

# **Improving university competitiveness and quality education through Human Resource Development in the digital era**

<https://doi.org/10.58870/berj.v8i1.51>

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## **Abstract**

In its quest for quality education, Higher Education Institutions (HEI) ascribed to the UN's SDG 4 Quality Education in ensuring that inclusive and equitable quality education will promote lifelong learning and opportunities for all. The critical role of Higher Education Institutions (HEIs) in building teaching skills, fostering knowledge, and engagement with society are significant factors in developing its human resources, particularly, the faculty. The benefits and challenges brought about by Industry 4.0 drive the universities to integrate quality education into their mission of promoting positive change, lifelong learning, and competitiveness. The study utilized qualitative and descriptive design to probe the variabilities and similarities of Human Resource Development strategies, quality education initiatives, and university competitiveness of HEIs in Bandung and Manila. Thematic analysis was carried out to produce more conclusive results. The researchers applied a data condensation process to form a perceived relevant category and a theme was created based on strategies and competitiveness. The significant result shows a deficit in the strategy to target specific faculty KSAs in the personal development in-service programs instituted by the HEIs in Manila. Remarkable are the many organizational strategies employed by both cities that yields quality education indicator (management) particularly the essential role of the HEI in instituting policies for faculty's wholistic development. Results on competitiveness denote compliance to most

functional capacities of both cities as a valuable means of mobility as the education workers meet the demands of their job. Moreover, the strong partnership with local and international agencies solidifies various developmental programs and the social relevance of the university. The study recommends further study on the impact of the educational global ranking system in the retention of human resources and employment of graduates.

**Keywords:** Human Resource Development, Higher Education Institution (HEI), Industrial Revolution 4.0, quality education, and competitiveness

## **Background of the Study**

The role of Higher Education Institutions (HEIs) as a fertile ground for new ideas and innovations is presumed to contribute to the development of economic and societal growth. According to Murthi et al. (2021), a strong tertiary education system is expected to build the professional expertise necessary to drive public and private sector development, which every growing economy can rely upon. The critical role of colleges and universities in preparing young people not only for the world of work but for lifelong learning as productive members of society is regarded in terms of its sources of knowledge, scientific innovations, values, and behaviors, among others. The United Nation's sustainable development goal (SDG 4) supports this view, emphasizing the vital role of quality education in ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all.

With the many digital learning opportunities that higher education can provide to enhance quality in the delivery of lessons, the era of Industrial Revolution 4.0 and the challenges brought about by the Covid-19 pandemic has compelled education managers to take strategic steps to quality education as they anticipate changes in the academic world. Such formulation of changes has affected various educational aspects ranging from review of policies, curriculum enhancement, dynamic research initiatives, merit & incentive processes, industry partnerships, and development of human resources.

Historically, education systems around the world have emphasized acquiring knowledge and information and de-prioritized interpersonal skills. World Economic Forum (WEP) developed the Education 4.0 framework for the teaching and learning of skills anchoring on the taxonomy built on three aptitudes: (1) abilities and skills, (2) attitudes and values, and (3) knowledge and information. It places particular focus on the same definition by the business and education communities on the abilities and skills as well as attitudes and values as these are the most important according to experts and employers (World Economic Forum, 2023). A strong collaboration between the HEI and partner industry is viewed as an opportunity to enhance the skills set of the teacher and to ensure the same skill set and concepts are delivered to the students.

People within an organization are a primary means of generating competitiveness since they affect its performance (Lussier & Hendon,

2019). Human resource development, or HRD, according to Alhalboosi (2018), is a systematic task to enrich employees' skills, knowledge, and experiences to meet an organization's current and future needs. Hence, to fully develop the schools' human capital, continuous development is necessary to acquire the needed skill set and sustain such advantages in pursuit of quality education.

The concept of quality in higher education lies between the university and regulatory agencies, focusing on several indicators such as *research, teaching, management, resources, and links with society and students* (Cadena et al., 2018). Such factors are further attributed to the respective university's trifocal mission: to create new knowledge by research and deliver such knowledge in teaching, which can be shared with society to develop the quality of life. An interesting challenge to the universities is how they will achieve higher education ratings on the given quality indicators rather than merely on the number of graduates.

The connection between competitiveness and quality human resources is empirically supported by Dimitrova and Associate (2017). They expressed the significant role of a valuable pool of knowledge workers because their acquired knowledge and competencies are expected to deliver higher productivity. Aside from developing a competitive workforce, HEIs should consider the dynamics brought about by the macroeconomic environment in which it operates. Remarkably, the vigilant control of the state, and civil society, the rising presence of international competition in global university rankings, the existence of private training companies, and the creation of corporate-university partnerships, including new marketing approaches and tools (p. 312-313) poses threat to universities in the attainment of competitive advantage and quality education.

With the lack of uniform methodology to measure quality education and higher educational competitiveness (Dimitrova and Associate, 2017 & Narmania et al., p. 29, 2021), Dimitrova and Associate (2017) identified the multidimensional functional capabilities (*Teaching-methodological and innovations capability, Scientific research, Human, Financial & Economic, Social, Management, and Marketing*) that are found significant in identifying HEIs competitive advantage (p. 314).

Although there has been an increase in interest among researchers and theorists in understanding the quality of education (Cadena et al., 2018) and competitiveness (Dimitrova & Associate, 2017) among HEIs, there is

still limited unified conceptualization and local study available to provide an empirical explanation to the strategies employed by a university in improving its quality education and competitiveness through the development of human resources in the digital era.

