



The Role of Entrepreneurial Orientation and Management, in Enhancing Higher Education Competitiveness through Technology Transfer

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Indonesia as a nation is blessed with plenteous characteristics. However, it is not sufficient to merely have human resources equipped for overseeing a potential asset, even one that can stimulate national welfare. Graduates and researchers who benefit from tertiary education are, in particular, expected to bear the possibility of investigating and processing the riches and variety of natural assets, for the welfare of Indonesian society. This requires familiarity with nearby glories, and advancing one's own capacity to ideally use common assets for the collective welfare. To increase community access, higher education is expected to utilise information and transfer communication technology, through the learning process. People in higher education, the business world, professional associations, government and other stakeholders can develop continuing education (continuing education) or lifelong education. It is higher education in Indonesia that mostly built the strength of its culture's entrepreneurial orientation (EO), as a key to surviving in competition. These relationships will impact the degree of experienced entrepreneurship in Indonesia, and ultimately, the global competitiveness of nations through technology transfer. This experimental research aims to test impact entrepreneurial orientation and entrepreneurial management in higher education, to enhance competitiveness through technology transfers in Private Higher Education, as registered in LLDIKTI IV (West Java and Banten Province). In total 84 samples were taken. The data was processed with PLS-SEM. The result shows that technology transfer can moderate both



entrepreneurial orientation and management, as the enhancement impact bearing upon the competitiveness of higher education in LLDIKTI IV.

Keyword: *Technology Transfer, Entrepreneurial Orientation, Entrepreneurial Management, Competitiveness, Higher Education.*

Introduction

The Asian Development Bank (2019) states that Indonesia has far more private tertiary institutions (around 3,000), than state tertiary institutions (122 units). Of 6.9 million Indonesian tertiary students, the students who study at state universities are around 32% (2.2 million), compared with 68% (4.7 million) in the private universities. Private universities increase community participation in obtaining higher education, amid the limited capacity of public universities. Hitherto, no private universities are included in the first (top) ranking cluster of the best non-vocational universities appointed by the Ministry of Research and Technology in 2018. Fourteen universities are included in cluster one. All are from public universities. It is understandable because state universities are pioneers in the educational field, and are supported by qualified academic resources, as well as the state budget. Heretofore, private universities have just entered cluster two in 2018, based on the Kemenristek Dikti ranking. Tight competition, especially for students and resources, takes place in the higher education environment. Funds obtained from tuition fees paid by students are an important energy for reviving universities. If a university gets many students, it also gets more funds. The funds can be used to improve the quality of education, either by increasing the capacity of lecturers or by adding learning support facilities. Universities also consider tuition fees from students as an important financial source. In the context of private tertiary institutions, financial resources face a serious problem in paying for lecturers, support staff, overheads, and building infrastructure, to support good governance and institutional knowledge. If the private university still wants to live and excel in competition, it must prepare itself quickly and plan to be able to produce innovations that support the continuation of its educational business.

Higher education in Indonesia is progressing. It is moving its customary, essential core in training and academic, towards 'innovative and entrepreneurial' institution models that underscore inter-disciplinary commitment, commercialisation of institutional learning organisations, and a dynamic commitment to the advancement of private undertakings in the nearby and local economy (Leydesdorf, 2000). This view is supported by Suharti (2011) stating that since the beginning of the twenty-first century, the growth of young entrepreneurship in higher education was only 0.18% of the total population of Indonesia, and therefore it is



necessary to develop young entrepreneurs in a group of educated young people. It is said if they want to progress to be an advanced country, entrepreneurs should be as much as 5% of the total population. This is also intended to be a competitive advantage of the nation and the university itself. Zimmerer (2002: 12) states that there is a factor driving entrepreneurship growth in a nation; the role of universities, through organising entrepreneurship education. The university is responsible for educating, and furthermore providing entrepreneurs with abilities and motivation to choose entrepreneurship as their career.

