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ASSESSING THE PERFORMANCE OF UNIVERSITIES IN THE MALAY ARCHIPELAGO THROUGH THE INTANGIBLE ELEMENT OF HUMAN CAPITAL RESOURCES: A LITERATURE REVIEW

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Abstract

A university's performance ranking is frequently used as an important gauge when transforming a country's education system. In this era of globalisation, Industrial Revolution 4 and developments in Artificial Intelligence (AI) have an extraordinary effect on a university's performance, especially in terms of empowering human skills among employees, both at the academic as well as student levels. Unfortunately, a university's performance, especially in the Malay Archipelago, has a quality gap, although in reality the progress of national development in this region is almost balanced. This is because various criteria and indicators for evaluating a university's performance is beyond the activities that involve human capital resources owned by the university. Hence, this study examines the importance of human capital resources with various intangible elements, such as human capital, social capital, positive psychological capital and spiritual capital, are the main factors that decide on the different effectiveness of performance and ranking of a university in the Malay Archipelago. Therefore, it is important for universities and policy makes to know the need for enhancing the quality and standards of human capital resources through various intangible elements in order to increase the university's performance and ranking at the international level.

Introduction

Globalisation has an extraordinary effect on transforming the higher education system in most countries (Marginson & Wende, 2007; Tilak, 2016). This is proven through planning and development policies drawn up by every higher education institution in the Malay Archipelago with the focus of developing an education system that can carry the university's name and performance to a world class level and to compete with the world's leading universities (Marginson, 2007; Ishikawa, 2009; Tilak, 2016;

Boyadjieva, 2017). Besides that, universities are required to initiate reformation and management in the university based on the New Public Management (NPM) concept, with one of its main products being enhancing focus on measuring performance and exposing it, mainly in relation to achieving effectiveness and quality through teaching and learning activities, research as well as community service activities, which are the three main missions for setting up a university (Sardesai & Guthrie, 2018). This situation makes the evaluation of a university's performance and ranking a global phenomenon, very famous as well as an important element for a university when influencing interactions with interested parties (Rindova & Martins, 2012; Rindova, Martins, Srinivas & Chandler, 2018).

This study argues that the initiative to enhance a university's performance is a need that has been planned in order to develop one or more universities that are of world standard because a world class university contributes to a country's economic and social status and the area where it is located (Tee, 2016). This factor has made governments all over the world, both in Asia (including the Malay Archipelago) and Europe, strongly motivated to restructure their higher education system and develop a "world class university" (Deem et al., 2008). It is generally known that a world class university can produce excellent products that benefit a country's development as well as the surrounding area, such as producing sophisticated research through licence, patents and high quality publications and a high ranking as well as produce skilled and professional graduates (Salmi, 2009). A world class university possesses academic staff, excellent students, innumerable and various sources of funds, offers a conducive learning and research environment, a transparent governance system that encourages the achievement of its mission and strategic innovations, and react effectively to global market demands that are increasingly complex and changing (Wang et al., 2012; Tee, 2016).

An evaluation of a university's performance and ranking by the Academic Ranking of World Universities (ARWU) of Shanghai Jiao Tong University, Times Higher Education (THE) World University Rankings and Quacquarelli Symonds (QS) World University Rankings in 2018 shows the actual situation whereby the university's resources, status and ranking in the "league table" global competition is unequally distributed. At the international level, universities in Western countries, including the United States, still dominate the top 10 ranked universities, especially in the developed countries. A similar phenomenon has occurred to university rankings in South East Asia. The evaluation of university performances by Quacquarelli Symonds (QS) World University Rankings in 2018 shows that rankings held by Singapore universities are still dominant compared to rankings of universities from other countries in the Malay Archipelago. Tables 1 and 2 show the rankings for universities in the Malay Archipelago according to Times Higher Education (THE) and Quacquarelli Symonds (QS) University Rankings for 2020.

Table 1. Top 1000 University Rankings in the Malay Archipelago According to Times Higher Education (THE) Asia University Rankings for 2020

Asian Ranking	World Ranking	University	Country	Value
3	25	National University of Singapore	Singapore	81.1
6	48	Nanyang Technological University, Singapore	Singapore	72.1
43	301-350	University of Malaya	Malaysia	44.5–46.8
60	401-500	Universiti Brunei Darussalam	Brunei Darussalam	38.8–42.3
65	401-500	University of the Philippines	Philippines	38.8–42.3
119	501-600	Universiti Tunku Abdul Rahman (UTAR)	Malaysia	35.3–38.7
122	601-800	Mahidol University	Thailand	28.3–35.2
124	601-800	Universiti Teknologi Petronas	Malaysia	28.3–35.2

Asian Ranking	World Ranking	University	Country	Value
134	601-800	Mae Fah Luang University	Thailand	28.3–35.2
143	601-800	Universiti Teknologi Malaysia	Malaysia	28.3–35.2
145	601-800	Universiti Putra Malaysia	Malaysia	28.3–35.2
156	601-800	Universiti Sains Malaysia	Malaysia	28.3–35.2
160	601-800	Universiti Kebangsaan Malaysia	Malaysia	28.3–35.2
162	601-800	University of Indonesia	Indonesia	28.3–35.2
165	601-800	Universiti Malaysia Perlis	Malaysia	28.3–35.2
201-250	801-1000	Chulalongkorn University	Thailand	22.2–28.2
201-250	801-1000	Universiti Tenaga Nasional (UNITEN)	Malaysia	22.2–28.2
201-250	801-1000	Vietnam National University, Hanoi	Vietnam	22.2–28.2
251–300	801-1000	Hanoi University of Science and Technology	Vietnam	22.2–28.2
251–300	801-1000	Universiti Utara Malaysia	Malaysia	22.2–28.2

Source: https://www.timeshighereducation.com/world-university-rankings/2020/

Table 2. Top 500 University Rankings in the Malay Archipelago According to Quacquarelli Symonds (QS) University Rankings for 2020

World Ranking	University	Country	Value
11	Nanyang Technological University (NTU)	Singapore	91.1
11	National University of Singapore (NUS)	Singapore	91.1
70	Universiti Malaya (UM)	Malaysia	67.0
159	Universiti Putra Malaysia (UPM)	Malaysia	48.0
160	Universiti Kebangsaan Malaysia (UKM)	Malaysia	48.0
165	Universiti Sains Malaysia (USM)	Malaysia	47.1
217	Universiti Teknologi Malaysia	Malaysia	41.4
247	Chulalongkorn University	Thailand	38.0
296	Universitas Indonesia	Indonesia	34.1
298	Universiti Brunei Darussalam	Brunei Darussalam	34.1
314	Mahidol University	Thailand	33.0
320	Bandung Institute of Technology (ITB)	Indonesia	32.0
331	Gadjah Mada University	Indonesia	33.0
356	University of the Philippines	Philippines	30.1
379	Universiti Teknologi Brunei	Brunei Darussalam	28.1
442	UCSI University	Malaysia	26.0
477	Singapore Management University	Singapore	24.1
482	Universiti Teknologi Petronas (UTP)	Malaysia	24.1

Source:https://www.topuniversities.com/university-rankings/world-university-rankings/2020

Based on this information, the question arises of what causes the difference and unequal distribution of university rankings among various countries in the Malay Archipelago. Meanwhile, regards to the performance and ranking evaluation system, each university in the Malay Archipelago uses the same indicators and is evaluated by the same performance evaluation institution. Upon further investigation, it was found that various criteria and university performance indicators that were evaluated were found to have sidestepped activities involving human capital resources owned by each university. This study argues that the effectiveness, or the lack of it, of a university's performance is very much determined by the performance and quality of its human capital resources, such as lecturers or academicians, administrative and service personnel, students, university leaders etc.