### **Statement of Research Problem**

In line with the UN Sustainable Development Goal 4 on Quality Education and to enable the universities to improve their competitiveness, this study sought to answer this research problem:

*What strategies are implemented by selected universities in Bandung and Manila to improve their competitiveness through human resource development and quality education in the digital era?*

Moreover, this research problem was carried out with the following objectives: (1) Identify the university's human resource development strategies. (2) Determine the university's quality education initiatives. (3) Determine the university's competitiveness. (4) Compare the human resource development strategies, quality education initiatives, and university competitiveness of HEIs in Bandung and Manila.

### **Conceptual Model and Operational Framework**

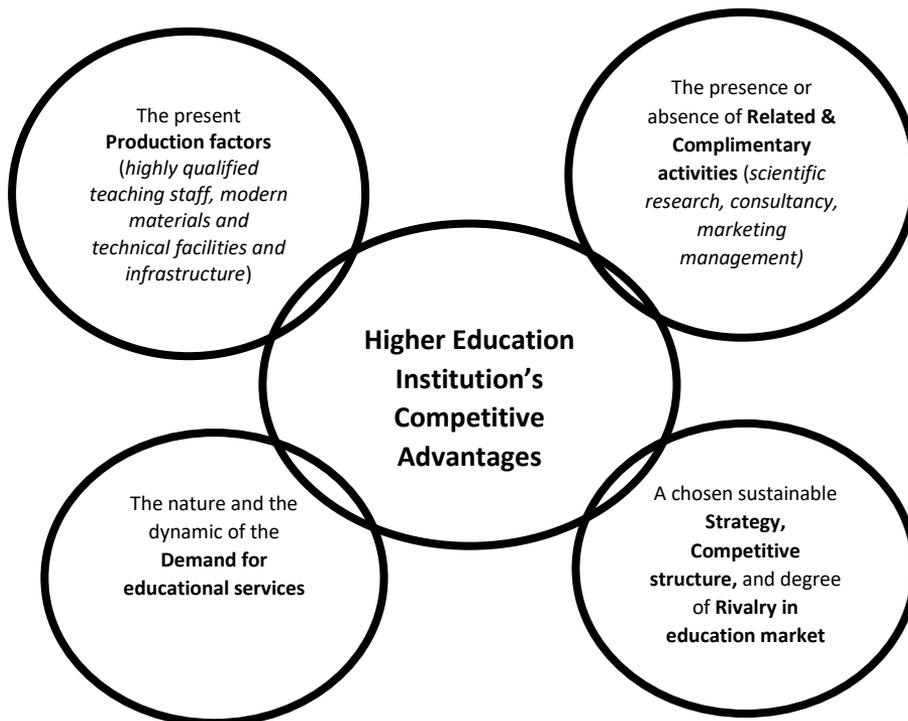
This research is anchored on the framework of competitiveness as expressed in the model by Dimitrova and Associate (2017), which emphasizes the contribution of well-educated and highly qualified human resources through their acquired knowledge and competencies along with the other factors in the model will allow an educational institution to achieve the requirements of the labor market with good quality product and workforce to maintain its competitive advantage.

The model adheres to the UN SDG 4 Quality Education 4.7 targets: the acquisition of knowledge and skills that are geared towards sustainable development, promotion of the culture of peace, global citizenship, and appreciation of cultural diversity among others. The identified means of implementation must be evident in the effective learning environments, scholarships, and teachers' and educators' development ("UNESCO, n.d.").

Using Porter's general model of competitive advantage (Figure 1) in the context of educational services, Dimitrova and Associate (2017) concluded that the competitive advantage of an HEI depends on the present *production factors* (highly qualified teaching staff, modern materials, and technical facilities and infrastructure); the nature and the dynamic of the *demand for educational services*; the presence or absence of *related & complimentary activities* (scientific research, consultancy, marketing management); a chosen sustainable *strategy, competitive structure and degree of rivalry in the education market*. All the listed indicators will determine the success of an HEI in reaching a unique combination of resources, namely physical, organizational, and human capital (p. 313).

**Figure 1.**

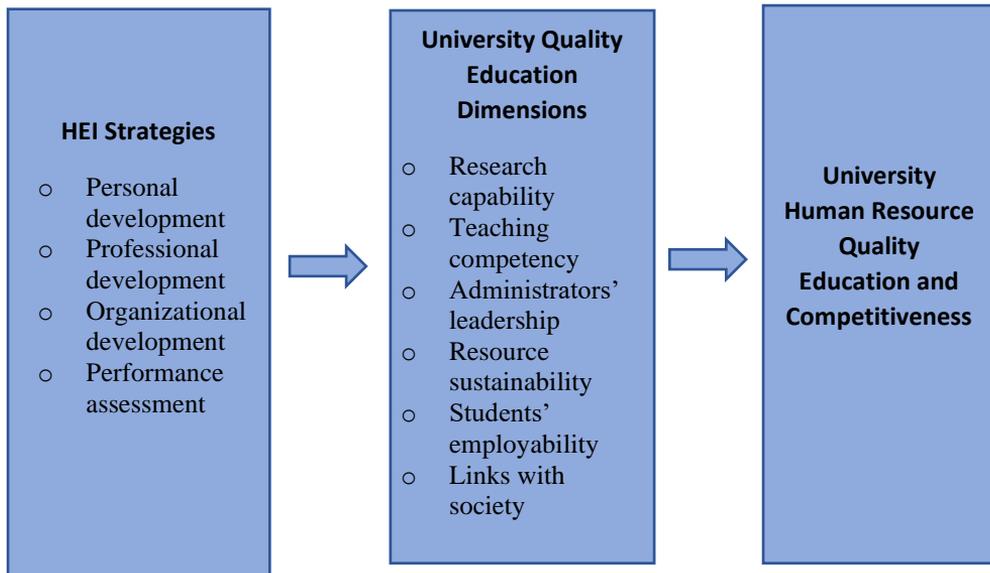
*Competitive Advantage of HEI by Dimitrova and Associate (2017)*



## Operational Framework

**Figure 2.**

*University Human Resource Quality Education and Competitiveness Model*



The framework (Figure 2) is designed to identify the effective strategies implemented by various universities in cultivating quality education and competitiveness through human resource development in the digital era.

