Journal of Information Systems Engineering and Management
2023, 8(4)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

Philippines' State Universities and Colleges Roadmap Towards Internationalization

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ARTICLE INFO

Received: 05 Nov 2023

Revised: 20 Dec 2023

Accepted: 28 Dec 2023

ABSTRACT

Higher Education Institutions particularly, State University and Colleges engage in a variety of international initiatives in response to this growing globalized village and have launched into several approaches to become global educational institutions. Commission on Higher Education (CHED) has similarly recognized the need for internationalization as it gears up to support significant researches on this innovation considering the thousands of HEIs comprising both state and private institutions. CHED's mandates include enhancement of institutional quality assurance and directs all HEIs to institute the necessary mechanisms that ensure graduates can competently cope with the standards of a rapidly changing globalized world and be mindful of global competitiveness. The internationalization of higher education is not only an internal requirement in the country, it is also seen as a strong component for economic development. The aim of the study is to determine the challenges of state universities and colleges and guide to attain Quality Assurance towards the pathways to Internationalization. The study utilized the Explanatory Sequential Mixed Methods Design. The respondents of the study were the Top Level and Middle Level administrators of State Universities and Colleges of selected public Higher Education Institution. This study utilized a standardized challenges and level of accomplishments to internationalization questionnaire with multiple choice questions are the most popular survey question type. To make sure that State Universities and Colleges in the Philippines are moving in the proper direction toward internationalization, a road map must be developed. A detailed strategy plan that consider faculty and student mobility, accreditation, quality control, global standing, and funding must be prepared. In the same way, higher education institutions should be strengthened and guided in their involvement in international conferences, research partnerships, collaborations, Linkages, and Networking. The university's involvement in foreign projects is crucial. State Universities and Colleges must fulfill this role by offering a range of programs and building links with other countries in order to prepare its faculty, students, and staff to comprehend and function effectively in the global world. With an alternative hypothesis (Ha): state universities and colleges have no developed concrete road map to address the key issues in Higher Education Institutions towards Internationalization.

Keywords: Road Map, Challenges, Internationalization, State Universities and Colleges.

INTRODUCTION

A road map is a strategic plan that outlines an objective or intended result as well as the key actions or benchmarks required to achieve it. It also acts as a vehicle for communication, a high-level document that aids in articulating strategic thinking, the rationale behind the objective and the strategy for achieving it. The most crucial thing to keep in mind when trying to comprehend the roadmap's function is that it is a strategic document, not a record of all the specifics of the plan. In light of this, it is equally important to consider what it is not (Roadmap Basics, 2022).

According to CHED (2019), out of the 2,393 higher education institutions in the Philippines, 560 are currently accredited by four public and private higher education accrediting agencies. The community areas evaluated are Organization, Faculty, Education, Research Institutes, Student Services, Facilities, Community Extensions, and Libraries.

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Journal of Information Systems Engineering and Management
2023, 8(4)
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https://www.jisem-journal.com/

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The Philippine Higher Education Institutions' institutional strategy amply demonstrates their desire to advance toward internationalization through their graduates and accrediting programs. With highly skilled and committed human resources, the university must maintain its threefold role and support the school administration's initiatives in executing its strategic plans and achieving its particular internationalization goals. In the Philippines, the Commission on Higher Education (CHED) has similarly acknowledged the need for internationalization and is prepared to support significant research on this topic. The government also plays a significant role in supporting HEI initiatives in terms of educational programs and projects for student and faculty mobility as well as quality assurance in accordance with the ASEAN Integration. This is because there are thousands of higher education institutions, both public and private.

Internationalization, as defined by CHED (2019), is a deliberate process, an empowering product, incorporating international and multicultural dimensions into purpose functions and post-secondary and post-secondary education delivery. On the one hand, the values, interests and goals of the institution are to enhance national development and ASEAN community building. Internationalization, as defined by the International Association of Universities (2019), is “a deliberate process and means of improving the quality and excellence of higher education and research. Instead, we must meet the needs of society.

Internationalization is a purposeful process and a transformative outcome, integrating diverse international and multicultural aspects into the objective functioning and delivery of post-secondary and higher education, while at the same time promoting institutional, national development, and ASEAN values, Respect interests and goals. Community Building (CMO 55, series 2016).

Research on domestic internationalization processes is lacking. The value of this study is primarily to assess the critical role that individual managers can play in the internationalization activities of universities in higher education. A thorough understanding of internationalization is essential for management to sustain its internationalization efforts. The results of this study can provide university decision-makers with valuable information to guide them in the internationalization process for managing the university.