Higher education needs to apply learning patterns to concrete entrepreneurship, based on empirical input, to equip students with meaningful knowledge and so orientate students toward entrepreneurship (Yohnson 2003, Wu & Wu, 2008). Entrepreneurial Orientation is a concept developed at the corporate level, reflecting a company's tendencies toward product innovation, pro-activeness, and risk-taking behaviours (Covin & Slevin, 1991; Wiklund & Shepherd, 2003). Another factor is shifting higher education's core, due to revolution 4.0. It is a growing need for universities globally to develop more 'rapid' linkages between science, technology, and utilisation (Allen and Cohen, 1969; Allen et al., 1979), and serve a 'third-mission' of contributing to local economic development (Etzkowitz, 2002). To survive the competition of Indonesian private higher education, universities need to add a plus point to build upon. Research and literature indicates that they are entrepreneurial intention, entrepreneurial management and technology transfer. Shane (2004) proves, systematically, why some universities are more successful than others in generating technology. This study aims to investigate the impact of both entrepreneurial orientation and management, in enhancing higher education competitiveness through technology transfers. The samples are taken from Indonesia Private Higher Education institutions registered in LLDIKTI IV (West Java and Banten Province).

LITERATURE REVIEW

Entrepreneurial Orientation

Entrepreneurial Orientation rehearses essential leadership styles and strategies that supervisors use, to allow subordinates to act innovatively. It offers a chance to look at how stakeholders upgrade the potential of higher education. Lumpkin and Dess (1996) contend that an innovative organisation is any organisation that takes part in a compelling mix of five measurements. In the first place, ingenuity is the propensity of an association to take part in and bolster new thoughts, curiosity, experimentation and innovative forms that produce new items, administrations or mechanical procedures. We incorporate this definition of gradual item/administration advancement, since it opens windows for organisations. Second, pro-activeness includes envisioning and following up on future needs by looking for new chances, presenting new items



in front of the challenge, and deliberately disposing of obsolescent tasks. Third, focused forcefulness is a higher education's inclination to beat industry equals in the commercial centre. Fourth, hazard-taking is the degree to which chiefs are happy to create enormous and unsafe asset responsibilities. Fifth, self-rule is the degree to which a group or a person, in higher education, is allowed to present and execute a vision or thought. These procedural measurements are 'middle of the road' factors. They are between outside (natural) and inside (authoritative) factors that drive organisation execution, and lead to a 'new section'; the basic demonstration of business enterprise. At the organisational level, a new section includes activities started by the organisation to advance upside potential, and fortify an upper hand. All things considered, Entrepreneurial Orientation offers an extra, conceptual clarification for improving execution, following a purchase that surpasses office cost criteria including those as to improving proficiency, to secure the organisation against possible drawbacks (Phan and Hill, 1995). In higher education that probably needs some development. Ecological and authoritative components assume a significant directing job in upgrading the Entrepreneur Orientation of organisations.

Measures of Entrepreneurial Orientation

Lumpkin and Dess (1996) argue five dimensions for measuring entrepreneurship; namely **autonomy, competitive aggressiveness, proactiveness, innovativeness and risk-taking**. In contrast, Morris et al. (2006) critiques the inclusion of competitive aggressiveness as a separate dimension, because in its content, competitive aggressiveness largely overlaps if there is no part of pro-activeness. Accordingly, a study by Kreiser et al. (2002) includes growth orientation as the fifth, independent, measurement of entrepreneurial management.

Entrepreneurial Management

Hortoványi (2012) states entrepreneurial management as opportunity driven, without aspects of asset accessibility and potential obstructions which require an extraordinary degree of a penchant for change. Shane and Venkataraman (2000) define entrepreneurial management as a 'mode of management' that is proactive, opportunity-driven, and action-oriented. Wickham (2006) defines entrepreneurial management as an activity to create new value by identifying new opportunities, attracting the resources needed to pursue those opportunities and build an organisation to manage those resources. The acknowledgment of chances together with worth creation by means of new mixes of assets is enterprising, regardless of whether it really includes proprietorship (Foss et al., 2006). Regardless, the enterprising administration approach separated here moves the accentuation from the topic of "who" the individual business person is, concentrating rather on the procedure itself and the part that people play inside it (Hortoványi, 2012).