According to Muslim Amin, et al., (2014), human capital resources contribute immensely towards enhancing the evaluation of a university's main activities, such as high quality research, the faculty's academic reputation, quality of the academic

program, contribution of the research towards society and the industry, efforts towards preparing tomorrow's leaders and the quality of graduates. From a conventional perspective, universities are tasked to develop human capital that is competitive, of quality as well as responsible to society and the employment market. Universities are also tasked with creating technological knowledge and innovations by executing various activities, such as carrying out basic research, creating and commercialising new products or processes in the form of patents or licences based on products or research findings.

In addition, universities also prepare or provide experts who serve to develop their local areas by directly participating in an institution or committee, providing funds and technical support, helping solve conflicts etc. (Drucker & Goldstein, 2007). Hence, in order to achieve a university's objectives, which mainly comprise intangible elements, the management and investment in human capital resources is important for enhancing the effectiveness of the university's performance and ranking, either at the local or international level (Sanchez & Elena, 2006; Ramirez, Lorduy & Rojas, 2007; Ramirez & Gordillo, 2014; Bornemann & Wiedenhofer, 2014).

This study found that numerous studies have shown the importance of human capital resources in determining an organisation's performance and success as well as providing the best return on investment (ROI) for maintaining a sustainable competitive advantage (Becker & Huselid, 2006; Ployhart & Moliterno, 2011; Ployhart, et al., 2014; Nyberg, et al., 2014; Mayer, et.al., 2012; Mawdsley & Somaya, 2016; Delery & Roumpi, 2017; Boon, et.al., 2018). Therefore, although numerous studies have shown the importance of human capital resources being one of the factors that determine the effectiveness of a university's performance and ranking (Sardesai & Guthrie, 2018), this study steadfastly argues that the elements and dimensions of intangible elements found in human capital resources are still limited, especially in the university context. Hence, it is paramount that this study elaborates, identifies and analyses the elements and dimensions of intangible elements in human capital resources that determine the effectiveness of performances and rankings of universities in the Malay Archipelago (Nusantara).

Performance of Universities in The Malay Archipelago (Nusantara) And Their World Rankings

In the era of knowledge-based economy, majority of universities in the Malay Archipelago have contributed immensely to economic growth and progress of a country's civilization (OECD, 1996 in Cricelli, et al., 2018). Numerous studies have shown the significant contributions made by universities in the field of system innovations as well as social and economic development of a country (Sanchez & Elena, 2006; Lu, 2012; Dumay et.al., 2015; Tee, 2016; Secundo et al., 2016; Cricelli et. al., 2018). The government and policy makers, mainly in developing countries, have carried out various interventions in the field of higher education to develop and enhance the performance of universities in their countries in order to achieve world class standard universities. This requires committed efforts to improve the status and performance of universities in order to compete and become a top-ranking university at the international level (Marginson, 2007; Ishikawa, 2009; Tilak, 2016; Boyadjieva, 2017).

To ensure that these objectives are achieved, this study sees the importance in evaluating the effectiveness of a university achieving its performance through performance indicators that have a direct and significant relationship with its strategic planning and function (Tee, 2016). According to Tee (2016), the objective of using performance indicators is to enhance efficiency, effectiveness and increase the economic capability of a university. Generally, performance indicators are classified into two types, which are measuring results by focusing on quantity and measuring the degree by which the results focus on quality. For example, ratio of the number of publications to the academic staff by measuring the number of researches, whereas the number of citations is based on measuring the quality of the research. Tee (2016) also

stated that research and teaching are a university's two core activities and its performance or quality should be monitored and evaluated by using performance indicators. This provides information for comparisons, making policies, a benchmark for performance as well as accountability for the public and interested parties, such as students and their families.

One way of gauging the effectiveness of a university's performance is to look at the status and ranking in the ranking list of universities at the international level (Marginson, 2007; Ishikawa, 2009; Tilak, 2016; Boyadjieva, 2017). The ranking of a university will make it popular and important because the ranking is a a form of information intermediation, comparative ordering, and a tool or means of surveillance and control (Rindova, et. al., 2018). Rindova et al. (2018) explained that according to the information intermediation perspective, the institution's ranking is important because the information is comprehensive and easily accessible to interested parties as well as related to an institution's performance indicators. Whereas, comparative orderings show that the ranking is a representation of status, reputation and prestige of an institution being evaluated and according to the surveillance and control perspective, the ranking is a manifestation of a bigger socio-political process, such as the similarities, quantification and auditing, which enables an organisation to follow bigger political and economic interests.

Tilak (2016) also mentioned about the numerous benefits of evaluating a university's ranking at the global level. Some of these benefits help to determine a university's level of performance compared to another, stimulate competition, provide useful information about the university's situation to interested parties, such as students, academic staff, policy makers and other interested parties, a high ranking will help attract better local and international students and academic staff to combine together, help build a a university's professional reputation and brand, help obtain additional funds from the public and private sectors, ensure a transparent university management, shift the government's focus on the importance of the university's ranking at the global level and form a quality control mechanism in efforts to develop a world class university by focusing on achieving the best ranking at the global level. This study is of the view that the ranking system has forced many universities to increase their ranking standards, specifically to enhance the quality of teaching, learning and research programs as well as identify other fields for improvement. The benchmark for university rankings has been used as a guide for outlining suitable indicators that focus on improving a university's ranking. As for universities already among the top ranked in the world, they can use it to maintain or better their rankings.

According to Boyadjieva (2017), efforts towards improving university rankings at the global level has become a phenomenon among most universities in the world. This study admits that this radical phenomenon also occurs in many universities in the Malay Archipelago because of several issues and trends that have been questioned in the higher education circle, as mentioned below.

1. Mass produce higher education and build a variation of students in universities.
2. Increasing competition in the higher education system at the national and international levels.
3. Internationalisation of higher education.
4. Commercialisation of higher education and inclusion of a marketing mechanism.
5. A variety of institutions that offer post-secondary education.
6. Changing the status of knowledge in modern society.

This study is of the view that the present scenario has increased the quality of potential university clients, such as students, families and employers, in order to obtain information for making the best choice among the variety of programs offered by the university. Hence, in order to fulfil this need, most universities in the Malay Archipelago have set almost similar criteria and indicators for measuring performance compared to the performance of other universities. The philosophy of forming a university should be explained and it frequently plays a more specific role when

exploring the education services market by enriching the corpus of scientific knowledge. Boyadjieva (2017) also suggested that university rankings are related to a specialising university, whereby it is very difficult to determine the quality and there is no mechanism to explicitly measure its objectives related to the quality and quantity of its output. Hence, a university's ranking will provide an objective input during discussions or evaluations about the indicators that form the quality of a university (Morphew & Swanson, 2011).

Therefore, efforts to improve a university's ranking at the global level faces immense criticism. According to Boyadjieva (2017) and Teichler (2011), there are nine main arguments about the weakness of the ranking system, which are the vicious circle of increasing distortion, endemic weakness in data and indicators, lack of consensus on quality, imperialism through rankings, systematic bias from rankings, preoccupation with aggregates, praise and push towards concentration of resources and quality, and reinforcement or a push towards steeply stratified system rankings that undermine meritocracy. This study also found arguments by scholars that global university rankings are supported by research-based institutions with a forte in the field of science, use of English, old institutions in countries that have long-ranking traditions and slight variation in intra-institutions (Altbach, 2011; Kehm, 2014; Teichler, 2011). Rankings also drive competition among universities in the higher education market as well as act as an instrument in verifying, transforming and reproducing prestige and power in higher education (Marginson, 2009; 2014).

How Is Performance and Ranking Evaluated?