Statement of the Problem

This study investigated the challenges of State Universities and Colleges as obstacles in the path of institution to internationalization. It attempted to answer the following research questions:

1. How may the road map towards internationalization be assed based on the following parameters:
    1.1. Mobility:
        1.1.1. Students;
        1.1.2. Faculty
    1.2. Accreditation Level;
    1.3. Quality Assurance;
    1.4. World Ranking; and
    1.5. Funding?
2. How may internationalization be assed based on the following aspect:
    2.1. International Conferences;
    2.2. Research Partnerships and Collaborations; and
    2.3. Linkages and Networking?
3. Does the road map exert significant effects on toward internationalization?

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Research Article

METHODOLOGY

Explanatory Sequential Mixed Methods Design (Creswell, 2014) method of research was utilized. It involves a two-phase project in which the researcher collects quantitative data in the first phase, analyzes the results, and then uses the results to plan (or build on to) the second, qualitative phase. The quantitative results typically inform the types of participants to be purposefully selected for the qualitative phase and the types of questions that will be asked of the participants. The overall intent of this design is to have the qualitative data help explain in more detail the initial quantitative results. A typical procedure might involve collecting survey data in the first phase, analyzing the data, and then following up with qualitative interviews to help explain the survey responses.

Table 1: Respondents of the Study

Respondents (Target Group/ Sample Composition)	**Population and Sample Size**	
	Population of Selected Areas (Planned)	**Sample Population Size (Actual Coverage)**
Top Level Administrators of State Universities and Colleges	50	39
Middle Level Administrators of State Universities and Colleges	150	130
Total	**200**	**169**

Instrument of the Study

Survey was sought in determining the challenges to internationalization of state universities and colleges in Region III.

The data were retrieved, collected and will be tabulated and processed using Statistical Packages for Social Sciences (SPSS). In order to analyze and interpret the data gathered, The statistical analysis used is the Frequency analysis, it is a descriptive statistical method that shows the number of occurrences of each response chosen by the respondents. Weighted mean. The weighted mean is a type of mean that is calculated by multiplying the weight (or probability) associated with a particular event or outcome with its associated quantitative outcome and then summing all the products together. Also, Pearson Correlation Coefficient and Regression analysis. If p-value </= alpha level; the data is not normally distributed. If p-value > alpha level; the data is normally distributed. Use alpha level = 0.05. Roadmap will have significant effects on internationalization if the p-value (0.000) </= alpha level (0.05).

Presentation, Analysis, and Interpretation of Data

Profile of the Respondents and Their Institutions

Table 2: Profile of Respondents According to Position/Designation

Position/Designation	**HEI1**		**HEI2**		**HEI3**		**HEI4**		**TOTAL**	
	f	**%**	**f**	**%**	**f**	**%**	**f**	**%**	**f**	**%**
Head of Institution (President)	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Deputy Head of Institution (Vice-President/ Chancellor /Vice-Chancellor /Campus Director)	2	7.41%	0	0.00%	6	22.22%	4	7.27%	12	7.10%
Director/ Registrar/ Unit Head/ Office Head	4	14.81%	6	10.00%	15	55.56%	14	25.45%	39	23.08%
Dean	4	14.81%	2	3.33%	6	22.22%	7	12.73%	19	11.24%
Department Head / Program Chair	12	44.44%	15	25.00%	0	0.00%	10	18.18%	37	21.89%
Faculty	5	18.52%	37	61.67%	0	0.00%	20	36.36%	62	36.69%

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Other	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
TOTAL	**27**	**100%**	**60**	**100%**	**27**	**100%**	**55**	**100%**	**169**	**100%**

To answer the first research question, how may the road map towards internationalization be assessed based on the following parameters: Students and Faculty Mobility, Accreditation Level, Quality Assurance, World Ranking, and Funding, the following are the data:

Roadmap

Table 3: Assessment of the Roadmap Towards Internationalization (OVERALL)

Indicators	HEI1			HEI21			HEI3			HEI4			OVERALL		
	Ave	SD	VI	Ave	SD	VI	Ave	SD	VI	Ave	SD	VI	Ave	SD	VI
Faculty and Student Mobility	2.41	1.10	NE	2.24	1.05	NE	2.05	0.81	NE	2.50	0.78	LE	2.30	0.93	NE
Accreditation Level	2.72	1.10	LE	2.37	1.05	NE	2.67	1.30	LE	2.65	1.03	LE	2.60	1.12	LE
Quality Assurance	2.04	1.01	NE	2.13	0.91	NE	1.78	0.92	NE	1.57	0.52	NE	1.88	0.84	NE
World Ranking	3.81	0.96	E	2.60	1.18	LE	2.93	1.00	LE	3.24	1.00	LE	3.14	1.04	LE
Funding	2.64	1.38	LE	2.29	0.98	NE	1.96	0.93	NE	1.59	0.78	NE	2.12	1.02	NE
OVERALL	2.72	1.11	LE	2.32	1.03	NE	2.28	0.99	NE	2.31	0.82	NE	2.41	0.99	NE

