An Exploratory Factor Analysis for Validation of a Measurement of Organizational Excellence Construct among Universities in the Central Region of Uganda

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Abstract

With the increased competition and interest in organizational excellence, higher education institutions worldwide have been involved in the same struggle to provide solutions to enormous challenges in the society. Therefore the purpose of this study was to develop and measure the underlying structure of the factors that determine organizational excellence construct. The study employed a 28 items questionnaire to address the objective of the study. From the 500 questionnaires distributed to staff from 6 six universities – both public and private, only 300 were valid for data analysis. The 300 lecturers were randomly selected from the six universities and the sample was deemed reasonable for using exploratory factor analysis. The findings of the exploratory factor analysis (EFA) survey revealed that there are four factors that determine organizational excellence structure. These items are recommended by the study to be used in future related research.

Keywords: organizational excellence, strategy, structure, system, shared values, exploratory factor analysis

In the today's knowledge economy and a shift of university tendencies from the traditional management to entrepreneurial institutions, higher education institutions have been submerged with forces of science and technology, customer care, internationalization, globalization, commodification and privatization among others (Aref & Rosnani , 2015). With the emergence of these new dimensions in higher education, the trend of institutional management has shifted drastically to inclusive approaches that require quality and excellent performance so as to compete on the world market. However the available evidence seem to suggest that some countries especially in the Organization of Islamic Cooperation seem to lag behind yet they have a vision of becoming countries of higher production in terms of economic and education levels (Golooba & Ahlan, 2013; OIC, 2007).

In Uganda, higher education institutions do not only depend on external technology but also lack the courage and expertise to innovate and provide scientific solutions to the enormous challenges that face the world today. For instance in Uganda most universities are still behind in terms of technical journal article publication in a continuous manner and development of staff to higher academic levels among others (Bjarnason et al., 2009; Varghes, 2011; UNESCO,

2009, 2010). Furthermore, in Uganda universities are still incapable of providing quality graduates and human resources that can measure up with today's standards globally, for instance the number of students' enrolment is higher than the qualified staff in these institutions (Kayongo, 2010; NCHE, 2006, 2010, 2011a, 2011b).

Meanwhile, since Uganda is one of the African countries that still face challenges of highly dysfunctional wasted human and financial resources and seem not to be coping with quality teaching, research and community outreach, university leadership have a responsibility of changing their management strategy to excellent transformation so as to prepare and foster critical thinking in a new generation with relevant knowledge and skills so as to create plausible citizens to address the labour market issue at the same time contribute to the development of their communities (Zeelen, 2012). Furthermore, Miiro , Othman, Sahari, and Burhan (2016) state that higher education leadership and stakeholders have an onus of shifting their institutions from tradition management style to modern ways so as to contrive the challenges of staff development and improve their performance indicator levels hence meeting the international standards of university excellence.

Problem statement

Basing on this evidence, in Uganda, stakeholders are raising concern on the dwindling and appalling performance of universities. This is observed not only in the nature of graduates that are given to society but also in PhD holders without publication. Ugandan community is full of unemployed graduates especially the youth. Therefore there is need to establish the strategies employed by universities in Uganda to transform their universities into excellent performing organizations by providing transformation education since education is a key to both transformation and development of the country. Several studies have been done across the globe to examine the transformational strategies used to attain university excellent performance. For instance (Ferrer-Balas et al., 2008) found that one of the barriers universities must address is the lack of incentive structure for endorsing changes at employee level although this requires universities to have connectors with communities to coordinate and find funding. Fuda, (2009) suggests that organizations need to understand their arena and harmonize the current state with aspirations and assumptions and thereafter align them using hard levers or bricks of alignment (strategy, scorecard, structure, system, and skills). Also the five soft alignment levers liken as mortars (standard, strength, story, symbols and sustainability) and leadership should be the impact and epicentre to ensure that all are combined towards the desirable goals. On basis this study forms the objective of examining the underlying factors that determine the concept of university excellence since there has not been a study of this nature conducted before using the seven (7) S model to determine whether strategy, structure, system and shared values determine organizational excellence among universities in Uganda.