A university's performance and ranking has emerged as an evaluating tool in a country's higher education system (Marginson, 2007; Ishikawa, 2009; Tilak, 2016; Boyadjieva, 2017). Each country plans and develops a tool for measuring its universities' performance in according with its local needs, either comprehensively measuring a university's performance or as one of its missions. For example, when measuring a university's performance in the research field, there is the Research Excellence Framework in several Western countries, Performance Based Research Funding in New Zealand, and similar measuring protocols in other European countries. In 2010, Australia's Australian Research Council (ARC) evaluated the performance of research universities under the Excellence in Research for Australia (ERA) initiative. ERA provides an administrative mechanism whereby the performances of research universities are collected, measured and reported to the ARC for evaluation (Sardesai & Guthrie, 2018).

Evaluating a university's performance and ranking also occurs in countries in the Malay Archipelago. In Malaysia, the Department of Higher Education in the Ministry of Education Malaysia has developed a KPI for public universities in Malaysia (Muslim Amin, et al., 2014). There are five (5) main Key Performance Indexes (KPI) that were identified in this study, which are research, publication, internationalization/ networking and linkage, teaching, supervision and leadership. As for Malaysian universities, the example given is the status of a "research university" in 2010, that had formed its own KPI comprising an international ranking with reputation, experienced graduates and excellence at the global level, adequate funds for research, development, infrastructure and facilities, a good reputation for attracting students, a relevant curriculum for academic and professional development programs, a high number of post-graduate students, accredited academic programs, scientific publications and number of citations, good marketing and branding capabilities as well as good national and international linkages (Muslim Amin, et al., 2014).

Meanwhile in Indonesia, the Kementerian Riset dan Pendidikan Tinggi (Kemeristekdikti) had developed indicators used for evaluating a university's performance and ranking. There are four elements used to evaluate a university's performance. First is good quality human capital resources, which is measured using indicators such as the percentage of lecturers with a Doctor of Philosophy qualification, percentage of lecturers in the Jabatan Lektor Kepala dan Guru Besar/Profesor, and the

ratio of students to lecturers. Second, institutional quality that is measured using indicators such as accreditation by the Akreditasi Institusi Badan Akreditasi Nasional – Perguruan Tinggi (BAN-PT), accreditation of study programs by BAN-PT, number of programs accredited internationally and the number of foreign students. Third, quality of student affairs that is measured using indicators such as student's performance at national and international competitions. Fourth, quality of research and services to the community measured using the performance of the research, performance of community service activities and the number of indexed scientific articles per lecturer (Kemeristekdikti, 2017). Various elements and indicators for measuring the performance of universities is used to measure the performance and ranking of universities in Indonesia.

At the global level, numerous models with performance measurement indicators and universities with world class rankings have been formulated by famous ranking evaluation institutions, such as Academic Ranking of World Universities (ARWU) of Shanghai Jiao Tong University and Quacquarelli Symonds (QS) World University Rankings, which were first introduced in 2003, Times Higher Education (THE) World University Rankings, which was first introduced in 2004, Leiden University, Scimago, European Union's U-Multirank, Ranking Web or Webometrics Ranking of World Universities, which was developed by Cybermetrics Lab (Spanish National Research Council) in 2004, as well as other evaluation institutions in each country (Marginson, 2014; Yudkevich, et al., 2015; Tilak, 2016; Boyadjieva, 2017). Each performance evaluation and global university ranking system uses different criteria and indicators.

For example, according to Quacquarelli Symonds (QS) University Rankings, a university's ranking is determined by the university's performance according to various criteria, such as academic reputation (40%), university's reputation (20%), citations by each lecturer (20%), teaching quality (10%) and internationalisation (rate of international students and lecturers) (5%). Meanwhile, according to the Times Higher Education (THE) University Rankings, a university's ranking is highly determined by the university's performance, which is evaluated by using 13 indicators that are divided into 5 criteria, such as teaching (30%), research (30%), citations from lecturers (30%), generating income from the industry through knowledge transfer activities (2.5%), and internationalisation (7.5%) (Tilak, 2016; Boyadjieva, 2017). Diagram 3 shows the indicators and rates used by 3 ranking systems for international universities.

Diagram 3. Indicators and rates used in three international university ranking systems

Ranking system	Criteria	Indicators	Weight
Academic Ranking of World Universities (ARWU)	Quality of Faculty	Staff of an institution winning Nobel Prizes and Fields Medals	20%
		Highly cited research in 21 broad subject categories	20%
	Research Output	Papers published in Nature and Science	20%
		Papers indexed in Science Citation Index-expanded and Social Science Citation Index	20%
	Per Capita Performance	Per capita academic performance of an institution	10%
	Quality of Education	Alumni of an institution winning Nobel Prizes and Fields Medals	10%
Quacquarelli Symonds (QS) World University Rankings	Academic Reputation	QS Global Academic Survey	40%
	Employer reputation	QS Global Employer Survey	20%
	Citations	Citations per faculty	20%
	Teaching Quality	Faculty–student ratio	10%

Ranking system	Criteria	Indicators	Weight
	Internationalization	Proportion of faculty members that are international	5%
		Proportion of students that are international	5%
Times Higher Education (THE) World University Rankings	Teaching	Academic reputation survey (teaching)	15%
		Staff-to-student ratio	4.50%
		Doctoral to bachelor's degrees awarded	6%
		Number of doctorates awarded	2.25%
		Institutional income scaled per academic	2.25%
	Research	Academic reputation survey (research)	18%
		University research income	6%
		Number of papers published in the academic journals indexed by Thomson Reuters per academic	6%
	Citations	Citations (5 years)	30%
	Industry income	Income from industry (knowledge transfer)	2.50%
	International outlook	Ratio of international to domestic students	2.50%
		Ratio of international to domestic staff	2.50%
		Proportion of a university's total research journal publications that have at least one international author	2.50%

Source: Tilak (2016)

Therefore, this study argues that all models that measure performance and world class university rankings are still not comprehensive for evaluating all aspects of a university's mission and activities. This is mainly related to the aspect of philosophy, such as methodology, choice of indicators and weights attached to each indicator, quality and reliability of data and the basis for comparing a variety of complex institutions (Marginson, 2014; Tilak, 2016). For example, each evaluating institution considers different indicators as a proxy for evaluating various aspects of a university because it is determined by the promoter of each system. For example, ARWU focuses only on research aspects, until there are no valid indicators in the rating system that measures the quality of teaching or achievements of the current learning process. Meanwhile, Web Ranking or Webometrics, only focuses on Web contents and measures the quality of a university's activity found in the Web and 60% of THE-QS's focus is on scientific research sourced from Western countries (Marginson, 2014; Tilak, 2016). Webometrics and ARWU have neglected the mission, objectives and aim of various universities and equated research universities with other universities. Webometrics and ARWU also neglected financial, material, human capital resources and physical infrastructure as well as other factors related to the university (Marginson, 2014; Tilak, 2016). However, decisions pertaining to the university's evaluation of performance and global ranking from various major evaluation institutions are frequently similar, especially universities that are ranked at the top, but the ranking of other universities at the middle usually vary between the various systematic levels.

The Effect of Intangible Elements in Human Capital Resources When Measuring The Effectiveness Of A University's Performance

Luthan et al. (2004) stated that human resources management, which comprises the capability to effectively develop and manage knowledge, while collectively managing experience, skills and employee expertise, are the main factors that determine the successful performance of an organisation in a current environment that is flexible with fast phased innovations. Therefore, the organisation's manager not only invests in physical resources and tangible assets, such as facilities, engines, technology and various other equipment but also investment in human capital resources with various intangible elements in order to secure future projected returns.