Measures of Entrepreneurial Management

Entrepreneurially behaving firms are generally distinguished from administrative firms in their ability to innovate, initiate change, and perpetuate the strengths of flexibility and responsiveness (Guth & Ginsberg, 1990). The extraordinary thing is to presume that there are genuinely "advertiser" firms which are risk-taking, innovative, and proactive while at the opposite extreme, the conservative "trustees" are risk-averse, less innovative, and adopt a 'wait and see' posture (Stevenson, 2006). Advertisers and trustees are characteristic of the conceptual end points of the spectrum. Empirical observations, however, contrast trustees with promoters (cf. Nyström, 1979; Miller, 1983; Busenitz & Barney, 1997; Barringer & Bluedorn, 1999; Hortoványi & Szabó 2006a; Hortoványi, 2007), confirming that some firms show more entrepreneurship than others.

Technology Transfer

Technology transfer has a significant impact on modern advancement. Transfer of technology and information add to learning and advancement in the capacity of the business. Before defining the component of technology transfer, Gee (1993) characterises technology as a set of learning contained in specialised thoughts, data, and information, individual specialised abilities, mastery, gear, models, structures or PC codes. Consequently, innovation is unmistakable, reproducible and logical.

Technology transfer is the mechanism by which the accumulated knowledge developed by a specific entity is transferred wholly or partially to another, to allow the receiver to benefit from such knowledge (UNIDO, 2004). Spiegel (2007) identifies technology transfers as a procedure of sharing learning. Similarly with numerous wide ideas, innovation takes various structures as *per* one's inspirations and wanted results, government organisations, scholastic establishments, and private industry summons it as the term to evoke astoundingly unique plans.

Measures Technology Transfer

Scientists are experienced and comfortable in exchanging information and materials with colleagues in various institutions, including industry. They regularly engage in such exchange in furtherance of research, through publication, meetings and symposia, material transfer agreements, informal material sharing, formal and informal collaborations, as well as myriad collegial communications (Spiegel, 2007). In another sense, technology transfer improves the technological capability of business enterprises in developing countries.



The advantages of technology transfer could be (Bennett, 2002) : 1) a production process or part of a process which improves production efficiency, reduces costs, improves quality control and/or reduces environmental pollution; 2) a product which is of better quality, has greater functionality, better appearance, is less damaging to the environment in its use, or a combination of process and product as a better product often requires changes in the process. Higher education delivers technology to students by different means such as seminars, demonstrations and workshops. Demonstrations and workshops are more effective methods. In practice, higher education prefers that the student work closely with the expert or researcher (Thammarutwasik, 2008).

A technology transfer plan is a living document. It should, if necessary, be revisited and revised (with appropriate version control) periodically during execution of the transfer. A gap analysis for the transfer needs to be performed in its early phase, to capture all the identified gaps with a remediation plan. The gap assessment normally addresses potential process/analytical equipment gaps, environmental control gaps, process/product knowledge gaps, etc. The final phase of the technology transfer plan is acceptance criteria baseline, to measure the success of the transfer, as to (Qiu & Chen, 2017): product facilities, analytical methods, product development, regulatory strategy and launch readiness. In addition, the intellectual property (IP) manager handles the regulatory pieces of funded research, because patents that arise from such research require a substantial and careful compliance report to the government. Typically, IP managers have a legal background, such as serving as a patent agent, paralegal, or IP attorney. Many smaller universities adopt this model out of necessity in technology transfer that is “cradle-to-grave”; a single individual, typically called a Licensing Manager, takes an idea (invention disclosure) and brings it through the entire process to market (Schrankler, 2018).

Successful technology strategy managers have a strong foundation in science or engineering as well as industry experience, often as a product manager in a larger corporation. Schrankler (2018) explains that there is dimension used to measure technology strategy such as a patent, trademark, copyright, and other aspect of intellectual property of an invention. The inventor works hand-in-hand with a technology strategy manager, to move an invention or “case” forward by providing legal support for the intellectual property.