Organizational excellence

There are several meanings or organizational excellence for instance it may refer to very good high standards of performance (Brusoni et al., 2014). Organizational excellence refers to enduring efforts and strategies for creating an interior framework of values and procedures envisioned to involve and stimulate employees to deliver products and services that achieve customer necessities within business expectations (Doherty, 2005; Gupta et al., 2008; Mohammad & Ravanfar, 2015a). With the changing knowledge economy and its high competition, many higher education institutions are putting in place strategic plans for directing the future decisions of their institutions so as to meet the mission and vision for their establishment (Immordino, Gigliotti, Ruben, & Tromp, 2012). For purposes of excellent performance, higher education institutions require to have several models integrated so as to enhance quality services and improve performance level (Ruben & Brent, 2007).

Meanwhile, a study done on 120 members of faculty in Iran by Veisi (2010) found that the majority of the members were embracing the concept of learning organization and systems thinking to improve their performance levels. In addition, in a report released by OECD (2013), it was found that most of higher education institutions have challenges even though their magnitude vary depending on the location and the level of funding. However, most of them struggle to maintain quality performance and improved and balanced modern management and governance models in relation to traditional academic values and missions of higher education institutions so as to promote scholastic excellence while resisting the drawbacks of shrinking resources. With the current pressure of ranking and political influence in higher education institutions, leadership should be aware that organizational excellence is a process that is not easy to achieve without proper strategies and planning (Brusoni et al., 2014).

However, they are several ways that an organization can opt for to reshape its functionalities so as to cope up with the needs of the time. For instance Ferrer-Balas et al. (2008) suggest that institutions should have sound leadership, with structures, technology, culture and academic freedom to address the society problems. A study done in Nigeria on polytechnics leadership by Sadiq and Mahmood (2014) found that institutions depended much on total quality management and the influence of transformational leadership to harness organizational excellent performance.

Hamid, Abdullah, Mustafa, Abidin and Ahmad, (2015) examined conceptual framework of innovation excellence model for higher education institutions and found that Total Performance Excellence Model (VBPTEM) was practiced basing on these factors in higher education institution leadership, culture, objectives and strategy, resources management, change management, innovation values, best practices, employee focused, stakeholder focused-productivity focused and total performance. Yet Nur and Mohd (2017) found that the factors namely objective and strategy, change management, resource

management, best practices and innovation were the determinants of excellence in higher institutions in Malaysia.

Equally, Kaplan (2005) indicates how the balanced scorecard complements the McKinsey 7S model and describes the influence of seven factors that include strategy, system, structure, shared values, skills, staff, and style/culture as effective strategy for organizational excellence. Marshall (2010) emphasizes that universities culture, technological advancement and strong leadership are the engineers of organizational change, yet Mohammad & Ravanfar (2015b) while analyzing Organizational Structure Based on 7S Model of Mckinsey found that organizational structure was unfavorable because of the worst conditions of operation even when common values and clerks were in place and, therefore suggested that managers should treat employees well with training sessions put in place so as to facilitate the achievement of the organizational goals. Moreover, Naipinit, Kojchavivong, Kowittayakorn and Na Sakolnakorn (2014) in their study on McKinsey 7S Model for Supply Chain Management of Local SMEs in Construction Business in Upper Northeast Region of Thailand established that most of the organizations were doing well with the implementation of this strategy with all its dimensions.

However, there were some challenges in some organizations when it came to Soft S due to lack of enough outside training and use of command instead of giving authority to others. Also Hanafizadeh and Ravasan (2011) suggest that the use of this model determines changes in organization to its robust framework that covers almost all the pertinent units of institutional functionalities. Aarabi and Mohammadkazem (2014) state that the integration of model with technology has helped many developing countries to overcome barriers that were hindering their competition on world market. Equally, Alshaher (2013) found that Universities in Mosul were successful in the implementation of E-learning due to the use of 7S model and through this strategy weaknesses and barriers of operating E-learning were curbed before the implementation. Baroto, Arvand and Ahmad (2014) in his study on Effective Strategy Implementation reveals that the integration of 7S model with balance scorecard helps the organizations to establish a comprehensive solution that contributes to solving of the most challenging huddles in implementation of organizational strategy.