Personal, Professional, and Organizational Development are faculty HRD strategies (Alhalboosi, 2018) that are intended to determine the quality of a university. A learning process that involves acquiring knowledge, improving skills, concepts, and processes, or changing attitudes and behaviors is aimed at developing the faculty's capacity to meet the demands of their job. To go up the ladder and achieve *professional* competency, university management initiated developmental programs that are directed to contribute to the career growth of a faculty by instituting programs that will assist them gain more comprehensive experiences that are helpful in their future role. Eventually, work evaluation and *performance assessment* ensued. A work evaluation allows the school

to recognize talents who are ready for a more significant responsibility or address the skills gap that requires remediation. Such underlying forces in the life of a faculty ensure that the education worker remains productive as they progress in their career and such will contribute to the *organizational development* goals.

Cadena et al. (2018) associated the uniqueness of an educational institution compared to other business industries and the many intricacies in measuring quality education. The authors further stressed that the school's mission in transforming young minds by creating new knowledge through teaching and disseminating such knowledge would benefit society considering the following quality indicators: *Research, Teaching, Management, Resources, Students, and Links with society* with an organized list in each dimension. These indicators are further influenced by the requirements set forth by the regulatory agencies where the school operates.

Considering the unique combination of HEI strategies and quality education initiatives, the balance, interplay, and connections of competitiveness indicators are perceived to result in the development of the university's human resources.

Without uniform methodology to measure higher education competitiveness (Dimitrova and Associate, 2017 & Narmania et al., 2021), Dimitrova and Associate (2017) identified the multidimensional functional capabilities (*Teaching-methodological and innovations capability, Scientific research, Human, Financial & Economic, and Social, Management, and Marketing*) that are significant in identifying HEIs competitive advantage.

With the given framework, the researchers hypothesized that various universities' effective human resource development strategies would result in competitiveness and quality education among HEIs in the digital era.

## **Literature Review**

Finding the right person to fit a position can be challenging, especially among knowledge workers such as university faculty. This is primarily because of the massive responsibility entrusted to an educator in

creating valuable and lifelong skills for their students. According to Sclafani (n.d.), teaching has been viewed as a highly respected vocation because teachers are expected to deliver information to their students and synthesize, identify, solve problems, create innovations, and contribute positively to civil society.

To fully prepare the educational worker, Alhalboosi (2018) presupposed that personal, professional, and organizational strategies equipped the teaching staff to meet the demands of their job following a performance assessment. The regular performance appraisal can then be used as the basis for the promotion or evaluation of rank so that a faculty can go up the ladder (p.5) for a bigger role or responsibility. Such a meritocratic evaluation system influences a faculty to pursue further studies or professional growth that includes scholarly work, often providing an additional benefit or incentive that may lead to better teaching performance that improves student learning.

Teachers thrive in an environment where a needed support system is felt. According to the study of Dacles and Associates (2016), a faculty will require solid institutional support evident in the policies, merit system, financial reward, and the establishment of a research unit to develop a research culture. As stressed by the authors, the positive effects of doing a scholarly activity will make the teachers become engaged in their discipline because research becomes a valuable means of learning that would better equip them in preparing their students to become creative contributors and not just passive consumers of information.

In a similar vein, the academic duty of a teacher is based on the premise that teaching is enhanced by research to promote the prosperity of a nation and the well-being of its citizen (Untong, 2020) since an educated population is expected to contribute to the nation's economic growth. Therefore, the teachers' academic duty goes beyond the internal stakeholders because it includes those external entities to which the school operates, and in this context, the community. The wisdom behind the school and social interaction is to assist the community in improving their quality of life. Such social responsibility is viewed to bring positive outcomes because it radiates not only the productivity outcome of a worker but also their overall well-being (Cann, 2016).

## Methodology

The study utilized qualitative and descriptive analysis to probe the variabilities and similarities of Human Resource Development strategies, quality education initiatives, and university competitiveness of HEIs in Bandung and Manila. Thematic analysis was carried out to produce more conclusive results. In this method, the researchers applied a data condensation process by dividing the texts into small meaning units through codes to form a perceived relevant category among the surveyed universities. Lastly, a theme was created based on the categories used following the HEI strategies and competitiveness framework of Cadena et al. (2018) and Dimitrova and Associate (2017) to deduce the most perceived indicators by the respondents.