Legend: NI - No idea, NE - Not evident, LE - Lightly evident, E - Evident, VE - Very evident

Tables shows that for HEI1 the indicator World Ranking has the highest Average of 3.81 (SD of .96) with Verbal Interpretation of Evident and the lowest is Indicator is Quality Assurance with the average of 2.04 (SD of 1.01) Not Evident. HEI2 has the highest average of 2.6 (SD-1.18) with verbal interpretation of Lightly Evident and lowest average of 2.13 (SD-0.91) Not evident in Quality Assurance. HEI 3 has the highest average of 2.93 (SD-1.00) but verbal interpretation is Less Evident in World Ranking and the lowest average in Quality Assurance of 1.78 (SD-0.92) Not Evident. HEI4 has the highest average of 3.24 (SD-1.00) Less Evident in World Ranking and lowest average in Quality Assurance with 1.57 (SD-0.52) Not Evident.

Overall, the indicator World Ranking has the highest average of 3.14 (SD-1.04) with verbal interpretation of Less Evident while the lowest average of 1.88 (SD-0.84) in the indicator (Quality Assurance) with verbal interpretation of Not Evident.

The above result is far from Malaysia and South Korea intention by 2020 and 2023, respectively, intend to have 200,000 international students each (IEAA 2015). The need for EMI provision has increased as a result of the rise in domestic students enrolling in higher education and the effort to draw in foreign students. Universities in the Asia-Pacific area now have a more globally diverse student body.

Table 4: Assessment of the Roadmap Towards Internationalization Based on Faculty and Student Mobility

Indicators	HEI1			HEI21			HEI3			HEI4			OVERALL		
	Ave	SD	VI	Ave	SD	VI	Ave	SD	VI	Ave	SD	VI	Ave	SD	VI
Your institution has strategic plan for student mobility.	2.00	0.88	NE	1.73	0.76	NE	1.37	0.49	NI	2.15	0.70	NE	1.81	0.71	NE
There are international students spending between 1 and 12 months at your institution from the last ten years	2.41	1.28	NE	2.65	1.23	LE	2.19	0.79	NE	2.71	0.76	LE	2.49	1.01	NE
Your institution has strategic plan for	2.15	0.95	NE	1.90	0.86	NE	1.56	0.51	NE	1.91	0.67	NE	1.88	0.75	NE

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Journal of Information Systems Engineering and Management
2023, 8(4)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

student faculty member mobility.															
There are full-time academic staff members who are international in your institution	3.07	1.30	LE	2.67	1.34	LE	3.07	1.44	LE	3.24	0.96	LE	3.01	1.26	LE
OVERALL	**2.41**	**1.10**	**NE**	**2.24**	**1.05**	**NE**	**2.05**	**0.81**	**NE**	**2.50**	**0.78**	**LE**	**2.30**	**0.93**	**NE**

Legend: NI - No idea, NE - Not evident, LE - Lightly evident, E - Evident, VE - Very evident

Table shows the HEIs Assessment of the Road Map Towards Internationalization based on Faculty and Student Mobility. HEI1 has the highest average of 3.07 (SD-1.30) in the indicator that *there are full-time academic staff members who are international in your institution* and the lowest average of 2.00 (SD-0.88) in the factor your institution has strategic plan for student mobility. HEI2 has highest average of 2.67 (SD-1.34) Less Evident in indicator that there are full-time academic staff members who are international in your institution and lowest average of 1.73 (SD-0.76) Not Evident in the indicator *Your institution has strategic plan for student mobility*. HEI3 has highest average of 3.07 (SD-1.44) in the indicator There are full-time academic staff members who are international in your institution and lowest average 1.37 (SD-0.49) in the indicator *Your institution has strategic plan for student mobility*. HEI4 has highest average of 3.24 (SD-0.96) Less Evident in the *indicator There are full-time academic staff members who are international in your institution* and lowest average 1.91 (SD-0.67) in the indicator *Your institution has strategic plan for student faculty member mobility*.

Overall, the highest average 3.01 (SD-1.26) in the indicator *There are full-time academic staff members who are international in your institution* and lowest indicator in the *Your institution has strategic plan for student mobility* with the average of 1.81 (SD-0.71) Not evident.