The importance of human capital resources has been proven in numerous studies. At the macro level, human capital resources is the main factor in economic growth and transition productivity, beginning from the industrial revolution level that emphasises the importance of physical capital to the modern industrial revolution that emphasises the importance of human capital resources with various intangible elements (Galor & Moav, 2004). Meanwhile at the micro level, evidence shows that human capital resources is paramount for an organisation's success and offers the best returns on investment (ROI) for a sustainable competitive advantage (Becker & Huselid, 2006; Ployhart dan Moliterno, 2011; Ployhart, et al., 2014; Nyberg, et al., 2014 Mayer, et. al., 2012; Mawdsley & Somaya, 2016; Delery & Roumpi, 2017; Boon, et. al., 2018).

This situation also occurs in universities in the Malay Archipelago. The university is an institution that is conventionally tasked to develop competent and responsible human capital for society's needs and the labour market. Thus, for this reason, the university should play a more holistic role in building cognitive, psychomotor and affective elements among students. This also shows that universities not only produce a work force solely for physical development, but more importantly, produce individuals who are complete in terms of morality and skills that are intangible in nature, capable of working and functioning as trustworthy citizens with a high level of social awareness.

Universities are tasked with creating knowledge and technological innovations by carrying various activities, such as basic research as well as creating and commercialising products or new processes in the form of patents or licensing based on products or research findings that have commercial value. In addition, universities also provide experts for developing the local area through direct participation in an institution or a committee, resources and technical support, help solve conflicts etc. (Drucker & Goldstein, 2007). In order to achieve various products and objectives, which mostly comprise intangible elements, managing various intangible resources is critical (Ramirez, et. al., 2007; Ramirez & Gordillo, 2014). For example, when generating knowledge, universities involve valuable, mostly intangible, input resources, such as human capital in the form of lecturers, researchers, administrators and service staff, students, university leaders and all organisational relations and routines (Canibano & Sanchez, 2008).

Various studies have classified intangible resources and the reporting process of intangible resources owned by each university. For example, Ramirez, et.al. (2007) had tried to identify, measure, manage and evaluate intangible resources owned by public universities in Spain. The study had classified intangible resources owned by universities into three components, namely human capital, structural capital and relational capital. Meanwhile, Bezhani (2010) had classified components in intangible resources owned and reported by universities in the West into human capital, structural capital, relational capital, number of research studies, commercialisation based on external education and research, as well as services and knowledge transferred to the community. Besides trying to classify intangible resources, several studies had tried to evaluate the influence of intangible resources on the effectiveness of a university's performance. For example, Shyh-Hwang Lee (2010) had developed the Intellectual Capital Evaluation Model to better understand the contributions of intangible resources to achievements attained by universities in Taiwan. The findings show that the intellectual resources component is the main intangible resource that has a significant

effect on the achievement of universities. Besides that, Lu (2012) also studied the influence of intellectual resources (human capital, structural capital and relational capital) on the achievement of universities in Taiwan. The findings show that intellectual resources influence teaching and research efficiencies in public universities in Taiwan.

Based on previous studies, this study looked at the presence of intangible resources, whereby the human resources factor is the main intangible resource and the main factor that determines the achievement of performance and sustainable competitiveness in a university. This was supported by Lew (2009), quoted in Muslim Amin, et al., (2014), who stated that human capital resources contribute immensely in enhancing the performance of a university's main activities, such as quality research, the academic faculty's reputation, quality of the academic program, contributions of the research to society, preparing tomorrow's leaders and the quality of graduates.

The importance of contributions made by human capital resources in achieving a university's performance is due to human capital resources that do not depreciate when used, in fact an individual becomes more skilful by using it (Marr & Roos, 2005). Human capital resources will continue to provide benefits with no time limit attached. This differs with tangible resources that depreciate when used. Besides, human capital resources can be used simultaneously for different activities. For example, using a person for one activity by a manager does not make the person less available for another manager (non-rivalrous). Lastly, human capital resources are non-material in nature; hence, it is not easily transferable because it is inherent in its owner and thus, inseparable (Marr & Roos, 2005). Therefore, an institution must develop human capital resources through complicated social and organisational processes (Winter, 2003), until it results in a heterogeneous resource owned by an institution (Barney, 1991). This heterogeneity is owned by the institution because human capital resources cannot be sold that easily or conveniently (Barney, 1986). Thus, if a competitor tries to copy or replace the human capital resource, they will face a large scale of temporal financial inefficiency (Dierickx & Cool, 1989). Consequently, the competitor can use the human capital resource to generate profit, but it will be valueless or worthless (Barney, 1991).

In reality, there are no replacements for various intangible elements in human capital resources, such as knowledge and learning, creativity and innovation, efficiency and capability; albeit, these elements are a gift to the organisation together with the officer's good health and well-being (Roslender & Monk, 2017 in Sardesai & Guthrie, 2018). Therefore, human capital resources with various intangible elements should receive greater consideration in a university's performance evaluation system compared to other elements, in order to ensure that its contributions to society continues to be forthcoming at all times and in any circumstance (Guthrie et al., 2017; Roslender & Monk, 2017 in Sardesai & Guthrie, 2018). The question that arises is whether intangible elements and dimensions in human capital resources do affect the enhancement of a university's performance and ranking. Based on numerous suggestions by scholars found in the literature, this study suggested several intangible elements in human capital resources in the context of a university, which are discussed below.

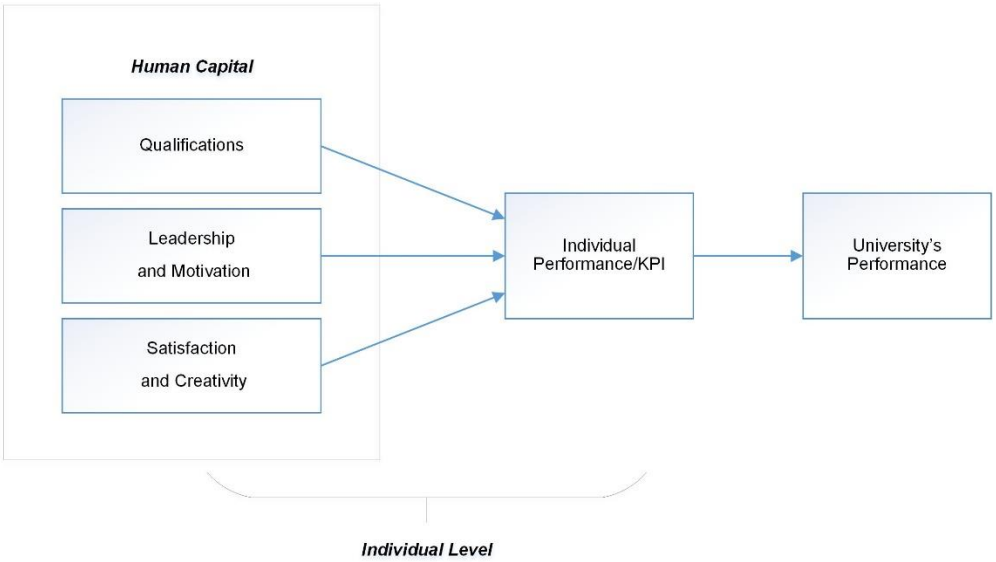
Human Capital

Human capital comes in various dimensions, such as knowledge, skills, innovation and expertise, in an individual that is obtained through education, training and learning experience and it is required for carrying out certain tasks or work (Becker, 1964; Coff, 2002; Hatch & Dyer, 2004; Cricelli, 2018). Knowledge is a form of procedural information required to implement a certain task and is the basis where skills and capabilities are developed. Skills refer to an individual's level of efficiency and capability for implementing a certain task. Capability is an individual's ability (usually cognitive in nature) required for implementing a task, whereas other characteristics frequently refer to characteristics of a personality or other features that influence an individual's capability to implement a certain task (Nyberg, et al., 2014). Differences in

the various dimensions in an individual will cause differences in performance achieved by each unit in an organisation (Kraaijenbrink, 2011), and provide direct benefits in the form of an excellent performance, productivity and work progress for the organisation or individual (Pil & Leana, 2009).