In addition, Nyakeriga (2015) in her study with an objective of examining how the available human resources management practices, organizational culture and organizational leadership, organizational structure & administrative systems, and effective communication and consensus influence strategic plan implementation in the newly established public universities in Kenya found that 95% of the respondents supported the view that proper human resource practices influence the achievement of laid strategic plans for organizational performance excellence and the recommendation was that university authority should always in service their employees for better performance, skills and knowledge growth .

Conversely, a study done by Robinson (2012) found that a comparative, holistic, multiple-case study of the implementation of the strategic thinking

protocol and traditional strategic planning processes at a Southeastern university found that the use of integrated strategic thinking is suitable for advancing higher education institutions to better performance levels and therefore this study constructs of determining organizational excellence differently. Meanwhile, Kheng and Yean (2017) in a study carried out on determinants of organizational excellence on Malaysian public Universities found out that transformational leadership, quality management practices and effective entrepreneurial orientation were the key factors towards organizational excellence. Basing on this literature the conceptual framework of the study is formed to identify whether structure, systems, strategy and shared values are the true underlying factors that determine the practices of organizational excellence among Ugandan universities as compared to the findings of the previous studies. The main objectives of the study were:

1) To determine the underlying subconstructs that make up structure of the items for organizational excellence among universities in Uganda and
2) To validate the organizational excellence measurement scale based on the data

Scope of the study

The scope of the study was restricted to universities both public and private in the central region of Uganda. There are twenty nine universities but only six were chosen using simple random sampling of SPSS version 22 to represent the population of the study in 2016. The staff examined were both administrators and academicians. Administrators included vice chancellors, rectors, head of departments, and directors of campuses and institutions.

Methodology

Population and sampling technique

The population of the study was attained from twenty nine universities located in the central region of Uganda. This population was represented by a sample of six universities purposively chosen due to the fact that they have been in existence for the last fifteen (15) years since establishment.

Sample

A study sample of three hundred respondents (300) was randomly chosen from six universities. The sample comprised of both academic and administrative staff from both public and private universities. The researcher and research assistant circulated 567 questionnaires after securing permission from Uganda National Council for Science and technology (UNCST) to study the staff's perceptions towards organizational excellence practices among Ugandan universities and only 300 met the requirement of further analysis after data cleaning and scrutiny. The sample was deemed adequate enough to arrive at the desirable objective of the study using the robust technique of exploratory factor analysis (Hair, Black, Babin & Anderson, 2010).

Results and Discussions

From the stage of data collection only 415 were returned out of 567 questionnaires distributed, three hundred (300) emerged reasonable for further analysis after data cleaning, scrutiny and removal of outliers.

From the demographic details of the respondents, the results reflected that majority of them were between 30-35 years of age with 31%, 21.7% were between 36-40 years, while 9.7 were between 20-25 years and 16.7% were at 40 years and above. Gender contained males and females whereby 59.3% were males and 40.7% were females. Lecturers constituted 53.0% of the respondents, administrators were at 30.7% and those that served in both positions were 16.3%.