Competitiveness

Entrepreneurial competency is defined as the characteristics of the individual. The entrepreneur is a person who undertakes risk for preliminary profit in the business venture (Kaur & Bains, 2013). This definition elucidates entrepreneurial competence as an individual characteristic; entrepreneurs take over risks to benefit from the business they are living in. Reniati (2013) shows



that entrepreneurial competence is a unity of knowledge, skills and abilities that are dynamically exhibited by an entrepreneur/organisation, emitted from their behaviour to succeed in their business on an ongoing basis. Hung and Chang (2010) depict a company's competitiveness as its financial quality against its adversaries in the worldwide commercial centre where items, administrations, individuals and developments move openly regardless of topographical limits. Muhandi (2007: 39), assumes that operational competitiveness is a working capacity that is not merely situated inside but instead additionally exits (remotely), which proactively reacts to the objective business advertisement. The components of an organisation's competitiveness as expressed by Ward et al. (1998: 1036-1037) comprises costs, quality, conveyance time and adaptability.

Measures of Competitiveness

Competitiveness is measured by competency. Specifically, that is the competency which deals with business, competency to oversee human resources, competency to advance business endeavours, competency to keep business records, competency to deal with accounts, competency to oversee client credits and accumulation, and competency to secure the business. The business condition incorporates all variables, both those inside and outside the association, that can satisfy the coherence of accomplishing the ideal objectives. This business condition can support, or conversely prevent, the improvement and development of business exercises. The inward condition has direct, organisational, ramifications. The outer condition however, is an external domain that cannot be impacted by the organisation. It has six components, in particular: (1) government, (2) legitimate variables, (3) geo-physical elements, (4) political elements, (5) social elements, and (6) statistical factors (Kadin-Indonesia: 2013). As per Stephen P. Robbins in Doni Juni Priansa (2014: 171), inspiration is extraneous in the beginning, being outside that which additionally decides an individual's conduct in one's life. Three elements of competitiveness motivation introduced by McClelland (Robbin, 2010), are: 1) the requirement for accomplishment, 2) the requirement for alliance, 3) the requirement for power.

The Linkage Between Entrepreneurial Orientation, Entrepreneurial Management, Technology Transfer and Higher Education Competitiveness

JG Payumo et al. (2013) state that creating an entrepreneurial, research-based university model requires good intellectual property management and technology transfer programs. This includes intellectual property right protection, and patents. For universities, 'off-the-shelf' technologies can facilitate contractual transactions of intangible, intellectual, university assets between university and technology users particularly the private sector, and thereby accelerate technology transfer. The quality of knowledge generated within higher education institutions, and its

availability to the wider economy, is increasingly critical for national competitiveness. There is currently a focus on producing ‘globally educated citizens’. Thus, the most explicit expectations of a university today, regardless of social and economic conditions and geographic location, are in providing quality education, training for the future workforce, and the production of high income, skilled, labour (King and Lebeau, 2004). Eitzkowitz (2003) states that Universities presently are required to transform themselves from ‘ivory towers’ of scholarly pursuit, to entrepreneurial enterprises of innovation, knowledge transfer, and technology commercialisation. Zimmerer (2002: 12) states that there are factors driving growth in entrepreneurship in a country, which lie in the universities’ role in organising entrepreneurship education. The university is responsible for educating and enabling entrepreneurs to be graduates who are motivated to bravely choose entrepreneurship as their career. Lee and Petterson (2000) support research that is superior, and which facilitates a society’s propensity to generate autonomous, risk-taking, innovative, competitively aggressive and proactive entrepreneurs and firms. That generation will depend on the cultural foundations of society. The role of economic, political/legal, and social factors, as moderators of the relationship between culture and entrepreneurial orientation (EO), is also considered. Based on the above research, which underpins the mindset of this research, the following research framework and hypothesis are given in the figure and table below:

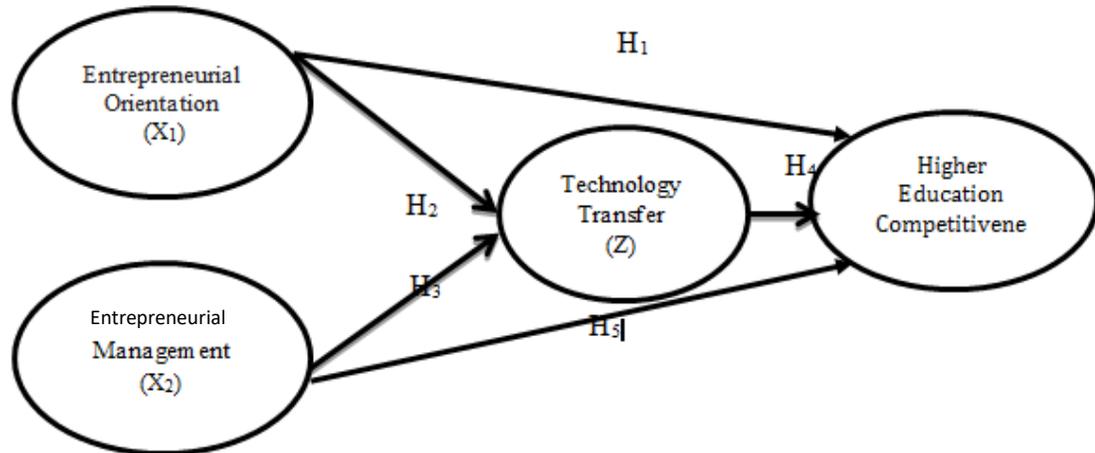


Figure 1. Theoretical Framework

Table 1: Research Hypothesis

No	Hypothesis Proposed
H ₁	Entrepreneurial Orientation impact on Enhancement of Higher Education Competitiveness.
H ₂	Entrepreneurial Orientation impact on Technology Transfer.
H ₃	Entrepreneurial Management impact on Technology Transfer.
H ₄	Entrepreneurial Orientation impact on Enhancement of Higher Education Competitiveness Through Technology Transfer.
H ₅	Entrepreneurial Management impact on Enhancement of Higher Education Competitiveness
H ₆	Entrepreneurial Management impact on Enhancement of Higher Education Competitiveness Through Technology Transfer.

With the provision of:

1. $t\text{-arithmetic} > t\text{-table} = H_0$ is not accepted and H_1 is accepted.
2. $t\text{-arithmetic} < t\text{-table} = H_0$ is accepted and H_1 is not accepted.

METHODOLOGY

This study uses a quantitative approach and experimental research. The population for this study was the group of Private Higher Education users actively registered in 2016 in LLDIKTI IV, West Java and Banten. In total, 100 (one hundred) samples were taken for this research, using a purposive sampling method. The number of samples identified by the Slovin measurement are

listed below:
$$n = \frac{N}{N.d^2 + 1}$$

n = number of samples

N = total population = 539

d^2 = precision (set at 5% and confidence level of 95%)

Based on this formula, the following sample sizes are obtained:

$$n = \frac{539}{}$$

$$[539 (0.1)^2 + 1]$$

$$n = 84.35 = 84 \text{ (rounded)}$$

Data was collected in the study by a questionnaire. It was measured using a Likert scale (Likert scale). Data was analysed by Structural Equation Modelling (SEM), using Partial Least Square (PLS) analysis, with the help of the XLSTAT application program because this study uses intervening variables. According to Ghazali (2008), PLS is to help researchers for predictive

purposes. The formal model defines a latent variable as an aggregate linear indicator. Weight estimates created a component of the latent variable score, based on specifying the inner model (the structural model that connects between latent variables) and the outer model (the measurement model is the relationship between the indicators and the construct). The result is the residual variance of the dependent variable (both latent variables and indicators) taken. For running data, this research use XLSTAT software.

RESULTS AND DISCUSSION

The results showed that each variable has its own effect on other variables. This can be seen in the research diagram below.