Literature reviews have shown that scholars have categorised human capital into several types. Becker (1964) and Castanias and Helfat (2001) suggested three main types of human capital, which is the basis of an organisation's capability, namely firm specific human capital, industry specific human capital, and general human capital. Castanias and Helfat (2001) also stated that firm specific human capital is a human capital concept that is least used and studied, whereas general human capital is a concept most used and studied by researchers and practitioners. Besides Castanias and Helfat (2001), Mayer, et. al. (2012) had also categorised human capital into three, namely firm-specific, industry-specific, and occupational human capital. Meanwhile, Molloy and Barney (2015) had divided human capital into four categories, such as general human capital, required firm-specific human capital, discretionary firm-specific human capital, dan co-specialized human capital.

Diagram 1. Relationship Between Human Capital and the Performance of Universities



The importance of human capital, as a determinant of a university's performance, has been proven by researchers. For example, Cricelli et al. (2018) argued that in the human capital owned by a university, tacit and explicit knowledge is frequently collected. To a great extent, human capital owned by professors and researchers determine the quality and capacity as well as teaching and research competencies, such as innovation in teaching, quality teaching, quality research, participation in national and international projects, percentage of Doctor of Philosophy candidates and others. Meanwhile, administration and service staff work to gather various types of tacit knowledge that becomes explicit by integrating their human capital into the university's production structure. Lastly, human capital in students also determines a university's performance because students act as a channel of information, which allows the flow of knowledge from professors and researchers to businesses and the community, eventually the benefits return to the university (Cricelli, 2018).

Social capital

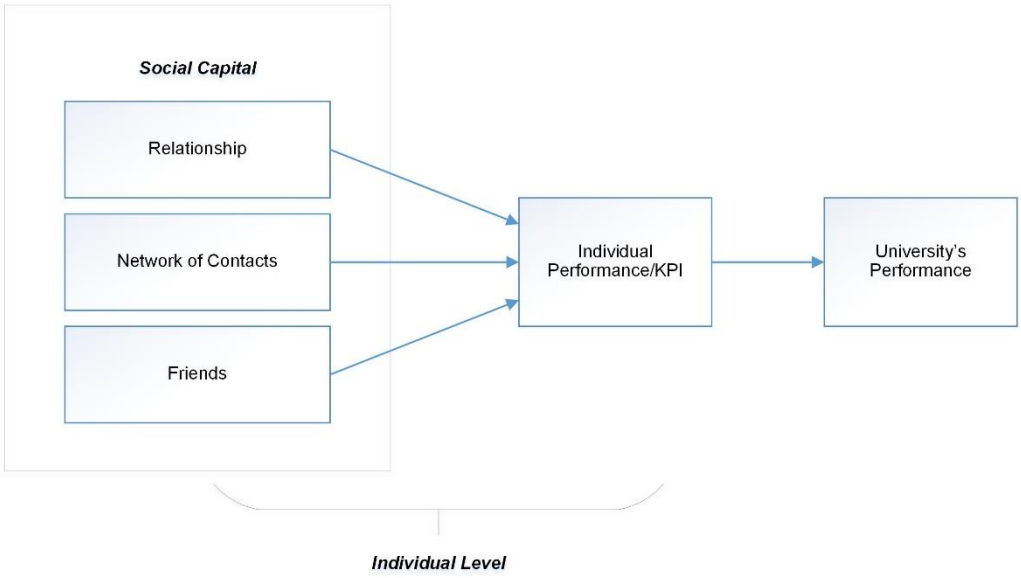
Based on Adler and Kwon (2002), Nyberg et al. (2014) had defined social capital as a form of good-will produced by a social relationship and used to facilitate an action.

Meanwhile, Portes (1998), in Larson and Luthan (2006), stated that at the individual level, social capital refers to an individual's ability to obtain benefits based on the membership in a social network or other social structures. Luthan and Youseff (2004) stated that social capital includes inter-personal, inter-group or inter-organisational relationships, connections, as well as basic groups and societal resources, social structures and dynamic cultures. Luthan and Youseff (2004) also suggested three important aspects of social capital that has been identified to help create sustainable competitive advantage for an organisation, namely networking, norms and trust. Meanwhile, Luthan, et al., (2004) suggested that the importance of social capital in each individual because social capital is related to who you know. Hence, Luthan, et al., (2004) suggested three elements in social capital, such as relationship, network of contacts and friends.

Larson and Luthan (2006) suggested that the importance of social capital is to create contextual elements for human capital. Without social capital, organisations will be severely deficient because all officers, either directly or indirectly, work with other people. Hence, when an officer has a task to accomplish or has a problem to solve, the officer not only discusses it with the supervisor but more frequently discusses it with friends, family, colleagues and others to obtain some sort of help (Larson & Luthans, 2006). This view was supported by Wright and Snell (1999), who stated that the first rule in an organisation is nobody should function alone as employees should combine their talents and energy to achieve their objectives. Social capital is a form of capital that is planted in an individual and is the property of the individual who interacts with others, respective networks as well as form relationships with others and reap the benefits accruing from that relationship (Wright & Snell, 1999).

In the context of a university, social capital owned by human resources capital will determine the relationship between the university and its environment (Alcaniz et al., 2011; Silvestri and Veltri, 2011; Marr, 2008 in Cricelli, 2018), such as the relationship between clients, intermediaries, suppliers, inter-organizational alliance partners, regulators, institutional figures, pressure groups, community, creditors and investors. Bontis (1998), as quoted by Cricelli (2018), also asserted that the relationship built by the university with its environment will provide knowledge needed by the university to enhance its quality throughout its lifetime as well as become an asset with a great potential and difficult to be gauged.

Diagram 2. Relationship Between Social Capital and University's Performance

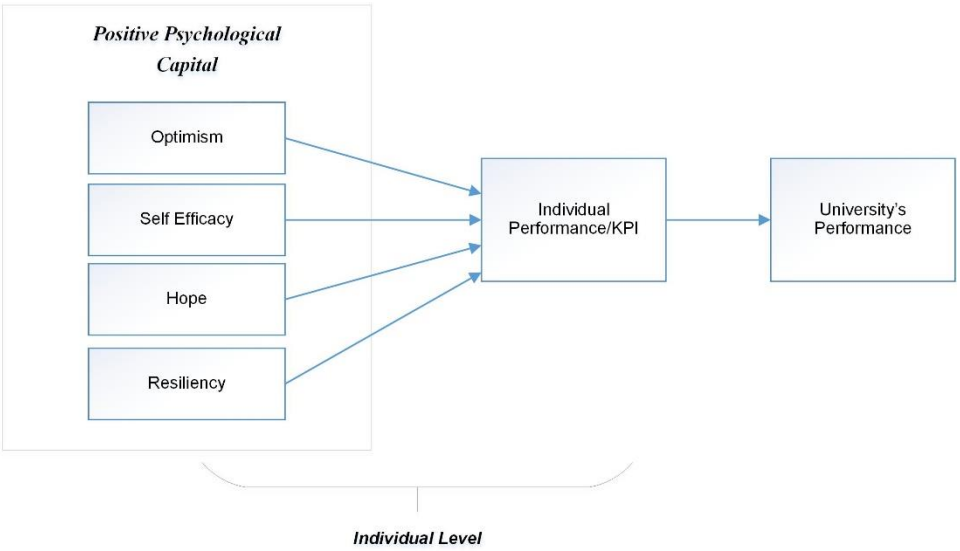


In addition, social capital possessed by human resources capital in universities can be secured through movement of researchers, either internally or externally, participation in meetings and conferences, attracting international scientists, participating in international research programs and cooperation contracts (Bezhani, 2010). Hence, the relationship concept is relevant to the academic social interaction network related to the expansion of productivity, either through the expansion of economy, politics or institutional development. The relationship between one another also offers great opportunities for expanding social capital in universities by connecting the university with economic, political and other organisations, as well as the industry, local authorities and the general society (Corcoles et. al., 2011 in Cricelli, 2018), which eventually impacts the enhancement of the university's performance.