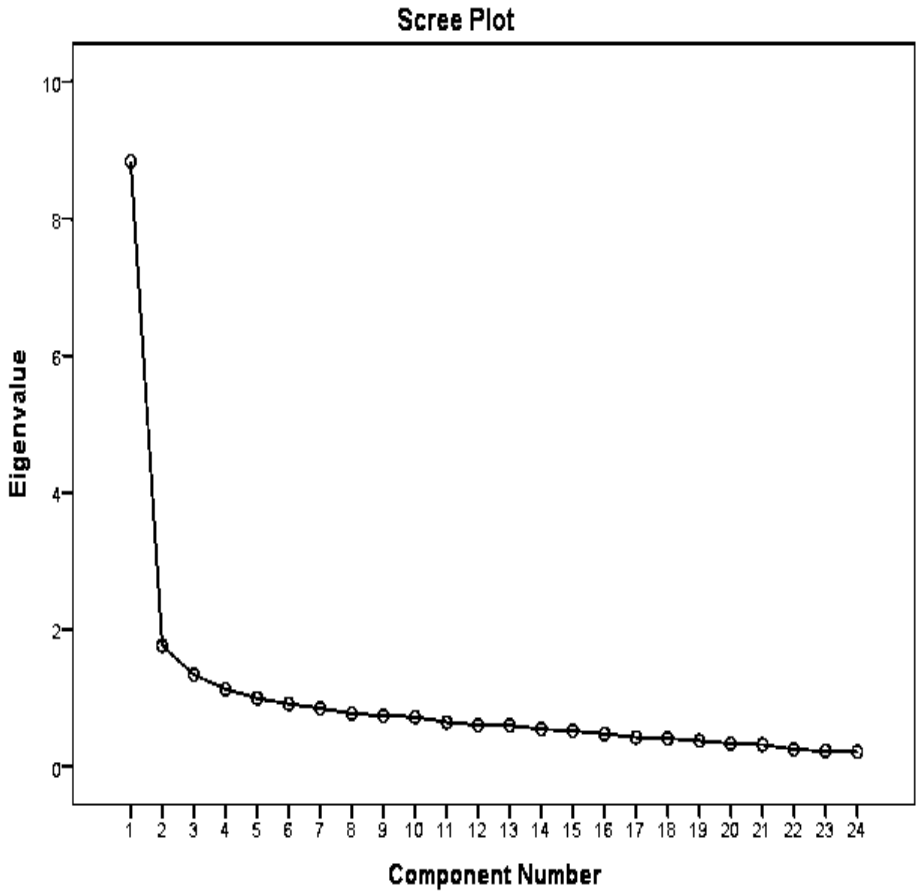

Figure 1: Scree plot

Exploratory Factor Analysis

The used variable had 28 items as included in Table 1 and each item was rated using a 5 point Likert scale ranging from strongly disagree (1) to strongly agree (5) (Hair, Black, Babin & Anderson, 2010; Kline, 2011; Osborne & Costello, 2009). Data collected was subjected to exploratory factor analysis using SPSS software/ statistical package.

The results from the analysis of factor extraction exhibited that Kaiser-Meyer-Olkin Measure of Sampling Adequacy (MSA) test and Bartlett's Test of Sphericity were suitable and adequate for the study whereby KMO was 0.900 which was above the threshold of 0.7. The Bartlett Test was statistically significant 0.000 with $\chi^2 = 3149.396$ and df 276 thus indicating that the overall correlation among the subconstructs of organizational excellence was adequate.

From the data examination, the results reflected that the eigenvalue criteria was greater than 1.0 hence exhibiting that the four subdimensions of organization excellence. The cumulative variance explained was 54.4% with no cross loading among the variables. The items were significantly correlated with communalities score values ranging between 0.46 and 0.67. Out of the twenty eight items (28) only 20 converged on the four subconstructs of the organizational excellence construct with high levels of factor loading. The first factor structure had five (5), with loadings higher than 0.50, the second factor systems/process contained five (5) items with loadings above 0.52, the third subdimension shared values also consisted of five (5) items with loadings above 0.57 and the fourth sub factor included; strategy and was comprised of five (5) items with loadings above 0.47, hence providing empirical evidence for the validity of the construct organizational excellence scale. The four factor structure of organizational excellence construct with individual items, eigenvalues, factor loadings, communalities and each factor variance explained is shown Table 1.

