

Turnitin Originality Report

Processed on: 26-Aug-2020 22:59 +08
 ID: 1374379358
 Word Count: 4350
 Submitted: 1

Similarity Index

17%

Similarity by Source

Internet Sources: 11%
 Publications: 10%
 Student Papers: 14%

Intellectual Capital and
 Indonesian Universities
 Performance By Fivi Anggraini

3% match (Internet from 26-Jun-2020)

<https://www.intangiblecapital.org/index.php/ic/article/view/348/378>

2% match (student papers from 31-Oct-2014)

Class: Quick Submit

Assignment: Quick Submit

Paper ID: [471697309](#)

2% match (Internet from 08-May-2020)

<https://www.scribd.com/document/327782992/9>

1% match (Internet from 15-Aug-2014)

<http://waset.org/publications/148/intellectual-capital-report-for-universities>

1% match (publications)

[Yolanda Ramírez Córcoles, Jesús F. Santos Peñalver, Ángel Tejada Ponce. "Intellectual capital in Spanish public universities: stakeholders' information needs", Journal of Intellectual Capital, 2011](#)

1% match (student papers from 31-Oct-2014)

Class: Quick Submit

Assignment: Quick Submit

Paper ID: [471695105](#)

1% match (student papers from 20-Aug-2019)

[Submitted to Symbiosis International University on 2019-08-20](#)

1% match (student papers from 31-Oct-2014)

Class: Quick Submit

Assignment: Quick Submit

Paper ID: [471696981](#)

1% match (student papers from 19-Jun-2020)

[Submitted to Universitas Negeri Semarang on 2020-06-19](#)

1% match (student papers from 17-Apr-2013)

[Submitted to Institute of Graduate Studies, UiTM on 2013-04-17](#)

1% match (Internet from 08-May-2019)

<http://ir.jkuat.ac.ke/bitstream/handle/123456789/1343/KARIMI%20JAMES%20MARK%20ONGARI-PhD%20THESIS.pdf?isAllowed=y&sequence=1>

1% match (publications)

[Muhammad Khalique. "chapter 17 Intellectual Capital in Malaysian SMEs", IGI Global, 2015](#)

1% match (student papers from 10-Nov-2016)

[Submitted to Institute of Graduate Studies, UiTM on 2016-11-10](#)

1% match (Internet from 25-Jan-2015)

<http://academic-conferences.org/pdfs/ECIC12-book.pdf>

Intellectual Capital and Indonesian Universities Performance Fivi Anggraini¹, Mohamad Ali Abdul-Hamid², Aza Azlina Md Kassim³ Intellectual capital (IC) is an important asset for a university to face today's global economy challenges. Thus this study investigates the effect of [intellectual capital and its constituent elements, namely human capital, structural capital and relational capital](#) on the public universities performance in Indonesia. A total of 177 respondents representing from 8 top public universities in Indonesia were involved in the study. The Partial Least Square (PLS) was used to test the hypotheses. The result found a significant relationship of IC and its elements on universities performance. Relational capital, which is one of the elements of IC, contributed a very strong influence on the universities performance rather than two others, [human capital and structural capital](#). Therefore it is wise to recommend to the university to invest on IC which consisting of human capital, structural capital and relational capital. Also these elements should be used as a new model for measurement of the university or higher education institution performance so that it provides added value to strengthen their competitiveness ability.

1. Introduction Higher education is one of education instruments in Indonesia, which become center of implementation and development to educate the community with the knowledge, technology and art for a better quality life of community, nation and the country. These institutions have grown rapidly since last decades. As reported by the Ministry of National Education, Republic of Indonesia (2013), the amount of public and private higher education institutions in Indonesia increased about 18% and 5.39%, respectively from year 2005 to 2011. This situation has created tough competition amongst them and has changed the orientation of the country's universities are not only be able to compete in national level, but also in the global level. Facing these challenges, Indonesian universities should enhance their performances both in academics and management. Performances measurement has increasingly pushed a call for accountability in higher education. However, there are still few frameworks of universities performances measurements have been developed. Many performances measurement frameworks are originated from private sectors for purposely getting profits. An attempt has been made by Wang (2010), who claimed that the universities performance can be measured from education and research aspects, which are in line with the university roles and functions.