Positive Psychological Capital

Positive psychological capital is an individual's psychological state that reflects the cognitive, behavioural and emotional resources used by an individual when responding to various challenging situations (Luthans et al. 2004, Luthans & Youssef 2004, Luthans et al. 2007; 2015; Luthan & Youssef, 2017). Positive psychological capital is characterised by four main dimensions, such as having positive attributions and optimism about present and future success, possessing self-efficacy for initiating and applying efforts to succeed in a challenging task, persevering to achieve the objectives and when necessary, changing the method to achieve the objectives to succeed and being more resilient from before when faced with difficulties or problems (Luthans et al. 2004, Luthans & Youssef 2004, Luthans et al. 2007; 2015; Luthan & Youssef, 2017).

Diagram 3. Relationship Between Positive Psychological Capital and a University's Performance



Numerous studies have shown that positive psychological capital found in human resources capital, both by managers and employees, can influence performance, either at the individual or organisational levels (Luthan & Youssef, 2017). For example, Luthans et al. (2007) found that positive psychological capital has a positive relationship with individual work performance, and it contributes towards a high level of performance. Similarly, Avey et al., (2010) found a positive relationship between positive psychological capital and financial performance with its manager in the financial services industry context. Newman et al. (2014) also found that positive psychological capital impacts performance, attitudes, behaviour and well-being at the individual, team and organisational levels.

A meta-analysis by Avey et al. (2011), involving 51 free samples out of 12,567 employees, found that positive psychological capital acts as in indicator and determinant of an individual's performance, either self-evaluated, the supervisor or objectively. The analysis also found that positive psychological capital influences employee's creative performance as well as the ability to solve problems and be innovative. Studies have also shown that positive psychological capital has a positive relationship with an employee's desired attitudes, such as work satisfaction, organisational commitment and psychological well-being. Avey et al. (2011) found that positive psychological capital has a negative relationship with an employee's undesired attitudes, such as cynicism, turnover intention, job stress, anxiety as well as various deficient behaviours, mainly in the context of service and public organisations, including universities. Various factors have an effect on enhancing the performance of university officers as well as the university itself.

Spiritual Capital

AAhad M. Osman-Gani el at. (2013) described spirituality by including various concepts and values, such as transcendence, balance, sanctity, altruism, meaning in life, living with a deep connectedness to the universe, and the awareness that there is something or someone bigger than oneself, which is God, who has the energy and wisdom that surpasses all aspects of material life. Spiritual capital can be defined as intangible values that produce richness involving an individual's beliefs, faith, commitment, determination and emotions as well as the organisation's vision, direction, guidance, principles, values and culture (Zohar & Marshall, 2004; Long &

Mills, 2010). All these values will eventually help the organisation achieve its objectives.

Spiritual capital is also a source of motivation for other forms of capital, such as social capital and emphasises on the importance of beliefs and norms as the basis for implementing any form of progressive human activities (Baker et al., 2011). The spiritual capital inherent in a person will make the person ask 'why we do what we do' and lead the person to seek a better way to do it, which eventually yields a better product in the organisation and individual's life (Zohar & Marshall, 2004). This is similar to the argument by Valasek (2009), mentioned by AAhad M. Osman-Gani el at. (2013), who defined spirituality into seven categories that will effect an individual's performance, such as finding meaning and aim, living as how others live, personal integrity, well-being and being holistic, achieving personal growth, ethics, integrity or value-based, belief in Allah SWT and having a sense of justice or fairness.

Spiritual capital can also be defined as spiritual intelligence (Zohar & Marshall, 2004). Spiritual intelligence is a moral and value-based attitude that forms the basis for an individual to make moral decisions and find problems to solve, objectives that should be achieved as well as the readiness of a person to aide by rules (Zohar & Marshall, 2004; Love & Talbot, 2009). Table 4 shows the values possessed by a person who has spiritual capital (Dahlsgaard, et al., 2005).

Table 4. Values of a Person Who Possesses Spiritual Capital

Virtue	Description
Courage	Emotional strengths that involve the exercise of will to accomplish goals in the face of opposition, external or internal; examples include bravery, perseverance, and authenticity (honesty)
Justice	Civic strengths that underlie healthy community life; examples include fairness, leadership, and citizenship or teamwork
Humanity	Interpersonal strengths that involve "tending and befriending" others; examples include love and kindness
Temperance	Strengths that protect against excess; examples include forgiveness, humility, prudence, and self-control
Wisdom	Cognitive strengths that entail the acquisition and use of knowledge; examples include creativity, curiosity, judgment, and perspective (providing counsel to others)
Transcendence	Strengths that forge connections to the larger universe and thereby provide meaning; examples include gratitude, hope, and spirituality

Source: Dahlsgaard, et al. (2005)

Spiritual capital is a new concept. Hence, spiritual capital together with spiritual practices and values are the strongest variables related to the effectiveness of personal, team and organisational performances. For example, AAhad M. Osman-Gani el at. (2013) found that the state of spirituality and religiosity in employees from 28 organisations in 6 main industries in Malaysia, such as education, construction, electronics, food, hotel and transportation, does positively and significantly influence the effectiveness of these employees' work performance. AAhad M. Osman-Gani el at. (2013) also found that employees' state of spirituality has a bigger impact on their performance's effectiveness compared to their religiosity. Hence, employees who possess a higher state of spirituality, which is characterised by an individual who seeks the meaning and intention behind every activity, live like others, owns a strong personality and a holistic wellbeing, strives to achieve personal growth, possess ethics, integrity and a value-based life, a strong belief in God and a sense of justice and fairness, will exhibit a better work performance (AAhad M. Osman-Gani el at. 2013;

Dewi Fariha Earnest, et al., 2015). Since spiritual capital is important, organisations, including universities, should develop intangible spiritual capabilities from their human capital resources in order to achieve sustainable competitive excellence (Stead & Stead, 2014).

Conclusion

It can be concluded that globalisation has an extraordinary effect on the transformation of the higher education system in most countries, including countries in the Malay Archipelago. This phenomenon, especially in relation to the need for establishing universities with a performance and ranking of world standards. Hence, in reality, the performance and ranking of universities from various countries in the Malay Archipelago are unequally distributed. One factor that influences differences in effective performance and rankings among universities in the Malay Archipelago is the differences in factors related to human capital resources owned by these universities.

These human capital resources factors influence the effectiveness a university's performance and ranking because human capital resources is the main input for various teaching and learning activities as well as community service activities, which are the three main mission statements for creating a university (Sardesai & Guthrie, 2018). Therefore, majority of the current criteria and performance indicators were built to measure external activities or Key Performance Indexes of activities related to human capital resources in universities. For example, according to Quacquarelli Symonds (QS) University Rankings, a university's performance and ranking is determined by its performance based on academic reputation (40%), university's reputation (20%), citations by lecturers (20%), teaching quality (10%) and internationalisation (rate of international students and lecturers) (5%). Meanwhile, Times Higher Education (THE) University Rankings determines a university's performance and rankings according to the quality of human capital resources, such as teaching (30%), research (30%), citations by lecturers (30%), generating income from industries through knowledge transfer activities (2.5%), and internationalisation (7.5%) (Tilak, 2016; Boyadjieva, 2017). Therefore, it is important that universities and policy makers understand the need for enhancing the quality of human capital resources, mainly the intangible elements, which are the main factors that help a university achieve its performance and ranking.