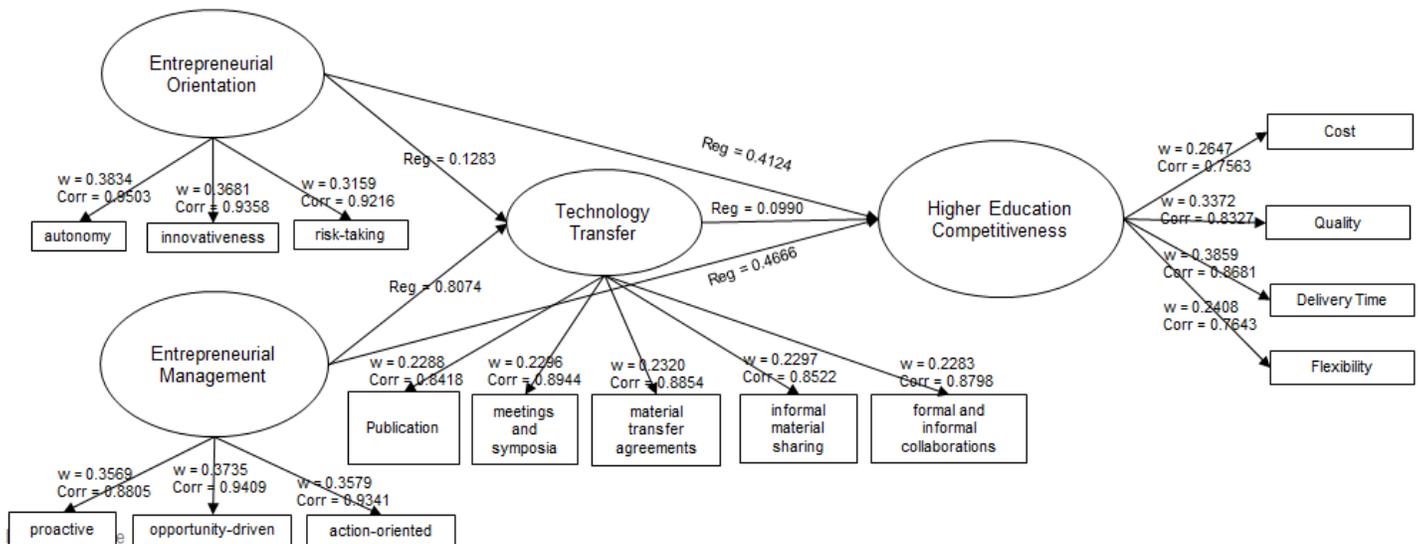


Figure 2. Hypothesis Testing Using PLS-SEM Method

1. Outer Model Evaluation

Below are validity and reliability results, as outer measurements for this research and a goodness of fit test as an inner measurement. Results showing both inner and outer measurement tests are proof that the sample can be used in this research.

Table 2 Cross-loadings (Monofactorial manifest variables / 1):

	Entrepreneurial Orientation	Entrepreneurial Management	Technology Transfer	Higher Education Competitiveness
Autonomy	0.9503	0.7022	0.6946	0.7967
Innovativeness	0.9358	0.7053	0.6576	0.7742
Risk-taking	0.9216	0.5085	0.5592	0.6694
Proactive	0.6196	0.8805	0.8347	0.7335
Opportunity-driven	0.6298	0.9409	0.8104	0.8306
Action-oriented	0.6515	0.9341	0.8250	0.7478
Publication	0.6184	0.7323	0.8418	0.7140
Meetings and symposia	0.5619	0.8139	0.8944	0.6962
Material transfer agreements	0.6077	0.7787	0.8854	0.7073
Informal material sharing	0.5899	0.7747	0.8522	0.7085
Formal and informal collaborations	0.6046	0.8009	0.8798	0.6548
Cost	0.6079	0.5011	0.5448	0.7563
Quality	0.7830	0.6950	0.6288	0.8327
Delivery Time	0.6753	0.9001	0.8361	0.8681
Flexibility	0.4835	0.5204	0.5009	0.7643

Source : Data Collected Run By XLSTAT 2019

Table 2 presents the results of data processing from questionnaires using XLSTAT software. It gives the indicator in convergent validity value, for each variable that has a factor loading more than 0.50. That means the statement in the questionnaire is valid, and can represent the variables of entrepreneurial competence, business environment, motivation and performance standards in this study. The higher the factor loading, the higher the validity.

Table 2.1 Composite Reliability

Latent variable	Dimensions	Cronbach's alpha	D.G. rho (PCA)
Entrepreneurial Orientation	3	0.9294	0.9551
Entrepreneurial Management	3	0.9073	0.9421
Technology Transfer	5	0.9203	0.9401
Higher Education Competitiveness	4	0.8231	0.8830

Source : Data Collected Run By XLSTAT 2019

According to table 2.1, the results of data processing from questionnaires using XLSTAT software indicate that the construction of each variable has a Cronbach Alpha more than 0.70 that means the statement in the questionnaire reliable and can represent the variables of entrepreneurial orientation, entrepreneurial management, technology transfer and higher education competitiveness in this study.