1 Mrs. Fivi Anggraini, Department of Accounting, Universitas Bung Hatta, Padang, Indonesia Email: anggraini_fivi@yahoo.com 2 Prof. Dr. Mohamad Ali Abdul-Hamid, School of Accountancy, University Utara Malaysia Email: malizai25@gmail.com 3 Dr. Aza Azalina Md.Kassim, Department of Accounting, University Selangor Malaysia Email: aza_azlina@unisel.edu.my

Intellectual capital (IC) is one of the important elements for education and research measurements. Intellectual capital should be given a great attention in elevating the universities performance because it is consisting of knowledge as main output and input of the universities. The universities in European countries have well-organized in reporting intellectual capital since few decades. This can be proven by a lot of studies on intellectual capital in universities have been revealed in the literatures for some countries such as Austria, UK, Spain, Hungaria and Taiwan (Leitner, 2002; Fazlagic, 2006; Sanchez and Elena, 2006; Canibano and Sanchez, 2009; Benzhan, 2010; Ramirez, Santos and Tejada, 2011; Ramirez, 2013; Ramirez and Gordillo, 2014; Wu, Chen and Chen, 2012; Veltri and Schaffhauser, 2012). In the case of Indonesia, studies on intellectual capital in universities are very few. Puspitahati, Ulum and Prasetyo (2011) and Ulum (2012), conducted a study on intellectual capital in the Indonesia universities through official website of the QS-Star framework. Sadalia and Lubis, (2015) examined discriminant analysis of intellectual model (organizational culture and corporate governance) of state university in Medan city, Indonesia. Besides limited in number and scopes of study, the previous studies are also not comprehensive in addressing the current problem. Thus, the study initiates a comprehensive investigation on the effects of published information of intellectual capital to the university performance.

2. Literature Review [Intellectual capital consists of three](#)

elements, i.e. human capital, structural capital and relational capital. As the university is one of types of organization, thus it is clear that intellectual capital is also a major asset for universities. A university is an organization; therefore, it is clear that intellectual capital is a major asset for the university. Furthermore, the education quality directly influences organizational performance. Intellectual capital may have a significant impact on universities performance (Jones, Meadow and Sicilia, 2009; Lu, 2012; Meihami and Karami, 2014). Universities provide an effective location for such investigation since IC is so important to universities (Yusof, 2008). Human capital is the greatest critical component as the heart of intellectual capital. Literature indicates that past studies have also focused on the impact of human resources management practices on university performance with academicians as the center of focus (Shahzad, Bashir and Ramay, 2008; Chen, et al., 2009; Malik, Nawab, Maeem and Danis, 2010). A study by Amin, Ismail, Rasid and Selemani (2014) found that human resource practices: recruitment, training, performance appraisal, career planning, employee participation, job definition and compensation have a significant relationship with university performance. Generally, structural capital of organizations comprises of infrastructure, system policies and procedures, (Khalique et al., 2011). An organization cannot live on without human capital. The mere creation of knowledge by individuals is useless without a structure to determine how that knowledge leads to better products. The consideration that the characteristic of public university operation direction, university funds, and the operation expenditure of the schools in teaching, research, education, and training, guidance and assistance etc. These factor serve to strengthen the internal organizational and energize research and teaching (Lu, 2012). Relational capital as an invisible asset that made based on developing, maintaining and nurturing high quality relationships with any organizations, individuals or groups that influences organization performance. Lu (2012) stated the new economic model has pushed the universities to explore how to get profits from the knowledge that they possess as educational institutions. If a university has a strong relationship with numerous customers, it is likely that the university will continue to be profitable and reputable. H1: There is a relationship between intellectual capital and the public universities performance. H1a: There is a relationship between human capital and the public universities performance. H1b: There is a relationship between structural capital and the public universities performance. H1c: There is a relationship between relational capital and the public universities performance.

