept and results of previous studies conducted by several experts (Fairouz, 2010; Lee & Lim, 2009, Wiklund & Shepherd 2005), thereby confirming that entrepreneurial orientation positively affects image, that is, performance improvement. Diefenbach (2011) affirms the finding of the current study by stating that “middle manager can improve orientation of institutions in building public value.” The behavior of middle manager is strongly influenced by entrepreneurial behavior.



**Figure 2: Hypotheses and the Loading Factor Result**

## 5. CONCLUSIONS

This study successfully proves that corporate entrepreneurship modeling in higher education institutions can be implemented, while between variables show a significant effect.

Thus, entrepreneurial orientation in Indonesia can be implemented by university middle managers who are supported by the organizational and environmental aspects and is confirmed to strongly influence the creation of public value. For higher education institutions, a positive public value is genuinely important in maintaining trust and image of the institution. The results of this study can be used as a reference for developing future studies by considering the following matters: 1) a wide range and a specific study must be conducted in classifying middle manager levels in public and private universities. The characteristics of each institution must be grouped to obtain accurate data on the extent to which middle managers in universities are entrepreneurially oriented; 2) exploring environmental factors significantly influence the creation of entrepreneurial orientation and can subsequently create positive public value.

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