Parallel to this, the results of a study conducted in UPLB regarding student mobility revealed that while it was still higher than the SUCs, which had internationalization on student mobility as to a least level, only about 4% of its students were enrolled in foreign institutions (Vasquez-Rivera, 2019).

The key internationalization strategies in the context of Philippine higher education are as follows: establishing a quality assurance framework and processes that will strengthen the quality, effectiveness, and efficiency of more than 1800 Philippine higher education institutions; increasing student, faculty, and staff mobility across the nation and in regions; and creating a conducive environment for international exchange/collaboration and for (Licuanan, 2012).

Table 5: Assessment of the Roadmap Towards Internationalization Based on Accreditation Level

Indicators	**HEI1**			**HEI21**			**HEI3**			**HEI4**			**OVERALL**		
	Ave	**SD**	**VI**	**Ave**	**SD**	**VI**	**Ave**	**SD**	**VI**	**Ave**	**SD**	**VI**	**Ave**	**SD**	**VI**
50% or more of the programs in your institution are level 4 accredited	3.19	1.08	LE	2.70	1.09	LE	2.74	1.26	LE	2.87	1.00	LE	2.87	1.11	LE
75% or more of the programs in your institution are level 3 accredited	2.63	1.18	LE	2.37	1.09	NE	2.70	1.20	LE	2.91	1.01	LE	2.65	1.12	LE
100% of the programs in your institution are level 2 accredited.	2.33	1.04	NE	2.03	0.97	NE	2.56	1.45	LE	2.18	1.07	NE	2.28	1.13	NE
OVERALL	**2.72**	**1.10**	**LE**	**2.37**	**1.05**	**NE**	**2.67**	**1.30**	**LE**	**2.65**	**1.03**	**LE**	**2.60**	**1.12**	**LE**

Legend: NI - No idea, NE - Not evident, LE - Lightly evident, E - Evident, VE - Very evident

The table shows that HEI1 has highest average of 3.19 (SD-1.08) Less Evident in the indicator that 50% or more of the programs in your institution are level 4 accredited and lowest average of 2.33 (SD-1.04) 100% of the programs in

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Journal of Information Systems Engineering and Management
2023, 8(4)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

your institution are level 2 accredited. HEI2 had the lowest average of 2.70 (SD-1.09) Less Evident in indicator 50% or more of the programs in your institution are level 4 accredited and lowest average of 2.03 (SD-0.97) in indicator 100% of the programs in your institution are level 2 accredited. HEI3 has the highest average of 2.74 (SD-1.26) in indicator 50% or more of the programs in your institution are level 4 accredited and lowest average of 2.56 (SD-1.45) in the indicator 100% of the programs in your institution are level 2 accredited. HEI4 has the highest average 2.91 (SD-1.01) in the indicator 75% or more of the programs in your institution are level 3 accredited and lowest average of 2.18 (SD-1.07) Not Evident in the indicator 100% of the programs in your institution are level 2 accredited.

Overall, the highest average of 2.87 (SD-1.11) Less Evident is the indicator 50% or more of the programs in your institution are level 4 accredited and the lowest average of 2.28 (SD-1.13) Not Evident in the indicator 100% of the programs in your institution are level 2 accredited.

Accreditation systems ensure high-level or good-practice standards to differentiate institutions enjoying high degree of autonomy or degree program with relatively equal levels of quality (Sanyal & Martin, 2007). It provides a culture of periodic evaluation and identification of areas for improvement; (Cueto et al., 2006).

The membership, networks, and connections of the organization play a significant role in the accreditation criteria. Academic institutions meet with representatives from diverse businesses and other HEIs locally and abroad to discuss how they deliver high-quality services and education to their clients.

Regarding the readiness of Philippine HEIs for ASEAN 2015, Cruz (2014) stated in one of the UP Forums that policies on accreditation and monitoring of HEIs and programs "need to strengthen and strictly implement policies to ensure quality and competitiveness and a need to create a policy to facilitate the accreditation of HEIs and programs by international bodies."

Table 6: Assessment of the Roadmap Towards Internationalization Based on Quality Assurance

Indicators	**HEI1**			**HEI21**			**HEI3**			**HEI4**			**OVERALL**		
	Ave	**SD**	**VI**	**Ave**	**SD**	**VI**	**Ave**	**SD**	**VI**	**Ave**	**SD**	**VI**	**Ave**	**SD**	**VI**
Your institution has Institutional Quality Assurance	1.48	0.89	NI	1.52	0.62	NE	1.67	0.68	NE	1.00	0.00	NI	1.42	0.55	NI
Your institution offer distance, online and/or e-learning courses (including MOOCs) / degree programs that are made available to students in other countries	2.59	1.12	LE	2.73	1.19	LE	1.89	1.15	NE	2.15	1.04	NE	2.34	1.13	NE
OVERALL	**2.04**	**1.01**	**NE**	**2.13**	**0.91**	**NE**	**1.78**	**0.92**	**NE**	**1.57**	**0.52**	**NE**	**1.88**	**0.84**	**NE**