3. The Methodology and Model A total of 177 respondents comprised of the university and faculty leaders have participated in this study. Samples of populations were taken from 8 Indonesian public universities listed under the QS World University Rankings in between year 2014 and 2015. A questionnaires survey technique through online survey was used to obtain the data from the respondents from the listed universities. The respondents involved in the study were Rector, Vice Rector, Dean, Vice Dean and Head and Secretary of Departments and lecturers. They were purposely chosen since they know more about their institutions. Intellectual capital in university is a term used to cover all the institution's non- tangible or non-physical assets, including processes, capacity for innovation, patents, the tacit knowledge of its members and their capacities, talents and skills, the recognition of society, its network of collaborators and contacts, etc. The instrument to measure intellectual capital adopted from Ramirez et al., (2011). The instrument consisted of 1 to 5 Likert scales, where 1- scale is for "not at all important" and 5- scale says that "it is very important". There dimensions of intellectual capital are considered for analysis purpose including human capital, structural capital and relational capital. Human capital is the sum of the explicit and tacit knowledge of the university staff (teacher, researcher, manager, administration and service staff) acquired through formal and non-formal education and refresher process included in their activities. A total of 12 items questions were delivered for human capital. Structural capital is the explicit knowledge relating to internal process of dissemination, communication and management of the scientific and technical knowledge at the university. Structural capital includes organizational capital and technological capital. Organizational capital is the operational environment derived from the interaction between research, management and organization processes, organizational routines, corporate values, inter

procedures, quality and the scope of the information system, etc. Technological capital is the technological resources available at the university, such as bibliographical and documentary resources, archives, technical developments, patents, licenses, software, database, etc. A total of 13 items questions were delivered for structural capital. Relational capital is the extensive collection of economic, political and institutional relations developed and upheld between the university and its non-academic partners, i.e. enterprises, non-profit organizations, local government and society in general. It also includes the perception other shave of the university; its image, appeal, reliability, etc. A total of 16 items questions were delivered for relational capital. University performance can be measured by the extent to which each of university functions is maintained toward the university goals. This study uses the university organizational performance measurement by Wang (2010). The measurement method was chosen just simple because this method has multidimensional performance measurement including aspects of academic and management. The academic performance dimension can be further divided into research and educational dimensions. The management performance dimension can be further divided into financial and human resource dimensions. Measurement of academic research performance consists of 12 questions, while 14 questions were used to measure the academic education performance. Measurement of financial management performance consists of 5 questions, while 10 questions were given to measure the human resources management performance. Similarly, the respondents were asked to evaluate their universities performances based on the given Likert Scale as mentioned earlier. The Partial Least Square (PLS) approach with WarpPLS program version 3.0 was used to test the hypothesis. This approach has several advantages as stated by Hair et al., (2013) and Kock (2013). Firstly, SEM-PLS is suitable for this research model that uses variables that cannot be measured directly (latent variables) and has predicted measurement error. Secondly, analysis of SEM-PLS can simultaneously test multiple dependence and independence variables as used in this research model. Thirdly, component-based SEM-PLS can overcome complexity models with small sample sizes. 4. The Findings The first step in data analysis with SEM-PLS approach is validity and reliability test. Testing the validity with the reflective indicator was measured through convergent validity and validity discriminant. Testing reliability for reflective construct was measured by Cronbach alpha and composite reliability based on Kock (2013). Meanwhile, testing construct validity and reliability are not required for the formative indicators. This can be done by looking at the weight indicator only. This indicator should be statistically significant and multicollinearity of variance inflation factor (VIF) should be smaller than 3.3. Table 1 summarizes the results of validity and reliability testing for reflective constructs. Table 1 Conclusion from the Results of the Validity and Reliability (Outer /Measurement Model) Testing Construct Validity Loading Range AVE Reliability Composite Cronbach Reliability Alpha Full Collinearity VIF Rule of thumb > 0.5 > 0.5 > 0.7 > 0.7 < 3.3 Intellectual Capital (IC) Human Capital (HC) 0.622-0.782 0.510 0.838 0.757 2.107 Structural Capital (SC) 0.640-0.794 0.510 0.912 0.892 1.994 Relational Capital (RC) 0.599-0.798 0.513 0.904 0.879 1.713 University Performance Academic Research (PR) 0.674-0.809 0.551 0.936 0.925 1.841 Academic Education (PE) 0.583-0.861 0.548 0.856 0.789 1.469 Management Financial (PF) 0.794-0.839 0.663 0.908 0.873 2.288 Management Human 0.593-0.753 0.503 0.901 0.876 2.044 Resources (PH)