Table 1
Extracted Factors, Communalities, Eigenvalue and Total Variance Explained

Factor and item	1	2	3	4	Communalities	Eigenvalue	Variance explained
Structures						8.8	36.8%
My university structures are active and effective		.778			.59		
I am empowered by the structures to execute leadership roles		.807			.65		
University projects are done as per the strategic plan		.729			.55		
University structures give my department autonomy towards achievement of the set agendas.		.760			.62		
There is democratic decision making process at all levels		.506			.47		
System/processes						1.7	7.3%
My university has clear communication systems	.803				.65		
My university has a standardized system for work control	.864				.67		
The staff recognition systems are known to all staff and students	.813				.69		
The policies and performance indicators are available and are followed in all decisions	.750				.62		
University staff work systemically as a team to achieve their objectives	.531				.53		

Table 1 continued

Factor and item	1	2	3	4	Communalities	Eigenvalue	Variance explained
Shared values						1.3	1.5%
Management team and employees all together understand the university's success and targets			.580		.46		
My department's senior managers coach me very well about implementing decisions for strategic change			.792		.61		
My department's executives focus too much on current problems and too little on their possible remedies			.743		.52		
Two-way communication between executive management team and departments are very good.			.678		.54		
Organization have activities for social responsibilities			.615		.58		
Strategy						1.1	4.7%
Employees' feelings about collaboration are related to organization effect and business success				.481	.43		
My university has an operation strategy and plan				.808	.62		
The university has an organization strategy for business expansion and collaboration				.860	.65		
I am often reminded of the university mission and vision statement				.564	.46		
I enjoy contributing to the direction of the university				.628	.42		

Discussion of the findings

This research employed validated and reliable instrument from previous empirical studies published. Organizational excellence was determined basing on the definition derived from (Brusoni et al., 2014). There were 28 items of the survey tool with a Likert Scale ranging from strong agree to strongly disagree. For factor structures out of the six items only five were deemed valid and reliable for study with 8.8 Eigen Value and 36.8% variance explained. Meanwhile, for systems and process out of six items of the questionnaire only five were plausible with score between .803 and .531, Eigen Value was 1.7 and the total variance explained was 7.3%. Shared values attained six items with factors score ranging between .580 and .792, Eigen value was 1.3 with total variance at a percentage of 1.5. Lastly strategy had five items with scores ranging from .481 and .860, the Eigen value was 1.1 and 4.7% total variance explained. The study findings were reliable and valid since the scores for Cronbach Alpha ranged between .850 and .770 (See Table 2). The objectives of the study were answered since the five factors that determine the structure of organizational excellence were measured with more than three items per individual sub factor. Moreover the Cronbach Alpha also was above the minimum requirement of .07. Therefore the results of this study suggest that the items used to measure organizational excellence among universities in Uganda are worth and reasonable for measuring the structure.

Table 2
The reliability of the extracted factor structure

No	Factor	No of items	Cronbach's alpha
1	Structure	5	.817
2	System/processes	5	.850
3	Shared values	5	.789
4	Strategy	5	.770

Conclusion

The test and analysis of the above four subdimensions of the structure organizational excellence was conducted with an aim of determining the validity of items for each of the subdimensions. It can therefore be concluded that out of the twenty eight items used to gather data from the respondents, only twenty (20) are the true items of measuring organizational excellence construct according to exploratory factor analysis results among universities in Uganda. These results provide a firm and valid foundation for carrying out further studies on this same subject in other universities apart from central region of Uganda.

References

Aarabi, M., & Mohammadkazem, M. (2014). A Review of readiness assessment of ERP implementation in Iranian small and medium enterprises. *International Journal of Information Systems and Engineering*, *2*(1), 17–25. Retrieved from http://www.ftms.edu.my/journals/IJISE/Journal/ASCENT 2014/017-025-A Review of Readiness Assessment of ERP Implementation

in Iranian Small and Medium Enterprises.pdf\nhttp://www.ftms.edu.my/journals/IJISE/index.php?option=com_content&view=article&id=13&Ite

Alshaher, A. A. (2013). The Mc Kinsey 7S model framework for E-learning systems readiness assessment. *International Journal of Advances in Engineering & Technology*, *6*(5), 9744–9744.