Selected University President, Rector, Chancellor, Academic Head, Dean or Vice Dean, Department Coordinator, and Department Head of five (5) selected private universities in the cities of Bandung and Manila with 10,000 or more student population was chosen to participate in the study from December 2022 to February 2023. The work profile of the key informants (KI) varies from Academic Vice President, Dean, Department Chairperson, Academic Head, and Quality Assurance Officer. The use of recorded semi-structured in-depth interviews supported by the data collection using an online platform from crucial informants was applied to elucidate their perceptions. It was translated into a valid form for thematic content analysis. A letter of request was sent to the email address of the target participants to acquire their consent, and a request for an appointment to conduct an interview ensued. Archival data such as the University's Strategic plans and Annual Reports found on the university websites and available Faculty Manuals were also reviewed and analyzed as the secondary source of information for the HRD strategies and competitiveness. A cross-sectional survey and archival analysis of university documents were used to form a lucid discussion topic.

### *The University Quality Human Resources and Competitiveness*

An HEI faculty is presumed to abide by the trifocal functions of teaching, research, and community engagement. Teaching is viewed as a process that will impart knowledge and guide the student in understanding given concepts and skills, while research allows the production of new knowledge and ideas. The concerted efforts that teaching and research

generate can then be shared with society through community engagement to develop the quality of life. According to Untong (2020), such mandates are essential in the educational and integral formation of a professional, competent, service-oriented, principled, and professional citizen. With this, education has become a powerful tool in shaping economic and social progress since a highly educated workforce is expected to contribute to nation-building through the innovations they bring to the workplace.

Previous research has associated a school's competitiveness in delivering educational services through its human capital and, in this context, the teacher. Considering the complex environment in which the school operates, the faculty is at the forefront of delivering learning to students. According to Lussier and Hendon (2019), such competitiveness creates that unique advantage considering that most organizations have access to the same material and facilities-based resources but not to people. Therefore, any learning institution managers that can generate higher teacher engagement in their day-to-day job have greater chances of contributing to the competitiveness of an institution.

Competitiveness in this view can be associated with the HEIs policies and programs that equip their faculty with the necessary competencies to perform their teaching and research roles in pursuit of new knowledge within its social environment or community. In this manner, the education system ensures students' quality of learning as they meet society's demands.

The quality of the educational product is precisely linked to the competitiveness of an HEI invested in developing highly qualified staff (Dimitrova and Associate, p. 313, 2017). For the school to ensure quality, a strategy must be carefully planned. A strategy is an organization's plan to exploit opportunities and strengths, neutralize threats, and avoid weaknesses (Haizer et al., 2017).

Alhalboosi (2018) point out that the human resources' personal, professional, and organizational development involves the personal acquisition of knowledge, improving skills, concepts, rules, or changing attitudes and behaviors (p. 5), professional satisfaction and motivation as they go up the ladder to assume leadership and management positions (p. 4) and organizational development that involves reflections, system improvement, planning, and self-analysis through which an organization engages to link its employees with its mission (p. 4). To emphasize how to

best manage their employee's performance over time assessment must take place to further ensure that they remain productive as they progress in their career. Taylor & Tyler (2012) in a similar view argued that the results of the assessment will be the basis for organizational reflections, system improvement, planning, and self-analysis. In this sense, universities are meeting the expectations of both the internal and external environment.

Narmania et al., 2021 closely linked competitiveness to the quality of learning in Higher Education Institutions by citing the Standards and Guidelines for Quality Assurance in the European Higher Education Area. In its definition of quality, it emphasizes the interaction between teachers, students, and the institutional learning environment (p. 28) which signifies a strong correlation of the educational institution actors. The authors further argued that while competitiveness among HEIs can be a complex phenomenon, factors such as learning environment, the reputation of the institution, level of internationalization, employment rates of graduates, learning environment, scales of research, and citations are considered determinants of competitiveness (p. 30).

The indisputable contribution of HEIs to society and the economy were presented in the works of Dimitrova and Associate (2017), who codified the criteria to measure higher educational institutions' competitiveness, namely, teaching-methodological and innovations. These criteria stressed the quality of the teaching methodology of faculty members that secures the new learning process following the regulatory requirements where the school operates. It also identifies the level of information technology and computerization a university employ in delivering learning courses considering the needed facilities.

Since HEIs are expected to contribute to civic society, capacities in *scientific research* are codified in terms of the school, faculty, and student's participation in various research endeavors locally and internationally with the assistance of the schools' other accredited programs. The results of the study are shared with the *society to address social needs*. A solid *financial & economic* capacity of the HEI will ensure the sustainability and existence of additional financial sources from external partnerships. *Management* reflects the kind of leadership in educational institutions that will ensure quality at both departmental and institutional levels. Since HEI operates in a diverse and ever-changing environment, the *marketing* capacity of a university will help them in the proper rating system and positioning of the university both on a national and international scale.

## Results and Discussion

The research analysis follows the thematic analysis by identifying the university's personal, professional, organizational development, and performance assessment strategies (Alhalboosi, 2018). Such strategies were themed and categorized following the indicators of quality education in the systematic literature review and evaluation of programs and activities by Cadena et al. (2018).

The symbiotic connection between quality education indicators and functional capacities was evident in the various HEI initiatives. Further, it contextualized the relationships following the competitiveness model by Dimitrova and Associate (2017) as perceived by the surveyed universities.

Table 1 summarizes the responses following the essential functions in developing human resources, namely *Personal development*, *Professional development*, *Organizational Development*, and *Performance Assessment*. The data gathered (*meaning units*) from the responses were categorized and themed using the quality education indicator to understand better the school's initiative in developing its human resources.