Source: Results of data processing by software WarpPLS 3.0 Overall, the results of measurement model (outer model) reflective constructs have met the criteria, so that it can proceed to the inner model or structural models. The results of this study shows a loading range of 0.583 to 0.861 and agrees with Hair et al., (2013), who stated that the loading between 0.40-0.70 should be taken into consideration and retain for a newly developed questionnaire. Based on criteria of each variable cross loading should be greater than 0.70, hence it have also met the criteria as discriminant validity (Table 2). The formative construct of the WarpPLS program just looked at the significance of weight indicators with criteria p value less than 0.05 and VIF (variance inflation factor) of less than 3.3 (Kock, 2013) are presented in Table 3. Convergent validity testing for each construct indicated that there are several indicators that should be dropped. Indicators dropped since they are not meeting the test criteria of

convergent validity and value AVE (average variance extracted) with terms of greater than 0.05. Table 2 Result of Discriminant Validity University Performance Construct Human Structural Relational Academic Academic Financial Capital I Capital Capital Research Education Management Human Resources Management [Intellectual Capital Human Capital Structural Capital Relational Capital University Performance Academic Research Academic Education Management Financial Management Human Resources](#) 0.714 0.644 0.714 0.588 0.548 0.209 0.216 0.260 0.230 0.132 0.074 0.205 0.214 0.716 0.251 0.742 0.285 0.390 0.194 0.596 0.243 0.532 0.740 0.453 0.440 0.815 0.672 0.709 Source: Results of data processing by software WarpPLS 3.0 Table 3 Results of Formative Construct Testing Constructs P value VIF Rule of thumb < 0.05 < 3.3 Intellectual Capital lv_HC <0.001 2.052 lv_HC <0.001 1.921 lv_HC <0.001 1.639 University Performance lv_PR <0.001 1.658 lv_PE <0.001 1.336 lv_PF <0.001 2.200 lv_PH <0.001 1.976 Source: Results of data processing by software WarpPLS 3.0 Table 4 Summary Indicators Dropped Latent Variables Early Drop Drop Drop Drop Finally I II III Total Intellectual Capital (IC) Human Capital (HC) 12 3 4 - 7 5 Structural Capital (SC) 13 3 - - 3 10 Relational Capital (RC) 16 4 3 - 7 9 University Performance Academic Research (PR) Academic Educational (PE) Financial Management (PF) Human Resources Management (PH) 12 14 5 10 - 5 - 1 - 3 - - - 1 - - - 9 - 1 12 5 5 9 Total 82 16 10 1 27 55 The number of indicator questions given to the respondent before the convergent validity testing were 82 items questions, as summarized in Table 4. After testing, the eventual number of valid and reliable indicators was 55 that can be used to test the hypothesis. The indicators do not meet the test criteria convergent validity and value AVE (average variance extracted) was 27 of the 82 indicators used to measure latent variables. The value of standardized path coefficient of intellectual capital to university performance is 0.35 and is significant at p-value less than 0.001 (Figure 1). Also, the value of R2 of 0.12 and is considered as relatively weak in a group R2 in accordance with Chin (1998). This result means that only 12% of the performance variances university (PU) can be explained by the variance of intellectual capital (IC). Figure 1 Result of Structural Model for Hypothesis 1 Testing Table 5 shows results of correlation coefficient value of intellectual capital (IC) to the university performance (PU) is approximately 0.349 (rounded to the image output becomes 0.35) and significant at 0.001. The output shows that the hypothesis is accepted. This means that the intellectual capital significantly influence university performance. In other words, it can be said the higher the transparency of the publication of intellectual capital of an organization, the higher the university performance. Table 5 Output Path Coefficients for Hypothesis 1 Path coefficients Standard Effect Errors Sizes Path coefficients values p-values Result of hypothesis IC ? PU 0.064 0.122 0.349 <0.001 H1 Supported The result of effect size estimation of the [value of intellectual capital](#) of the [university performance](#) is [0.122](#) and categorized into [medium effect size group](#). This means that the [effect of intellectual capital has an important influence in the organization based on practical point of view](#) by Cohen (1988). Previous studies show significant positive correlations between intellectual capital and organizational performance. These findings are consistent with Jones et al., (2009), Ramirez et al., (2011), Lu (2012) and Meihami and Karami (2014). The findings have proved that intellectual [capital plays a significant contribution to enhance the universities performance](#). Thus, it is clear [that intellectual capital is a major intangible asset for](#) universities and education quality which directly influences the universities performance. The value of standardized path coefficient of human capital to university performance is 0.27 and significant at p-value less than 0.001 (Figure 2). The obtained value R2 is 0.07 and falls into relatively weak group R2 based on Chin (1998). This shows that the variance university performance (PU) of 7% can be explained by the variance of human capital (HC). Figure 2 Results of Structural Model for Hypothesis 1a Testing Table 6 shows the output of correlation coefficient values track human capital (HC) on university performance (PU) is approximately 0.272 (rounded to the output image to be 0.27) and significant at 0.001. The output shows that the hypothesis H1a is accepted. Thus, human capital (HC) significantly influences the university performance (PU). In other words, the higher the transparency of disclosure of an organization's human capital, the higher the performance of the university. The result of estimated