Table 2.2 Discriminant validity (Squared correlations < AVE) (Dimension 1):

	Entrepreneurial Orientation	Entrepreneurial Management	Technology Transfer	Higher Education Competitiveness	Mean Communalities (AVE)
Entrepreneurial Orientation	1	0.4755	0.4693	0.6431	0.8760
Entrepreneurial Management	0.4755	1	0.8026	0.7050	0.8443
Technology Transfer	0.4693	0.8026	1	0.6393	0.7586
Higher Education Competitiveness	0.6431	0.7050	0.6393	1	0.6507
Mean Communalities (AVE)	0.8760	0.8443	0.7586	0.6507	0

Source : Data Collected Run By XLSTAT 2019

Table 2.2 shows that all the variables (Entrepreneurial Orientation (X1), Entrepreneurial Management (X2), Higher Education Competitiveness (Y), and Technology Transfer (Z)) have AVE values and Communality greater than 0.5. This shows that the overall variable has met the criteria discriminant validity. Therefore, it can be stated that the question items are valid in measuring the variable.

2. Inner Model Evaluation

Table 3 Goodness of fit index (1):

	GoF	GoF (Bootstrap)	Standard error	Critical ratio (CR)
Absolute	0.7883	0.7820	0.0827	9.5351
Relative	0.9605	0.9419	0.0710	13.5255
Outer model	0.9934	0.9801	0.0683	14.5501
Inner model	0.9669	0.9607	0.0133	72.4602

Source : Data Collected Run By XLSTAT 2019

The GoF value of 0.9607 means that the diversity of the data can be explained by this model, that is 96.07%. In other words the information contained in the data is 96.07% and it can be explained by the model. The remaining 3.93% is explained by other variables outside the model used in this study.

2.1 Hypothesis Testing

Table 3.1 Results of Testing Direct Impact Hypotheses

Hypothesis	Impact	Path Coefficients	t-test	t-table	Result
H ₁	EO → Competitiveness	0.4124	5.8659	1.66	Accepted
H ₂	EO → Technology Transfer	0.1283	1.9247	1.66	Accepted
H ₃	EM → Technology Transfer	0.8074	12.1138	1.66	Accepted
H ₅	EM → Competitiveness	0.4666	4.0474	1.66	Accepted

Source : Data Collected Run By XLSTAT 2019

The level of significance is obtained by comparing the count with the t-table value. If the t-count is greater than t-table, the relationship between these variables is significant. The amount of data is 84, then the t-table value ($\alpha = 5\%$) is 1.66. The results of the impact between variables are presented in Table 3.1 above. All Hypotheses are accepted; the value of t-count is greater than t-table. Result for indirect impact shown in Table 3.2 below:

Table 3.2 Results of Testing Indirect Impact

Hypothesis	Variable Exogenous	Variable Endogenous	Intervening Variable	Impact	
				Direct	Indirect
H ₄	Entrepreneurial Orientation	Competitiveness	Technology Transfer	0.4124	0.4124x 0.0990 = 0.0408
H ₆	Entrepreneurial Management	Competitiveness	Technology Transfer	0.4666	0.4666 x 0.0990 =0.0461

Source : Data Collected Run By XLSTAT 2019

Based on Table 3.2, H₄ and H₆ are accepted. Both variables indirectly impact higher education competitiveness through technology transfer. The t-test value also shows significance, t-test is greater than t-table, t-test for entrepreneurial orientation is 5.86, and t-test for entrepreneurial management is 4.04 for both variables that have value greater than t-table (1.66).