Legend: NI - No idea, NE - Not evident, LE - Lightly evident, E - Evident, VE - Very evident

The table shows that HEI1 has the higher average of 2.59 (SD-1.12) Less Evident in the indicator Your institution offer distance, online and/or e-learning courses (including MOOCs) / degree programs that are made available to students in other countries and lower average of 1.48 (SD-0.89) No Idea in the indicator Your institution has Institutional Quality Assurance. HEI2 has the higher average of 2.73 (SD-1.19) Less Evident in the indicator Your institution offer distance, online and/or e-learning courses (including MOOCs) / degree programs that are made available to students in other countries and lower average of 1.52 (SD-0.62) Not Evident in the indicator Your institution has Institutional Quality Assurance. HEI3 has the higher average of 1.89 (SD-1.15) Not Evident in the indicator Your institution offer distance, online and/or e-learning courses (including MOOCs) / degree programs that are made available to students in other countries and lower average of 1.67 (SD-0.68) Not Evident in the indicator Your institution has Institutional Quality Assurance. HEI4 has the higher average of 2.15 (SD-1.04) Not Evident in the indicator Your institution offer distance, online and/or e-learning courses (including MOOCs) / degree programs

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Journal of Information Systems Engineering and Management
2023, 8(4)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

that are made available to students in other countries and lower average of 1.00 (SD-0.00) No Idea in the indicator Your institution has Institutional Quality Assurance.

Overall, the higher average of 2.34 (SD-1.13) Not Evident in the indicator Your institution offer distance, online and/or e-learning courses (including MOOCs) / degree programs that are made available to students in other countries and lower average of 1.42 (SD-0.55) No Idea in the indicator Your institution has Institutional Quality Assurance.

The Philippine Quality Award, a national quality award equivalent to the Malcolm Baldrige National Quality Award (MBNQA) of the US and those in Europe and Asia ("Background of PQA"), is another potential assurance mechanism that HEIs may be able to get. Six HEIs have been acknowledged for their dedication to quality management, and two have been recognized for their proficiency in the field. The Colegio de San Juan Letran Manila and the Lyceum of the Philippines Laguna are the most recent honorees in the academic field for the year 2015.

Table 7: Assessment of the Roadmap Towards Internationalization Based on Word Ranking

Indicators	HEI1			HEI21			HEI3			HEI4			OVERALL		
	Ave	SD	VI	Ave	SD	VI	Ave	SD	VI	Ave	SD	VI	Ave	SD	VI
Your institution has been included in the World Ranking	3.81	0.96	E	2.60	1.18	LE	2.93	1.00	LE	3.24	1.00	LE	3.14	1.04	LE

Legend: NI - No idea, NE - Not evident, LE - Lightly evident, E - Evident, VE - Very evident

Table shows that HEI1 has the average of 3.81 (SD-0.96) Evident in the indicator Your institution has been included in the World Ranking. HEI2 has the average of 2.60 (SD-1.18) Less Evident in the indicator Your institution has been included in the World Ranking. HEI3 has the average of 2.93 (SD-1.00) Less Evident in the indicator Your institution has been included in the World Ranking. HEI4 has the average of 3.24 (SD-1.00) Less Evident in the indicator Your institution has been included in the World Ranking.

Overall, the four HEI has the average of 3.14 (SD-1.04) Less Evident in the indicator Your institution has been included in the World Ranking.

The number of HEIs that are ranked varies by nation. The nation with the most people the USA (5,300), China (2,914), and the Philippines are the top three HEIs (2, 393). in Singapore the smallest amount of HEIs. Global and regional higher education ranking systems assess various factors.

The areas for evaluation include research and development. Ateneo de Manila University (ADMU), which was ranked 254 in the THES-QS World Ranking in 2008, was placed between positions 651 and 700 in the 2019 QS World University Ranking. The QS Asia University Ranking, which was placed 70 in 2008 but dropped to 115 in 2019, shows the similar pattern.

The University of the Philippines (UP) ranked 276 in the 2008 THES-QS Ranking but fell to =384 in the 2019 QS World University Ranking. In the QS Asia University Ranking, it rose from 281 in 2009 to 72 in 2019.

The University of Santo Tomas (UST) is ranked between positions 401 and 500 in the 2008 THES-QS World Raking decreased to a range of 801-100 in 2019. The University of QS Asia ranking, where it increased from 183 in 2009 to 162 in 2019, provides a better picture.