effect size value of human capital (HC) on university performance (PU) is 0.074. This result falls into relatively weak group effect size and indicates that the effect of human capital disclosure transparency have less influence important from a practical view (practical point of view) based on Cohen (1988). Table 6 Output Path Coefficients for Hypothesis 1a coefficients Errors Path Standard Effect Path Sizes coefficients values p-values Result Hypothesis HC ? PU 0.067 0.074 0.272 <0.001 H1a Supported The study has found that human capital have a significant relationship with university performance. This study is consistent with the previous studies Chen et al., (2009), Ramirez (2011), Lu (2012), Amin, et al., (2014). Being a training and research institution, a university needs to attract, retain and develop their employees so that they would be trained and motivated people and [committed to their works of conducting research and training for](#) university performance. The value of standardized path coefficient of structural capital (SC) to university performance (PU) is equal to 0.237 (rounded to 0.24) and significant at a p-value less than 0.001 (Figure 3). The R2 value of 0.06 is categorized in a relatively weak group R2 based on Chin (1998). This shows that the variance university performance (PU) by 6% can be explained by the variance of structural capital (SC). Figure 3 Results of Structural Model for Hypothesis 1b Testing Table 7 shows path coefficient values of structural relationship capital (SC) on university performance (PU) is approximately 0.237 (rounded to the output image becomes 0.24) and significant at 0.001. The output shows that the hypothesis H1b is acceptable. Thus, structural capital gives significant effect on university performance. In other words, the higher the publication of information structural capital of an organization, it increases the university performance. Table 7 Output Path Coefficients for Hypothesis 1b Path coefficients Standard Effect Path Errors Sizes coefficients values p-values Result Hypothesis SC ? PU 0.068 0.056 0.237 <0.001 H1b Supported The estimated value of effect sizes of structural capital (SC) on university performance (PU) is 0.056 and falls into relative weak group effect size. This indicates that the effect of structural capital has less important influence than the practical view (practical point of view) as mentioned by Cohen (1988). The [structural capital](#) primarily [provides the environment that support individuals](#) to invest [their human capital to create](#), the innovation, creativity [and](#) universities and [leverage its knowledge to enhance the](#) universities [performance](#). The results are consistent with [Sharabati et al., \(2010\)](#), [Khalique et al \(2011\)](#) and Lu (2012). The value of standardized path coefficient of relational capital (RC) to university performance (PU) is 0.31 and significant at a p-value less than 0.001 (Figure 4). The obtained value R2 is 0.09 and falls into relative weak group as stated by Chin (1998). This shows that the variance of university performance (PU) at 9% can be explained by the variance of relational capital (RC). Figure 4 Result of Structural Model for Hypothesis 1c testing Table 8 shows the path coefficient values of relational relationship capital (RC) to the university performance (PU) is approximately 0.306 (rounded to the output image becomes 0.31) and significant at 0.001. The output shows that the hypothesis H1c is acceptable. Thus, relational capital significantly affects the university performance. In other words, there is a direct influence of transparency disclosure of relational capital that can improve the university performance. Table 8 Output Path Coefficients for Hypothesis 1c Path coefficients Standard Errors Effect Sizes Path coefficients values p-values Result Hypothesis RC ? PU 0.065 0.094 0.306 <0.001 H1c Supported The estimated value of the effect size of the university performance to relational capital is 0.094 and falls into a relative weak group effect size. This indicates that the influence of relational capital is less important than practical view (practical point of view) in accordance to Cohen (1988). The acceptance of the empirical results for 1c hypothesis is consistent with statement of Lu (2012), Meihami and Karami, (2014).