**Table 1.**

*University Employed Human Resource Strategies & Quality Education Indicators from the Narratives of the Respondents (Manila, Philippines)*

| Strategies             | Quality Education Indicators (Generated Themes)                                  |
|------------------------|--|
| Personal               | Teaching<br>Management   |
| Professional           | Links with society<br>Teaching<br>Management<br>Resources                        |
| Organizational         | Management<br>Student<br>Links with society<br>Resources<br>Research<br>Teaching |
| Performance assessment | Management<br>Teaching<br>Links with society<br>Research                         |

*Source: Meaning units were derived from the Key Informant Interview (KII) and compiled accordingly.*

The respondents' narratives in Table 1 show significant findings directed toward organizational strategies and management indicators of quality education. This implies the effective leadership of the selected universities in Manila by providing appropriate infrastructure, necessary policies, and resources to support teaching and learning.

Noteworthy is the management indicator encompassing all HEI strategies (*personal, professional, organizational, and performance assessment*), which shows the strong influence of the school's initiatives and programs on the holistic development of the education worker. Such will provide measures of how well the school will require development to address the deficiency, maintain or even improve (Lussier & Hendon, 2019) the competency of the worker for more significant responsibilities or higher positions.

Interesting to note is the ongoing education to improve knowledge and skills for present and future jobs about the professional development strategies of the surveyed universities. Notably, the development aims at preparing the faculty for their future career by acquiring skills needed in higher-level jobs by instituting succession planning, management training, and research-related activities. Such development is further supported by the university's partnership with internal and external stakeholders providing the necessary facilities.

The limited responses to personal development strategies, as shown in Table 1, clearly show the schools' deficiency in developing the personal aspects of the faculty. Universities are accustomed to the training programs they usually provide in the in-service seminar about instruction, curriculum, technology use, and assessment. HEIs need to be more specific in terms of the strategy they employ to improve the teaching capacity since a "one-size-fits-all" training and development may not guarantee a change in attitudes and behaviors of a worker because it does not target the individual faculty knowledge, skills, and abilities (KSAs) especially when in-service seminar programs are usually held in big groups (such as a college) with a common theme due to limited budget. The pattern of results is consistent with the view of Lussier and Hendon (2019), stressing the importance of understanding the competencies to identify what the organization requires, particularly the type of training needed by the individual employee.

**TABLE 2.***University Employed Human Resource Strategies & Quality Education Indicators from the Narratives of the Respondents (Bandung, Indonesia)*

| <b>Strategies</b>      | <b>Quality Education Indicators (Generated Themes)</b>                           |
|------------------------|--|
| Personal               | Teaching<br>Management   |
| Professional           | Management<br>Links with society<br>Teaching<br>Research                         |
| Organizational         | Management<br>Research<br>Students<br>Teaching<br>Resource<br>Links with society |
| Performance assessment | Management<br>Students<br>Teaching   |

*Source: Meaning units were derived from the Key Informant Interview (KII) and compiled accordingly.*

Like universities in Manila that embraced the trifocal functions of teaching, research, and community engagement, more dynamic professional development strategies were observed in the surveyed universities in Bandung (Table 2), particularly the opportunity for career advancement. This aligns with the Tridarma (the three obligations consist of 3 points, namely *Education and Teaching, Research and Development, and Community Service*), which a faculty must carry out to display the quality of education. Most of the strategies employed constitute an impact at the organizational development level directly affected by the management indicators. An interesting result in the personal development strategy indicates the required coaching from other professors, particularly to the junior lecturers in the surveyed university.

*University Employed Human Resources Strategies & Quality Education Indicators from the Narratives of the Respondents (Manila and Bandung)*

The respondents' narratives in Table 1 and Table 2 unveiled significant findings directed toward the HEIs organizational strategies

(*research unit & incentives, dialogue with faculty, performance assessment program, qualification alignment, and integration of vision-mission*) and management indicators of quality education. This implies the effective leadership of the selected universities in Manila and Bandung by providing appropriate infrastructure, necessary policies, and resources to support the holistic teaching and learning process.

There is strong evidence of a sustainable SDG 4 means of implementation towards effective learning and scholarships in the surveyed HEIs particularly the existence of policies to evaluate performance viz-a-viz vision-mission, establishment of a research office, scholarship, and incentives provided to the teachers. The dialogue with faculty members was evident to meet the required SDG target towards the promotion of peace.

**Table 3.**

*University Competitiveness Indicators from the Narratives of the Respondents (Manila, Philippines)*

| Competitive Advantage (CA) | Functional Capacities                              | CA Indicators   |
|----------------------------|--|---|
| Production Factors         | Teaching-methodological and innovations capability | <ul style="list-style-type: none"> <li>• Product Mix of the HEI</li> <li>• Quality of the teaching-methodological work</li> <li>• Quality of disciplines taught</li> <li>• Level of computerization and IT used</li> <li>• New learning courses and methods of teaching implemented</li> <li>• Renovation of the building stock</li> <li>• Possibility to learn on an individual study plan</li> <li>• Evolution of social material-technological infrastructure</li> </ul> |
|                            | Human capital development                          | <ul style="list-style-type: none"> <li>• Qualifications of the academic staff</li> <li>• Publications and citations</li> <li>• Creative potential of the academic staff</li> <li>• Payment and incentive for the administrative and teaching staff</li> <li>• Attraction of practical specialists</li> </ul>  |