Aref, T. A & Rosnani H, M. H. (2015). *Critical issues and reform in Muslim higher education.* (First Edit). Kuala Lumpur Malaysia: IIUM Press,IIUM. https://doi.org/10.1007/BF03192151

Baroto, M. B., Arvand, N., & Ahmad, F. S. (2014). Effective strategy implementation. *Journal of Advanced Management Science*, *2*(1), 50–54. https://doi.org/10.12720/joams.2.1.50-54

Bjarnason, S., Cheng, K. K., Fielden, J., Lemaitre, M., Levy, D., & Varghese, N. V. (2009). A new dynamic: Private higher education. *Secretary*. Retrieved from http://www.dheorissa.in/DHE/PDF/1eb502a6.pdf

Brusoni, M., Damian, R., Grifoll, S. J., Jackson, S., Kömürcügil, H., Malmedy, M., … Zobel, L. (2014). *The concept of excellence in higher education*.

Doherty, G. D. (2005). *Develping quality systems in education* (2nd ed.). London and New York: Routledge.

Ferrer-Balas, D., Adachi, J., Banas, S., Davidson, C. I., Hoshikoshi, A., Mishra, A., … Ostwald, M. (2008). An international comparative analysis of sustainability transformation across seven universities. *International Journal of Sustainability in Higher Education*, *9*(3), 295–316. https://doi.org/10.1108/14676370810885907

Fuda, P. (2009). Organisational transformation: Creating alignment from the outside-in.

Golooba, M., & Ahlan, A. R. (2013). Service value co-creation in research and Innovation practices in higher education institutions in Malaysia. *Procedia Technology*, *11*(Iceei), 342–347. https://doi.org/10.1016/j.protcy.2013.12.200

Goolamally, N., & Ahmad, J. (2014). Attributes of school leaders towards achieving sustainable leadership: A factor analysis. *Journal of Education and Learning*, *3*(1). https://doi.org/10.5539/jel.v3n1p122

Gupta, M. R., Waterman, B., Phillips, J., York, N., Managing, M., Daniel, R., … Francisco, S. (2008). A brief history of the 7-S (“ McKinsey 7-S ”) Model.

Hair, J.F. Black, W.C. Babin, B.J. & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). Upper Saddle River,: NJ: Pearson Prentice Hall Pearson Education.

Hamid, M. R. A., Abdullah, M., Mustafa, Z., Abidin, N. B. binti Z., & Ahmad, H. (2015). Conceptual framework of innovation excellence model for higher education institutions. *Procedia - Social and Behavioral Sciences*, *174*, 2846–2848. https://doi.org/10.1016/j.sbspro.2015.01.977

Hanafizadeh, P., & Ravasan, A. Z. (2011). A McKinsey 7S model-based framework for ERP readiness assessment. *International Journal of*

Enterprise Information Systems, *7*(4), 23–63. https://doi.org/10.4018/jeis.2011100103

Immordino, K. M., Gigliotti, R. A., Ruben, B. D., & Tromp, S. (2012). Evaluating the impact of strategic planning in higher education. *Educational Planning*, *23*(1), 35–47.

Kaplan, R. S. (2005). How the balanced scorecard complements the McKinsey 7-S model. *Strategy & Leadership*, *33*(3), 41–46. https://doi.org/10.1108/10878570510594442

Kayongo, P. M. (2010). *E - Learning services vs. physical education institutions: Which way to go in financial terms. NCHE*.

Kline, R. B. (2011). *Principles and practices of structural eqaution modeling*. (T. D.Little, Ed.) (3rd ed.). New York: The Guilford Press New York London.

Marshall, S. (2010). Change, technology and higher education: are universities capable of organisational change? *Alt-J*, *18*(3), 179–192. https://doi.org/10.1080/09687769.2010.529107

Miiro F, Othman, A., Sahari, M., & Burhan, M. (2016). A Measurement model of talent management practices among university staff in Central. *Journal of Positive Management*, *7*(3), 3–19.