5. Summary and Conclusions

This study has proved a significant effect of intellectual capital and its elements to the public universities performance in Indonesia. Relational capital, which is an element of intellectual capital, contributed a very strong influence on the universities in Indonesia performance rather than two others of IC elements e.g. human capital and structural capital. A concern is needed for universities in Indonesia to ensure the transparency of information from these institutions by building a transparency and accountability information, so that it can drive the

management to understand the need of intellectual capital. References Ali, I., Akhter, W., Afzal, H., and Zia, M. (2010). Effects of knowledge management practices on organizational innovativeness and performance: Evidence from SME Sector of Pakistan, *Actual Problems of Economics*, 12(2), 3-7. Amin, M., Wan Ismail, W.K., Abdul Rasid S.Z and Andrew Selemani, R.D., (2014), The Impact of Human Resources Management Practices on Performance. Evidence from a Public University. *The TGM Journal* Vol.26 No.2 pp 125-142. Benzhan, I. (2010). Intellectual Capital Reporting at UK Universities. *Journal of Intellectual Capital* Vol. 11 No. 2, 2010 pp. 179-207. Bontis, N., Keow, W.C. and Richardson, S. (2000). Intellectual capital and business performance in Malaysian industries. *Journal of Intellectual Capital*, Vol. 1 No. 1, pp. 85-100. Can˜ibano, L. and Sa´nchez, P.,M (2009). Intangibles in universities: current challenges for measuring and reporting. *Journal of Human Resource Costing and Accounting*, Vol 13 No. 2, pp. 93-104. Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, New Jersey: Lawrence Erlbaum Associates. Chin, W.W. (1998). The partial least squares approach for structural equation modelling. In G.A. Marcoulides (Ed.), *Modern methods for business research* (pp.295-236). London: Lawrence Erlbaum Associates. Fazlagic, A. (2006). Measuring the intellectual capital of a university. Paper presented at Conference on Trends in the Management of Human Resources in Higher Education. Hair, J., T.Hult, C . Ringle and M. Sartstedt, (2013). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Los Angeles: Sage. Isaac Robert., M. Herremans Irene and J. Kline Theresa, (2010), Intellectual capital management enablers; a structural equation modeling analysis. *Journal of Business Ethics*, 93 (3). Jones, N., Meadow, C., and Sicilia, M.A., (2009). Measuring intellectual capital in higher education. *Journal of Information and Knowledge Management* 8 (2), 113 – 136. Khalique, M., J.A.N. Shaari, A.H.b. Md. Isa, A. Ageel, (2011). Role of intellectual capital on the organizational performance of electrical and electronic SMEs in Pakistan. *International Journal of Business Management*, 6(9). Kock, N, (2013). Advanced mediating effects tests, multi-group analyses and measurement model assessments in PLS-based SEM. Laredo, TX: ScriptWarp Systems. Leitner, K.H. (2002). Intellectual capital reporting for universities: conceptual background and application within the reorganization of Austrian universities. Paper presented at The Transparent Enterprise, The Value of Intangibles Conference, Autonomous University of Madrid Ministry of Economy, Madrid. Lu, Wen-Min, (2012). Intellectual Capital and University Performance in Taiwan, *Economic Modeling Journal*, 29, pp. 1081-1089 Meihami, B and Karimi, J. (2014). The Relationship between Intellectual Capital Reporting and Universities performance. *MAGNT Research Report* . ISSN. 1444-8939. Vol 2 (5) pp. 748-754 Puspitahati, A., Ulum, I, dan Prasetyo, A. (2011). Analisis Pengungkapan Intellectual Capital pada Website Tiga Perguruan Tinggi di Indonesia. Proceeding Seminar Nasional and Call for Paper. FE Univ. Muhammadiyah Sidoarjo, 19 Pebruari 2011. Ramı́rez, Y., Santos, J. F., and Tejada, A. (2011). Intellectual capital in Spanish public universities: Stakeholders’ information needs. *Journal of Intellectual Capital*, Vol. 12, pp 356–376. Ramı́rez, Y., (2013). Intellectual Capital Management and Reporting in European Higher Education Institutions, *Intangible Capital* (2013) -9 (1):1-19 Online Ramirez.Y and Gordillo.S., (2014). Recognition and Measurement of Intellectual Capital in Spanish Universities. *Journal of Intellectual Capital*, Vol. 15 No. 1, pp. 173-188. Sadalia.I and Lubis., N. (2015), Discriminant Analysis of Intellectual Capital Model of state University in Medan. *Procedia-Social and Behavioral Sciences* 211, (476-480) Sanchez, M.P. and Elena, S. (2006). Intellectual Capital in Universities. Improving transparency and internal management. *Journal of Intellectual Capital*, Vol. 7 No. 4, pp. 529-48. Shaari, J.A.N., M. Khalique and A.H.b. Md. Isa, (2011). Ranking of Public and Domestic Private SectorCommercial Banks in Pakistan on the Basis of the Intellectual Capital Performance. *Proceedings of International Borneo Business Conference (BBC2010)*,1. Sharabati, A.A., S.N. Jawad, N. Bontis, (2010). Intellectual capital and business performance in the pharmaceutical sector of Jordan. *Management Decision*, 48(1). Stevens, R. H., (2011). Comparison and Association of Intellectual Capital: Investigation and Measurement of the Value of Intellectual Capital Assents and their Contribution to stakeholders perception within the framework of Higher Education,. Unpublished DBA, dissertation