**Table 3.***Continued.*

| Competitive Advantage (CA)  | Functional Capacities          | CA Indicators  |
|---|--------------------------------|--|
| Related & Complimentary Activities                                      | Research outcome               | <ul style="list-style-type: none"> <li>• Existence of a research unit</li> <li>• Partnership with external organizations</li> <li>• Annual research conference under the auspices of the HEI</li> <li>• Participation in international research</li> <li>• Existence of accredited doctoral programs</li> <li>• Inclusion of students in the research activity in the HEI</li> </ul>       |
| Demand for educational services   | Management leadership          | <ul style="list-style-type: none"> <li>• Quality of the high -level management</li> <li>• Corporate culture</li> <li>• Quality of faculty and department level management</li> <li>• Flexibility and adaptability to changes in demand</li> <li>• Quality of activities performed by collaborators</li> </ul>  |
| Strategy, Competitive structure & degree of rivalry in education market | Marketing efforts              | <ul style="list-style-type: none"> <li>• Effective implementation of the marketing communication programs</li> <li>• Brand awareness</li> <li>• Positioning of the HEI in the rating system on a national and international scale</li> <li>• Reputation of the HEI on the labor marker</li> <li>• Quality of the educational services provided</li> <li>• Consumer satisfaction</li> </ul> |
|   | Social relevance               | <ul style="list-style-type: none"> <li>• Relationship of the HEI with the local authorities</li> <li>• Relationship of the HEI with the stakeholder</li> <li>• Relationship at all levels between the management, teaching, and students</li> </ul>  |
|   | Financial & economic stability | <ul style="list-style-type: none"> <li>• Financial sustainability of the HEI</li> <li>• Existence of additional sources of financing (sponsorship, outside investment, etc.)</li> <li>• Budget policy</li> </ul>   |

*Source: Meaning units were derived from the Key Informant Interview (KII) and compiled accordingly.*

## *Contextualizing Competitiveness (Manila, Philippines)*

### **Production Factors**

There is strong evidence of the use of technological applications and tools identified as auxiliary to the varied methodologies employed by the faculty in delivering their lessons. Such capability enriches the students' learning journeys, especially during the Covid-19 pandemic. The strong commitment of the school to the personal and professional development of the faculty was evident in the financial assistance, incentives, and necessary infrastructure as they meet the demands of their teaching profession. There is strong evidence of the qualifications of the academic staff following the CHED Memorandum Order (CMO) circular and this was evident in the results of faculty research output and publications. These systems and practices are essential in attaining competitiveness because the given resources are supplemental to the faculty in meeting the demand of their daily work as agents of learning. There is less evidence that HEIs have sufficient programs to attract foreign lecturers. The majority of the CA indicators were observed from the surveyed respondents.

### **Related & Complimentary Activities**

There is strong evidence that HEIs continuously developed a culture of research among its faculty based on the policies, financial rewards, and the establishment of a research unit. Among the CA indicators, the attraction of foreign lecturers was minimally observed from the surveyed universities.

### **Demand for Educational Services**

Strong evidence about excellence in management shows the effective leadership that provided the systems, policies, infrastructure, and other resources to support learning and teaching excellence. All CA indicators were observed from the surveyed universities.

### **Strategy, Competitive Structure & Degree of Rivalry in the Education Market**

The unique marketing initiatives employed by the HEIs by instituting a marketing office have strategically positioned the university in the local and international markets. The established relationships with other stakeholders (government agencies, private and public industries) support these endeavors. Such engagements solidify the social relevance of the university while engaging its faculty with positive benefits such as

scholarships, grants, and incentives. All CA indicators were observed from the surveyed universities except for efficiency in pricing policy.

The strong evidence of semi-internationalization of HEIs activities, including academic and non-academic initiatives as reflected in the university agenda, specifically in its scales in research and human capital development, have established the schools brand awareness, international recognition, and quality education services solidified the partnerships both in the local and international community. Financial sustainability is evident in the surveyed universities that support institutional programs with additional financial assistance from the government to support scholarships and research funding.

Interesting findings pointed out some of the surveyed university's unique strategies and initiatives, mainly using artificial intelligence to deliver the lesson and implementing an executive program to develop teachers, managers, and administrators through local and international industry partners. In addition, the selected university manages a course facilitator who designs the course plan in collaboration with other faculty for curriculum development. Moreover, to give the faculty enough time to engage in scholarly work, the school provided a de-loading policy in the form of substitution for teaching units to give the faculty enough time to conduct research. Lastly, these universities ensure the achievement of key performance indicators KPI by indicating the required number of research outputs (quota) in an academic year. Because of these exceptional initiatives, the selected universities gained full autonomy status, a center of development, and a center of excellence recognition by CHED and international agencies.

**Table 4.**

*University Competitiveness Indicators from the Narratives of the Respondents (Bandung, Indonesia)*