CONCLUSION AND RECOMMENDATIONS

This result supports the Theory of models of Planned Behaviour by Fishbein and Ajzen (TPB), as to student entrepreneurial intentions. Attitudes contained in the TPB relate to matters including autonomy/authority, economic challenges, self-realisation and perceived confidence, security and workload, responsibility avoidance, and social career. Several studies have shown the results that support this research result (Kourilsky & Walstad, 1998; Gerry et al., 2008). In addition, education and entrepreneurial experience, academic support (academic support), social support and business environment support (Gurbuz & Aykol, 2008) also, are allegedly contextual influences upon entrepreneurship intentions. Technology transfer is significant in enhancing higher education competitiveness, but the value is not higher than the direct impact from entrepreneurial orientation and entrepreneurial management itself. Given the dimension of technology transfer, it is shown that the highest dimension that correlates to competitiveness is symposium and meeting, and the opposite publication dimension contributes less than the other

dimension. In total, 84 higher education institutions in LLDIKTI IV have fewer publications than other higher education bodies. Unfortunately the number of publications is a criterion that raise university rank in Indonesia, as standardised by DIKTI. The culture of publishing in higher education needs to be enhanced, if those institutions want to be more competitive and realise the advantages of that greater competitiveness. Entrepreneurial orientation in higher education represents 84 samples that show the second variables after EM, that enhance competitiveness. They see management of entrepreneurs as more important than the intention to be an entrepreneur itself. Good management can sustain and create more entrepreneurial intention to in higher education. Opportunity driven dimensions give the highest contribution to entrepreneurial management, in enhancing competitiveness in higher education. This conclusion can be seen in Figure 3 below:

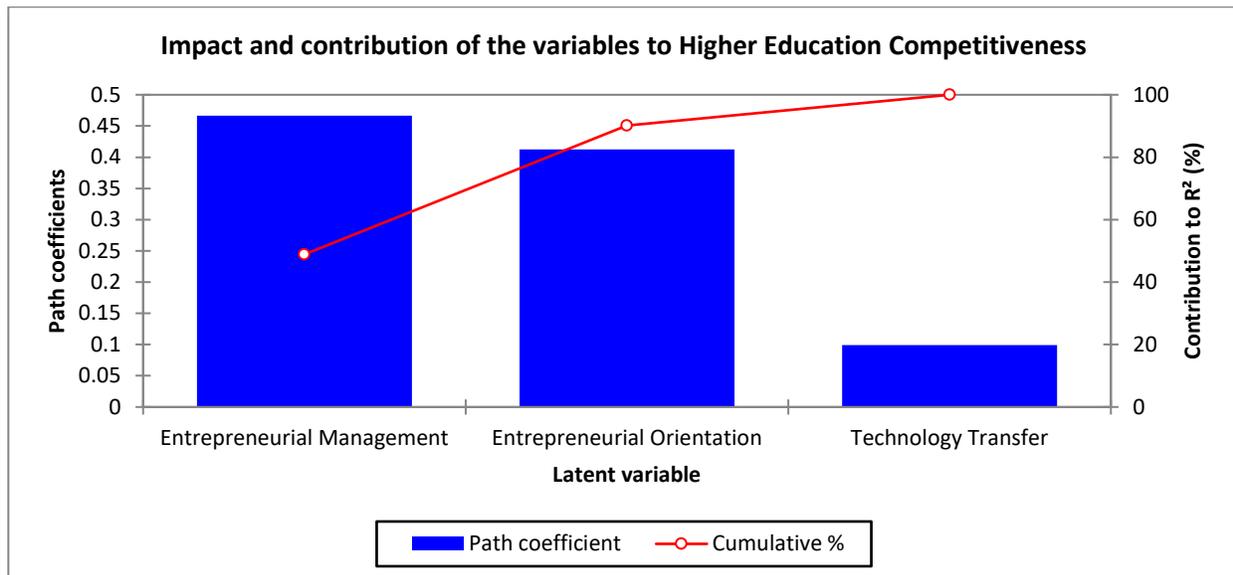


Figure 3 Impact and Contribution Variables to Higher Education Competitiveness

This result supports the theory of Devece, Peris-Ortiz, & Rueda-Armengot (2016). The concept of push and pull factors has replaced the necessity and opportunity of entrepreneurial motivations that are used for new business creation, and as a basis for decision-making for entrepreneurs. Opportunity entrepreneurship is mainly based on voluntary engagement or unique market opportunities.



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