This study emphasises on the development and investment aspects to enhance the quality of human capital resources in universities by focusing on the intangible elements, such as human capital, social capital, as well as positive psychological and spiritual capital. This suggestion is supported by Joni Tamkin (2008), who stated that the development of human capital resources entails moral and spiritual strength, appropriate attitudes and aspirations, well developed character, personality, education and training that provides skills needed for various activities, as well as encourage knowledge and research that supports national and local development. The development of human capital resources through various intangible elements is due to changes in job demands and job protocols in universities that have become increasing complex and varied. In addition, the challenges of acquiring a main job in this Industrial Revolution 4 era coupled with innovation developments and frequent disruptions to technology has forced universities to own human capital resources that possess cognitive flexibility and Habits of Mind. Thus, possessing these two qualities enables human capital resources to pursue life-long learning, possess the capability to learn new skills, accept new approaches and face continuous social changes as well as efficiently carry out various tasks and jobs in very different contexts (Gleason 2018). Universities also need human capital resources that possess problem solving skills, critical thinking, creativity, social expertise, human management skills, emotional stability, decision making skills, service oriented, negotiating skills and cognitively flexible, which are the intangible elements that make up human capital.

However, in reality, there is no substitute for intangible elements associated with human capital resources, such as knowledge and learning, creativity and innovation,

efficiency and capabilities as well as various other elements that are a gift to the organisation together with the health and well-being of its employees (Roslender & Monk, 2017 in Sardesai & Guthrie, 2018). Therefore, human capital resources and its various intangible elements need more attention and should be an integral part of a university's performance measuring system, so that the mechanism used to measure this performance is more comprehensive and ensures that contributions to the community continue to be forthcoming (Guthrie et al., 2017; Roslender & Monk, 2017 in Sardesai & Guthrie, 2018). This requires a long-term vision for developing higher education that should be supported by strategic planning as well as investments in human capital development involving various intangible elements. This will transform and rejuvenate higher education in the Malay Archipelago, consistent with expanding national and local development needs and issues.

References

1)AAhad M. Osman-Gani, Junaidah Hashim & Yusof Ismail (2013). Establishing linkages between religiosity and spirituality on employee performance. Employee Relations. 35(4): 360-376.
2)Adler, P. S., & Kwon, S. W. 2002. Social capital: Prospects for a new concept. Academy of Management Review, 27(1): 17-40.
3)Altbach, P. G. (2011) Ranking season is here. International Higher Education Winter, 62: 2–5.
4)Avey, J. B., Luthans, F., & Youssef, C. M. (2010). The additive value of positive psychological capital in predicting work attitudes and behaviors. Journal of Management, 36(2), 430–452.
5)Avey, J. B., Reichard, R. J., Luthans, F., & Mhatre, K.H. (2011). Meta-Analysis of the Impact of Positive Psychological Capital on Employee Attitudes, Behaviors, and Performance. Human Resource Developmeny Quarterly. 22(2):127–52.
6)Baker, C., P. Stokes, J. Lichy & J. Atherton, (2011). Values, Beliefs and Attitudes in the Era of Late-Capitalism: A Consideration of the Re-Emergence and Re-Positioning of Faith and Spirituality as Spiritual Capital in the Workplace. http://www.chester.ac.uk/sites/files/chester/Values%2C%20Beliefs%20and%20Attitudes%20in%20the%20Era%20of%20Late%20Capitalism.pdf
7)Barney, J., (1986). Strategic factor markets: expectations, luck, and business strategy, Management Science, October : 1231-1241.
8)Barney, J. (1991). Firm Resources and Sustained Competitive Advantage, Journal of Management, 17(1): 99-120.
9)Becker, G. S. (1964). Human capital: A theoretical and empirical analysis, with special reference to education. Chicago: University of Chicago Press.
10) Becker, B.F. & Huselid, M.A. (2006). Strategic Human Resources Management: Where Do We Go From Here? Journal of Management, 32(6), 898-925.
11) Bezhani, I. (2010). Intellectual capital reporting at UK universities. Journal of Intellectual Capital. 11(2): 179-207.
12) Boon, C., Eckardt, R., Lepak, D.P. & Boselie, P. (2018). Integrating strategic human capital and strategic human resource management. The International Journal of Human Resource Management. 29(1):34-67.
13) Bornemann, M. & Wiedenhofer, R. (2014) Intellectual capital in education: a value chain perspective, Journal of Intellectual Capital, 15(3), pp.451-470.
14) Boyadjieva, P. (2017). Invisible higher education: Higher education institutions from Central and Eastern Europe in global rankings. European Educational Research Journal. 16(5): 529–546
15) Canibano, L. & Sanchez, P. (2008), Intellectual capital management and reporting in universities and research institutions, Estudios de Economia Aplicada, 26 (2), 7-26.
16) Castanias, R. P. & Helfat, C.E., (2001). The managerial rents model: Theory and empirical analysis. Journal of Management. 27: 661–678.
17) Coff, R.W. (2002). Human Capital, Shared Expertise, and the Likelihood of Impasse in Corporate Acquisitions. Journal of Management. 28(1):107–128.
18) Cricelli, L., Greco, M., Grimaldi, M. & Duenas, L.P.L. (2018). Intellectual capital and university performance in emerging countries: Evidence from Colombian public universities, Journal of Intellectual Capital, 19(1). 71-95.

19) Katherine Dahlsgaard, K., Peterson, C. & Seligman, M.E. P. (2005). Shared Virtue: The Convergence of Valued Human Strengths Across Culture and History. Review of General Psychology. 9(3), 203–213.
20) Deem, R., Mok, K.H. & Lucas, L. (2008), Transforming higher education in whose image?Exploring the concept of the 'world-class' university in Europe and Asia, Higher Education Policy, Vol. 21 No. 1, pp. 83-97.
21) Delery, J. E. & Roumpi, D. (2017). Strategic human resource management, human capital and competitive advantage: is the field going in circles? Human Resources Management Journal, 27 (1): 1-21
22) Dewi Fariha Earnest, Nur Farhana Chamian, & Maisarah Mohamed Saat. (2015). Assessing the relationship between human capital and spiritual capital on audit firm's performance. Jurnal Kemanusiaan. 24(2): 18-28.
23) Dierickx, I. and Cool, K. (1989) Asset stock accumulation and sustainability of competitive advantage. Management Science, 35, 12, 1504–1511.
24) Drucker, J. & Goldstein, H. (2007). Assessing The Regional Economic Development Impacts Of Universities: A Review of Current Approaches. International regional science review 30 (1): 20-46.
25) Dumay, J., Guthrie, J., & Puntillo, P. (2015). IC and public sector: a structured literature review, Journal of Intellectual Capital, 16(2), 267-284.
26) Galor, O. & Moav, O. (2004). From Physical to Human Capital Accumulation: Inequality and the Process of Development. The Review of Economic Studies, 71(4), 1001–1026.
27) Gleason, N.W. (2018). Higher Education in the Era of the Fourth Industrial Revolution. Palgrave Macmillan: Singapore
28) Guthrie, J., Dumay, J., Ricceri, F. and Neilsen, C. (2017), The Routledge Companion to Intellectual Capital: Frontiers of Research, Practice and Knowledge, Routledge, London
29) Hatch, N., J. H. Dyer (2004). Human Capital and Learning by Doing as a Source of Sustainable Competitive Advantage. Strategic Management Journal. 25(12) 1155–1178.
30) Ishikawa, M. (2009). University Rankings, Global Models, and Emerging Hegemony: Critical Analysis from Japan. Journal of Studies in International Education. 13(2): 159-173
31) Joni Tamkin (2008). Pemikiran Pembangunan Ekonomi Berteraskan Islam. Jurnal Usuluddin, 27: 93-107.
32) Kehm, B. (2014). Global university rankings – impacts and unintended side effects. European Journal of Education 49(1): 102–112.
33) Kraaijenbrink, J. 2011. Human Capital in the Resource-Based View. The Oxford Handbook of Human Capital. https://doi.org/ 10.1093/oxfordhb/9780199532162.003.0009.
34) Larson, M. & Luthans, F. (2006). Potential Added Value of Psychological Capital in Predicting Work Attitudes. Journal of Leadership and Organizational Studies, 13(1): 45-62.
35) Long, B. S. & Mills, J. H., (2010) Workplace spirituality, contested meaning, and the culture of organization: A critical sensemaking account, Journal of Organizational Change Management, 23(3):325-341,
36) Love, P. & Talbot, D. (2009). Defining spiritual development: A missing consideration for student affairs. NASPA Journal, 46(4), 614-628.
37) Lu, W. M. (2012). Intellectual capital and university performance in Taiwan. Economic Modelling. 29(4) 1081–1089.
38) Luthans, F., Luthans, K.W., & Luthans, B.C. (2004). Positive Psychological Capital: Beyond Human and Social Capital. Business Horizons, 47(1): 45–50.
39) Luthan, F., & Youssef, C. M. (2004). Human, Social, and Now Positive Psychological Capital Management: Investing in People for Competitive Advantage. Organizational Dynamics, 33(2) 143–160.
40) Luthans, F., Avolio, B.J., Avey, J.B. & Norman, S.M. (2007), "Psychological capital: measurement and relationship with performance and satisfaction", Personnel Psychology, 60(3):541-572.
41) Luthan, F., Youssef, C. M. & Avolio, B.J. (2015). Psychological Capital and Beyond. Oxford University Press.