In the 2008 THES-QS, De La Salle University (DLSU) was ranked between positions 401 and 500. ranking, however in 2019 it was between 801 and 100. It fell drastically in the QS Asia University Ranking. 76 in 2009, to position 155 in 2019.

In the same issue of world ranking, the Japanese government has provided 7.7 billion (US$77 million) to 20 "global" institutions to promote internationalization and to 10 "top" universities to advance them to the top of the global

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Journal of Information Systems Engineering and Management
2023, 8(4)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

rankings. The Education Ministry specifies that increasing the "percentage of foreign teachers and students" and the "number of English-language lectures" are two requirements that apply to both funding streams.

Table 8: Assessment of the Roadmap Towards Internationalization Based on Funding

Indicators	HEI1			HEI21			HEI3			HEI4			OVERALL		
	Ave	SD	VI	Ave	SD	VI	Ave	SD	VI	Ave	SD	VI	Ave	SD	VI
Your institution has sufficient funding from external source.	2.63	1.36	LE	2.35	0.94	NE	1.89	0.85	NE	1.76	0.79	NE	2.16	0.98	NE
Your institution has sufficient funding from internal generating resources	2.48	1.40	NE	2.07	0.95	NE	1.70	0.78	NE	1.53	0.81	NE	1.94	0.98	NE
Your institution has sources of funds for the implementation of international activities at your institution?	2.81	1.39	LE	2.45	1.05	NE	2.30	1.17	NE	1.47	0.74	NI	2.26	1.09	NE
OVERALL	**2.64**	**1.38**	**LE**	**2.29**	**0.98**	**NE**	**1.96**	**0.93**	**NE**	**1.59**	**0.78**	**NE**	**2.12**	**1.02**	**NE**

Legend: NI - No idea, NE - Not evident, LE - Lightly evident, E - Evident, VE - Very evident

Table shows that HEI1 has the highest average of 2.81 (SD-1.39) Less Evident in the indicator Your institution has sources of funds for the implementation of international activities at your institution and lowest average of 2.48 (SD-1.40) Not Evident in the indicator Your institution has sufficient funding from internal generating resources. HEI2 has the highest average of 2.45 (SD-1.05) Not Evident in the indicator Your institution has sources of funds for the implementation of international activities at your institution and lowest average of 2.07 (SD-0.95) Not Evident in the indicator Your institution has sufficient funding from internal generating resources. HEI3 has the highest average of 2.30 (SD-1.17) Not Evident in the indicator Your institution has sources of funds for the implementation of international activities at your institution and lowest average of 1.70 (SD-0.78) Not Evident in the indicator Your institution has sufficient funding from internal generating resources. HEI4 has the highest average of 1.76 (SD-0.79) Not Evident in the indicator Your institution has sufficient funding from external sources and lowest average of 1.47 (SD-0.74) No Idea in the indicator Your institution has sources of funds for the implementation of international activities at your institution.

Overall, all four HEIs has the highest average of 2.26 (SD-1.09) Not Evident in the indicator Your institution has sources of funds for the implementation of international activities at your institution and lowest average of 1.94 (SD-0.98) Not Evident in the indicator Your institution has sufficient funding from internal generating resources.

As Commissioner De Vera stated in 2019 that "CHED will continue to expand funds for internationalization to assist HEIs link with institutions abroad," it is clear that funding for HEIs in the Philippines is extremely restricted.

Financial resources may be provided by the institution or obtained from funders or stakeholders who have a particular interest in the benefits of internationalization, according to Veronica Esposo Ramirez in 2019.

The following are findings that will answer the research question No.2 How may internationalization be assed based on the following aspect**:** international Conferences, research Partnerships and Collaborations, and Linkages and Networking.

Internationalization

Table 9: Assessment of Internationalization (OVERALL)

Indicators	HEI1			HEI21			HEI3			HEI4			OVERALL		
	Ave	SD	VI	Ave	SD	VI	Ave	SD	VI	Ave	SD	VI	Ave	SD	VI
International Conference	1.70	0.87	NE	1.65	0.78	NE	1.67	0.68	NE	1.02	0.13	NI	1.51	0.62	NE

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Journal of Information Systems Engineering and Management
2023, 8(4)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

Research Partnerships and Collaborations	3.04	1.24	LE	2.41	1.05	NE	2.10	1.06	NE	2.18	0.88	NE	2.43	1.06	NE
Linkages and Networking	2.19	1.21	NE	2.17	1.04	NE	2.11	1.01	NE	1.98	0.76	NE	2.11	1.01	NE
Level of Importance	2.56	1.25	LE	2.27	0.88	NE	1.93	0.87	NE	1.56	0.66	NE	2.08	0.92	NE
OVERALL	2.37	1.14	NE	2.12	0.94	NE	1.95	0.91	NE	1.68	0.61	NE	2.03	0.90	NE