Mohammad, B., & Ravanfar, M. (2015a). Analyzing organizational structure based on 7S model of Mckinsey. *Global Journal of Management and Business Research: A Administration and Management*, *15*(10), 43–55. https://doi.org/10.6007/IJARBSS/v5-i5/1591

Mohammad, B., & Ravanfar, M. (2015b). Analyzing organizational structure based on 7S model of Mckinsey, *15*(10), 43–55. https://doi.org/10.6007/IJARBSS/v5-i5/1591

N.V.Varghes. (2011). *Globalization and cross-border education : of higher education in. UNESCO*.

Naipinit, T., Kojchavivong, S., Kowittayakorn, V., & Na Sakolnakorn, T. P. (2014). McKinsey 7S model for supply chain management of local SMEs construction business in upper northeast region of Thailand. *Asian Social Science*, *10*(8), 35–41. https://doi.org/10.5539/ass.v10n8p35

NCHE. (2006). *The state of higher education and training in Uganda 2011: A report on higher education delivery and institutions*. Retrieved from http://www.unche.or.ug/wp-content/uploads/2014/04/The-State-of-Higher-Education-2011.pdf

NCHE. (2010). *The state of higher education and training in Uganda 2011: A report on higher education delivery and institutions*. Kampala. Retrieved from http://www.unche.or.ug/wp-content/uploads/2014/04/The-State-of-Higher-Education-2011.pdf

NCHE. (2011a). *National Council for Higher Education*.

NCHE. (2011b). *The state of higher education and training in Uganda 2011: A report on higher education delivery and institutions*. Kampala: NCHE. Retrieved from http://www.unche.or.ug/wp-content/uploads/2014/04/The-State-of-Higher-Education-2011.pdf

Nur, B. B. Z. A. & Mohd, H. R. B. A. (2017). Value-based higher education innovation model: A theorectical foundation. *Journal of Engineering and Applied Sciecnes*, *12*(4), 4.

Nyakeriga, C. K. (2015). *Factors influencing strategic plan implementation in the newly established public universities in Kenya*. Eastern Kenya University.

OECD. (2013). The state of higher education. *The OECD Higher Education Programme*, (June), 1–5.

OIC. (2007). *Research and scientific development in OIC countries*.

Osborne, J. W., & Costello, A. B. (2009). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Pan-Pacific Management Review*, *12*(2), 131–146. Retrieved from http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:Best+Practices+in+Exploratory+FActor+Analysis:+Four+Recommendations+For+Getting+the+Most+FRom+Your+Analysis#2\nhttp://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:Best+practices+in+

Robinson, D. J. (2012). Implementation of the strategic thinking protocol © by, (May).

Ruben, B. D., & Brent, D. (2007). *Higher Education Guide*. Washington, D.C.: National Association of College and University Business OfficersWashington, D.C.

Sadiq, M. A., & Mahmood, R. B. (2014). A look into the underlying structure of the Items that make up the organisational excellence and transformational leadership scales in higher education institution in Nigeria. *Journal of Management Policies and Practices*, *2*(2), 203–215.

UNESCO. (2009). Mapping scientific research in member states of the Organization of Islamic Conference (OIC): Research summary; UNESCO Forum occasional paper series; Vol.:17; 2009. *UNESC)*, *17*, 32.

UNESCO. (2010). World conference on higher education: Final report. *Higher Education*, *81*. Retrieved from http://unesdoc.unesco.org/images/0018/001892/189242e.pdf

Veisi, H. (2010). Organizational learning in the higher education institutions: A case study of Agricultural and Natural Resourses Campus of University of Tehran. *Initernational Online Journal of Educational Sciences*, *2*(1), 21–36.

Yeoh Khar Kheng, & A. C. T. Y. (2017). Determinants of organisatonal excellence of Malaysian public univeristies. *International Bussiness Management*, *11*(6), 1169–1179.

Zeelen, J. (2012). Universities in Africa: Working on excellence for whom? Reflections on teaching, research, and outreach activities at African universities. *International Journal of Higher Education*, *1*(2), 157–165. https://doi.org/10.5430/ijhe.v1n2p157