42) Luthan, F., & Youssef, C. M. (2017). Psychological Capital: An Evidence-Based Positive Approach. Annual Review of Organizational Psychology and Organizational Behavior. 4:339-366.
43) Marginson, S., & Van der Wende, M. (2007). To Rank or To Be Ranked: The Impact of Global Rankings in Higher Education. Journal of Studies in International Education, 11(3/4): 306-329.
44) Marginson S (2014) University rankings and social science. European Journal of Education 49(1): 45–59.
45) Marr, B. & Ross, G. (2005). A Strategy Perspective on Intellectual Capital. In: Marr, B, (eds) Perspectives on Intelectual Capital, USA & UK: Elsevier Butterworth-Heinemann.
46) Mayer, K.J., Somaya, D. & Williamson, I.O. (2012). Firm-Specific, Industry-Specific, and Occupational Human Capital and the Sourcing of Knowledge Work. Organization Science, 23(5): 1-19.
47) Mawdsley, J.K. & Somaya, D. (2016). Employee Mobility and Organizational Outcomes An Integrative Conceptual Framework and Research Agenda. Journal of Management, 42(1):85-113.
48) Molloy, J.C. & Barney, J.B. (2015). Who captures the value created with human capital? A market-based view. Academy of Management Perspectives. 29(3):309–325.
49) Morphew C and Swanson C (2011) On the efficacy of raising your university's rankings. In: Shin J, Toutkoushian R and Teichler U (eds) University Rankings: Theoretical Basis, Methodology and Impacts on Global Higher Education. London and New York: Springer, pp.185–200.
50) Muslim Amin, Wan Khairuzzaman Wan Ismail, Siti Zaleha Abdul Rasid, Richard Daverson Andrew Selemani, (2014). The impact of human resource management practices on performance: Evidence from a Public University, The TQM Journal, 26(2):125-142.
51) Newman, A. Ucbasaran, D. Zhu, F. & Hirst, G. (2014). Psychological capital: a review and synthesis. Journal of Organizational Behavior. 35(S1):S120–S138.
52) Nyberg, A.J., Moliterno, T.P., Hale, D., & Lepak, D.P. (2014). Resource-Based Perspectives on Unit-Level Human Capital: A Review and Integration. Journal of Management. 40(1). 316-346.
53) Pil, F.K., & Leana, C. (2009). Applying Organizational Research to Public School Reform: The Effects of Teacher Human and Social Capital on Student Performance. Academy of Management Journal. 52(6): 1101–1124.
54) Ployhart, R.E. & Moliterno, T.P. (2011). Emergence of the Human Capital Resource: A Multilevel Model. Academy of Management Review. 36(1): 127–150.
55) Ployhart, R.E., Nyberg, A.J., Reilly, G., & Maltarich, M.A., (2014). Human Capital is Dead; Long Live Human Capital Resources. Journal of Management. 40(2):371–398.
56) Ramirez, Y., Lorduy, C., & Rojas, J. A. (2007) Intellectual capital management in Spanish universities, Journal of Intellectual Capital, 8 (4). 732-748.
57) Ramirez, Y., & Gordillo, S. (2014). Recognition and measurement of intellectual capital in Spanish universities, Journal of Intellectual Capital, 15 (1). 173-188.
58) Rindova, V. P., & Martins, L. L. (2012). Show me the money: A multidimensional perspective on reputation as an intangible asset. In M. L. Barnett & T. G. Pollock (Eds.), The Oxford handbook of corporate reputation: 16-33. Oxford: Oxford University Press.
59) Rindova, V.P., Martins, L.L., Srinivas, S.B. & Chandler, D. (2018). The Good, the Bad, and the Ugly of Organizational Rankings: A Multidisciplinary Review of the Literature and Directions for Future Research. Journal of Management. 44(6): 2175–2208
60) Salmi, J. (2009), The Challenge of Establishing World-Class Universities, The World Bank,Washington, DC.
61) Sanchez, M.P. & Elena, S. (2006). Intellectual capital in universities: Improving transparency and internal management, Journal of Intellectual Capital, 7(4).529-548.

62) Sardesai, A. M. & Guthrie, J. (2018). Human capital loss in an academic performance measurement system, Journal of Intellectual Capital, 19 (1).53-70.
63) Secundo, G., Dumay, J., Schiuma, G. & Passiante, G. (2016) Managing intellectual capital through a collective intelligence approach: An integrated framework for universities, Journal of Intellectual Capital, 17(2). 298-319
64) Shyh-Hwang Lee (2010). Using fuzzy AHP to develop intellectual capital evaluation model for assessing their performance contribution in a university. Expert Systems with Applications. 37(7): 4941-4947.
65) Stead, G. & Stead, W.E. (2014). Sustainable Strategic Management. New York: Routledge.
66) Tee, K.F. (2016). Suitability of Performance Indicators and Benchmarking Practices in UK universities, Benchmarking: An International Journal, 23(3): 584-600.
67) Teichler U (2011) Social contexts and systemic consequence of university rankings: A meta-analysis of the ranking literature. In: Shin J, Toutkoushian R and Teichler U (eds) University Rankings: Theoretical Basis, Methodology and Impacts on Global Higher Education. London and New York: Springer, pp.55–72.
68) Tilak, J.B.G. (2016). Global Rankings, World-class Universities and Dilemma in Higher Education Policy in India. Higher Education for the Future. 3(2) 126–143
69) Wang, Q., Cheng, Y. & Liu, N.C. (2012), Building World-Class Universities: Different Approaches to a Shared Goal, Sense Publishers, Rotterham.
70) Wright, P. M., & Snell, S. A. (1999). Social capital and strategic HRM: It's who you know. Human Resource Planning, 22(1): 62-65.
71) Yudkevich, M., Altbach, P.G., & Rumbley, L.E., (2015). Global university rankings: The ‘‘Olympic Games’’of higher education? Prospects. DOI 10.1007/s11125-015-9365-y.
72) Zohar, D. & Marshall, I. (2004). Spiritual Capital: Wealth We Can Live by. San Francisco- Berrett-Koehler Publishers.