| Competitive Advantage (CA)  | Functional Capacities                              | CA Indicators   |
|---|--|---|
| Production Factors  | Teaching-methodological and innovations capability | <ul style="list-style-type: none"> <li>• Quality of the teaching-methodological work</li> <li>• Quality of the discipline taught.</li> <li>• Level of computerization and IT used.</li> <li>• New learning courses and methods of teaching implemented.</li> <li>• Renovation of the building block</li> <li>• Evolution of the social material-technological infrastructure</li> </ul> |
|   | Human capital development                          | <ul style="list-style-type: none"> <li>• Qualification of the teaching staff</li> <li>• Publications and citations</li> <li>• Creative potential of the academic staff</li> <li>• Payment and incentive for the administrative and teaching staff</li> </ul>  |
| Related & Complimentary Activities  | Research outcome                                   | <ul style="list-style-type: none"> <li>• Existence of a research unit</li> <li>• Participation in international research</li> <li>• Participation with external organizations in the implementation of scientific research projects</li> <li>• Scientific conference under the auspices of the HEI</li> </ul>   |
| Demand for educational services   | Management leadership                              | <ul style="list-style-type: none"> <li>• Quality of the high-level management</li> <li>• Quality of the faculty and departmental level management</li> <li>• Corporate culture</li> <li>• Flexibility and adaptability to changes in demand</li> </ul>  |
| Strategy, Competitive Structure & Degree of rivalry in the education market | Marketing efforts                                  | <ul style="list-style-type: none"> <li>• Quality of the educational services provided.</li> <li>• Consumer Satisfaction</li> </ul>  |
|   | Social relevance                                   | <ul style="list-style-type: none"> <li>• Relationship of the HEI with local authorities</li> <li>• Relationship at all levels between – the management of the HEI, the teaching staff, the assistants, and the student</li> <li>• Relationship of the HEI with stakeholder</li> </ul>   |
|   | Financial & economic stability                     | <ul style="list-style-type: none"> <li>• Financial sustainability of the HEI</li> <li>• Budget policy</li> </ul>  |

*Source: Meaning units were derived from the Key Informant Interview (KII) and compiled accordingly.*

## **Contextualizing Competitiveness (Bandung, Indonesia)**

### ***Production Factors***

There is strong evidence that HEIs integrate teaching-methodological work by encouraging professional certification of the faculty that will facilitate their scientific activities, workshops, and coaching clinics as they deliver their lessons in class. Moreover, intensive use of various learning management systems (LMS) is evident in the faculty lesson plans, modules, and lecture materials. The use of the LMS media room indicates the level of computerization and IT used in the university.

An interesting initiative is that, particularly in selecting the administrative leaders who follow the rules and mechanisms of the university. There is evidence of stimulant funds to support the graduate degree program of the faculty.

### ***Related & Complimentary Activities***

The HEI encouraged the faculty to conduct scholarly work by requiring each study program with an accredited journal. The installation of a research unit shows the strong desire of the university to increase the number of faculty researchers to acquire high-impact journal publications (SINTA) with the help of the coaching clinics.

### ***Demand for Educational Services***

An engaging corporate culture of selecting a leader must be under the organizational structure approved by local authorities indicating the quality of management is evident in the surveyed universities.

## **Strategy, Competitive Structure & Degree of Rivalry in the Education Market**

HEIs established relationships with stakeholders, local authorities, and other agencies to denote social relevance. It also assesses the quality of educational services provided using student assessment and faculty performance evaluation. Strong evidence of school financial sustainability was observed through funding and government assistance as perceived by the surveyed universities.

## **Contextualizing Competitiveness (Manila and Bandung)**

Based on the perceived competitiveness of the selected HEIs operating in Manila and Bandung, the strong presence of SDG 4 target attainment in ensuring the supply of qualified teachers as evident in the highly qualified teaching staff following CMO and SINTA, the culture of research, semi-internationalization, and financial sustainability resulted to better industry positioning of the surveyed HEIs against other universities in the field which they operate. Such advantages were evident in the government recognitions (Autonomous Level, Center of Development, & Center of Excellence), global ranking recognitions (high impact journals & accreditations), and partnerships (agreement with private & public) the HEIs endeavored.

Interesting findings of HEIs in Manila pointed out some of the surveyed university's unique strategies and initiatives, mainly using artificial intelligence to deliver the lesson and implementing an executive program to develop teachers, managers, and administrators through local and international industry partners. In addition, the selected university manages a course facilitator who designs the course plan in collaboration with other faculty for curriculum development. Moreover, to give the faculty enough time to engage in scholarly work, the school provided a de-loading policy in the form of substitution for teaching units to give the faculty enough time to conduct research. Lastly, these universities ensure the achievement of key performance indicators KPI by indicating the required number of research outputs (quota) in an academic year. Because of these exceptional initiatives, the selected universities gained full autonomy status, a center of development, and a center of excellence recognition by CHED and international agencies.

## **Comparing the human resource development strategies, quality education initiatives, and university competitiveness located in the cities of Bandung and Manila**

### ***University Strategies and Quality Education (Manila and Bandung)***

Both results (Table 1 & Table 2) of the present study provided strong evidence that research capability, teaching competency, management, availability of resources, partnership with society, and students' employability in the context of quality education should be given an equal percentage of consideration in achieving quality education. This reveals the

university's significant influence and role in associating the faculty with its mission of promoting positive change and lifelong learning.

There is enough evidence that the research initiatives of the HEIs in Manila were perceived as the dominant strategy in positioning their university in the local and international presence. In addition, an observed number of demonstrated strategies are found in the agreement for student internships.

The management indicator is essential in improving the organization's effectiveness, emphasizing the crucial leadership role that the HEIs in the cities of Bandung and Manila must possess in developing highly qualified faculty.

There is less evidence from both cities indicating the HEIs initiative to the index of interdisciplinarity among faculty.

The links with society indicators were perceived as influential to both HEIs in Bandung and Manila in developing a competent teaching workforce and access to additional resources in meeting labor market demands as the university evaluates the results of their performances.

### ***University Competitiveness (Manila and Bandung)***

#### ***Production Factors***

There is evidence that most of the competitiveness indicators (Table 3 & Table 4), particularly in teaching-methodological and innovation capability, are present in the selected HEIs in Manila and Bandung. The various methodologies used in delivering the lesson to students suggest that teaching oscillates between traditional and innovative practices. Both cities utilized software applications and necessary facilities indicating their computerization and information technology level to enrich students' learning journeys and support faculty. There needs to be more evidence gathered from the respondents about the existence of education programs taught in a foreign language from among the surveyed universities following the competitiveness model of Dimitrova and Associate (2017).