Legend: NI - No idea, NE - Not evident, LE - Lightly evident, E - Evident, VE - Very evident

Table shows that HEI1 has the highest average of 3.04 (SD-1.24) Less Evident in the indicator Research Partnerships and Collaborations and lowest average of 1.70 (SD-0.87) Not Evident in the indicator International Conference. HEI2 has the highest average of 2.41 (SD-1.05) Not Evident in the indicator Research Partnerships and Collaborations and lowest average of 1.65 (SD-0.78) Not Evident in the indicator International Conference. HEI3 has the highest average of 2.11 (SD-1.01) Not Evident in the indicator: Linkages and Networking and lowest average of 1.67 (SD-0.68) Not Evident in the indicator: International Conference. HEI4 has the highest average of 2.18 (SD-0.88) Not Evident in the indicator: Research Partnerships and Collaborations and lowest average of 1.02 (SD-0.13) No Idea in the Indicator: International Conference.

Overall, all four HEIs has the highest average of 2.43 (SD-1.06) but Not Evident in the indicator Research Partnerships and Collaborations and lowest average of 1.51 (SD-0.62) Not Evident in the indicator: International Conference.

Links are essential elements of creativity to get excellent results and production from collaboration. Institutions with a long history of collaboration across disciplines could readily get into joint ventures with businesses for the benefit of both parties. In order to attract the interest of foreign enterprises to associate with them, Filipino HEIs must in fact provide something unique and remarkable from their programs and services. According to Azanza (2014), "the relationship should be more of a symbiotic relationship with partners almost on equal "footing"/level or "gaining" something essential from each other; or a "mutualism" where each partner has "strength/s" to share with the other. It is important to evaluate the relationship so that neither party ends up acting as a "predator" or "prey" to the other.

Malaysia, which is the most prolific nation in the area after Singapore, has maintained a high growth rate in research production (above the global average). In terms of research output, national R&D spending, and the number of full-time researchers in the nation, Thailand comes in second. The Philippines produces the least research among the other countries.

Table 10: Assessment of Internationalization Based on International Conference

Indicator	**HEI1**			**HEI21**			**HEI3**			**HEI4**			**OVERALL**		
	Ave	**SD**	**VI**	**Ave**	**SD**	**VI**	**Ave**	**SD**	**VI**	**Ave**	**SD**	**VI**	**Ave**	**SD**	**VI**
Your institution participates in international conferences?	**1.70**	**0.87**	**NE**	**1.65**	**0.78**	**NE**	**1.67**	**0.68**	**NE**	**1.02**	**0.13**	**NI**	**1.51**	**0.62**	**NE**

Legend: NI - No idea, NE - Not evident, LE - Lightly evident, E - Evident, VE - Very evident

Table shows that in the indictor: Institution participates in international conferences, HEI1 has the highest average of 1.70 (SD-0.87) Not Evident and HEI4 has the lowest average of 1.02 (SD-0.13) No Idea.

Overall, all four HEIs has the average of 1.51 (SD-0.62) Not Evident in the Indicator: Institution participates in international conferences.

Conferences are frequently held in the worlds of academia, science, and industry. All of the major academic disciplines exhibit evidence of their use, and learned societies and organizations also employ them (Rowe, 2017a, 2018a). Research and information are shared through conference presentations, which also provide attendees the chance to actively participate in the activities they attend (Rowe 2018a, p. 718). As a result, conferences are now a

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Journal of Information Systems Engineering and Management
2023, 8(4)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

crucial component of higher education institutions' (HEI) knowledge-sharing, professional development, and ongoing professional education practices.

Table 11: Assessment of Internationalization Based on Research Partnerships and Collaborations

Indicators	HEI1			HEI21			HEI3			HEI4			OVERALL		
	Ave	SD	VI	Ave	SD	VI	Ave	SD	VI	Ave	SD	VI	Ave	SD	VI
Your institution has international research partnership?	2.63	1.21	LE	2.05	1.03	NE	2.00	0.83	NE	2.04	0.84	NE	2.18	0.98	NE
Your institution offers either joint degree programs or dual/double and multiple degree or both programs with international partners?	3.33	1.21	LE	2.83	1.12	LE	2.11	0.89	NE	2.55	1.07	LE	2.71	1.07	LE
Your institution has international research collaborations?	3.15	1.29	LE	2.33	1.00	NE	2.19	1.47	NE	1.95	0.73	NE	2.40	1.12	NE
OVERALL	**3.04**	**1.24**	**LE**	**2.41**	**1.05**	**NE**	**2.10**	**1.06**	**NE**	**2.18**	**0.88**	**NE**	**2.43**	**1.06**	**NE**