Alliant International University, San Diego CA, USA. Ulum, Ihyaul. (2012). Konstruksi Komponen Intellectual Capital Untuk Perguruan Tinggi di Indonesia. Jurnal Review Akuntansi & Keuangan ISSN; 2088-0685. Vol 2 No.2 pp 251-262

Veltri, S., Mastroleo, G. and Schaffhauser, M. (2012). Measuring Intellectual Capital in the university sector using a fuzzy logic expert system. Knowledge Management Research and Practice, Advanced Online Publication, doi: 10.1057/kmrp.2012.53.

Wang, Xiaocheng, (2010). Performance measurement in universities; managerial perspective. Unpublished DBA, dissertation Faculty of Management and Governance University of Twente, Enschede, The Netherlands

Wang, W. and Chang, C. (2005). Intellectual Capital and Performance in causal models: evidence from the information technology industry in Taiwan, Journal of Intellectual Capital, Vol. 6.No. 2, pp. 222-36.

Wang, Z, Wang., X, Liang., H, (2014). Knowledge Sharing, Intellectual Capital and Firm Performance, Management Decision, Vol.52, No.2 pp.230-258

Wu, H.Y., Chen, J.K. and Chen, I.S. (2012). Ways to promote valuable innovation: intellectual capital assessment for higher education system. Quall Quant, Vol. 46 No. 1, pp. 1377-1391.

Yusof, K. (2008). University Governance in Malaysia. Paper presented at Regional Seminar on University Governance in Southeast Asian Countries, Luang Prabang, Lao PDR. 1 2 3 4 5 6 7 8 9 10 11 12