The human capital development indicators underscore the HEI's implementation of the local authority regulations on faculty alignment and certification as they develop the qualification and potential of the academic staff. The necessary incentive was given in place of faculty professional

development, particularly in their graduate study, either through incentives, assistance, or scholarship.

### ***Related & Complimentary Activities***

A research unit/office accentuates the research initiatives and accomplishments of the surveyed universities in Manila and Bandung. The presence of a university journal has allowed the faculty to present and participate in international conferences and discussion tables.

An interesting result indicates that each study program in the surveyed universities, particularly in Bandung, requires an accredited journal.

### ***Demand for Educational Services***

Evidence about the management leadership functional capacities from surveyed universities in Manila indicates quality in high-level management based on the university's strategic and operational plan. Moreover, the quality of faculty and department-level management were also observed from the corporate culture of openness and dialogue between the teacher and administration, allowing the faculty to express their opinions and become part of the decision-making process.

The surveyed universities in Bandung, on the other hand, observed the quality of high-level management following the international standards received by the school. It is also a part of the university culture that the organizational structure must be submitted and approved by the Ministry of Education and Culture of the Republic of Indonesia before the school will implement it.

Both cities displayed student-related competitiveness, particularly in the performance assessment and establishment of a partnership with local and international agencies. There is less evidence of the HEI's strong initiative relating to the student's involvement (in the number of hours), particularly in research.

### **Strategy, Competitive Structure & Degree of Rivalry in the Education Market**

The existence of the marketing office from the surveyed universities in Bandung and Manila significantly contributed to the effective implementation of the marketing programs of the school.

The selected universities in Manila manage a school website and social media platform to increase brand awareness. The school conducts student evaluations to measure the teacher's services. The faculty research output and citations are closely monitored to ensure continuous development in the specialized field.

Bandung and Manila HEIs partnered with local authorities and other stakeholders through internship and community engagement programs where faculty members are expected to share their knowledge with the community.

Regarding financial and economic stability, the schools in Manila provided the necessary funding as indicated in the university budget policy. These strategies have given the participating universities competitiveness in allocating financial assistance and support. The availability of institutional support further transgresses into the recognition given by local and international agencies, such as autonomy, de-regulated status, world rankings, and other awards in selected categories.

Like the surveyed universities in Manila, the respondents in Bandung managed an institutional marketing and collaboration unit with education stakeholders and local agencies. They conducted student assessments of their learning process through academic evaluation. There needs to be more evidence of the social media presence of the surveyed universities. However, a budget policy is also in place to reward lecturers as motivators following the Tridarma of Higher Education.

The results of the present study on university competitiveness provided supporting evidence using the competitiveness indicators present in the *production factors* (highly qualified teaching staff, modern materials, and technical facilities and infrastructure); the nature and the dynamic of the *demand for educational services*; the presence or absence of *related & complimentary activities* (scientific research, consultancy, marketing management); a chosen sustainable *strategy, competitive structure and degree of rivalry in the education market* are precise will determine the success of an HEI and therefore should be given an equal percentage of consideration in achieving quality education through the development of human resources especially in the digital era.

## Conclusion and Recommendation

In line with the UN Sustainable Development Goal 4 on Quality Education and to enable the universities to improve their competitiveness, and in consideration of the analysis conveyed, it can be concluded that the identified university strategies, quality education, and competitiveness initiatives play a crucial role in improving the educational workers in meeting the demands of their work.

The solid institutional support of the management to address the demand for educational services through its instituted policies on faculty development programs, merit systems, financial rewards, and availability of resources are effective means as education workers meet the demands of their job. In addition, the existence of a research unit signifies that the faculty are immersed in doing research and therefore become a valuable means of mobility by delivering practical application of learning to their students and community. The correlation between quality education and competitiveness, therefore, evidently implied that the critical role of HEIs in preparing their faculty as productive members of society are acquired when a teacher endeavors in scholarly work and contributes highly to the holistic development of the teaching workforce. Finally, the local and international university partnership greatly supported the school's developmental programs for the faculty because of the additional resources they gained from the engagements. These significant quality education and competitiveness outcomes are considered unique advantages of the university, especially among rivals in the education market.

The investigation revealed the strategies and initiatives employed by the selected universities in Bandung and Indonesia as an essential prerequisite to achieving quality education and competitiveness as they develop their human resources. On this basis, the researchers present the following recommendations:

- Sustain the university's competitiveness as exemplified in its institutional policies, especially those directed toward developing the faculty's personal, professional, and organizational growth.
- Design a faculty training program that directs a positive change in behavior by targeting necessary KSA's.
- Support the faculty's scholarly work by instituting a research journal per College or discipline. This will give the faculty an avenue to share the results of their study, particularly in their respective

departments, for faculty collaboration, especially in developing curriculum, classroom teaching, and management.

- For the school to exemplify its social relevance, a research policy must be integrated focusing on addressing the local/social needs of the society or community.
- To keep the university on the cutting edge, a clear policy about student research hours must reflect the school's quality education initiative by engaging their students in generating new ideas and knowledge locally and internationally.
- Since the university's links to society have contributed to the development of the faculty, the university must solidify its social relevance through memorandum and agreements that will generate additional resources for the teaching environment.
- For other researchers to consider the impact of the educational global ranking system in the retention of human resources and employment of graduates.

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