Legend: NI - No idea, NE - Not evident, LE - Lightly evident, E - Evident, VE - Very evident

The table shows that HEI1 has the highest average of 3.33 (SD-1.21) Less Evident in the indicator: institution offers either joint degree programs or dual/double and multiple degree or both programs with international partners and lowest average of 2.63 (SD-1.21) Less Evident in the indicator: institution has international research partnership. HEI2 has the highest average of 2.83 (SD-1.12) Less Evident in the indicator: institution offers either joint degree programs or dual/double and multiple degree or both programs with international partners and lowest average of 2.05 (SD-1.03) Not Evident in the indicator institution has international research partnership. HEI3 has the highest average of 2.19 (SD-1.47) Not Evident in the indicator: institution has international research collaborations and lowest average of 2.00 (SD-0.83) Not Evident in the indicator: institution has international research partnership. HEI4 has the highest average of 2.55 (SD-1.07) Less Evident in the indicator: institution offers either joint degree programs or dual/double and multiple degree or both programs with international partners and lowest average of 1.95 (SD-0.73) Not Evident in the indicator: institution has international research collaborations.

Overall, all four HEIs has the highest average of 2.71 (SD-1.07) Less Evident in the indicator: institution offers either joint degree programs or dual/double and multiple degree or both programs with international partners and lowest average of 2.18 (SD-0.98) Not Evident in the indicator: Institution has international research partnership.

Staff and student mobility, intercultural understanding, global collaboration, and easier access to scientific publications are all advantages of internationalizing higher education (Jibeen & Khan, 2015).

Table 12: Assessment of Internationalization Based on Linkages and Networking

Indicators	HEI1			HEI21			HEI3			HEI4			OVERALL		
	Ave	SD	VI	Ave	SD	VI	Ave	SD	VI	Ave	SD	VI	Ave	SD	VI
Your institution has international linkages and networking?	**2.19**	**1.21**	**NE**	**2.17**	**1.04**	**NE**	**2.11**	**1.01**	**NE**	**1.98**	**0.76**	**NE**	**2.11**	**1.01**	**NE**

Legend: NI - No idea, NE - Not evident, LE - Lightly evident, E - Evident, VE - Very evident

Table shows that in the indicator *Your institution has international linkages and networking* HEI1 has the average of 2.19 (SD-1.21) Not Evident, HEI2 has the average of 2.17 (SD-1.04) Not Evident, HEI3 has the average of 2.11 (SD-1.01) Not Evident, HEI4 has the average of 1.98 (SD-0.76) Not Evident. Overall, all four HEIs has the average of 2.11 (SD-1.01) Not Evident.

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Journal of Information Systems Engineering and Management
2023, 8(4)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

Table 13: Assessment of Internationalization Based on Level of Importance

Indicators	HEI1			HEI21			HEI3			HEI4			OVERALL		
	Ave	SD	VI	Ave	SD	VI	Ave	SD	VI	Ave	SD	VI	Ave	SD	VI
Has the level of importance of internationalization changed over the last five years in your institution?	**2.56**	**1.25**	**LE**	**2.27**	**0.88**	**NE**	**1.93**	**0.87**	**NE**	**1.56**	**0.66**	**NE**	**2.08**	**0.92**	**NE**

Legend: NI - No idea, NE - Not evident, LE - Lightly evident, E - Evident, VE - Very evident

Table shows that in indicator: Has the level of importance of internationalization changed over the last five years in your institution, HEI1 has average of 2.56 (SD-1.25) Less Evident, HEI2 has the average of 2.27 (SD-0.88) Not Evident, HEI3 has the average of 1.93 (SD-0.87) Not Evident and HEI4 has the average of 1.56 (SD-0.66) Not Evident. Overall, all four HEIs has the average of 2.08 (SD-0.92) Not Evident.

Administrators face difficulties balancing opposing agendas and dealing with demands as a result of increased rivalry among educational institutions regarding the internationalization process. Since conceptualization and methods differ from institution to institution and country to country, it is crucial to see how administrators conceive and implement internationalization in the Georgian context.

The following are the findings to answer the research question No. 3 Does the road map exert significant effects toward internationalization?

Regression Analysis

Table 14: Correlation Table

Model	R	Interpretation	R Square	Interpretation	Adjusted R Square	Std. Error of the Estimate
Criterion: INTERNATIONALIZATION Predictor: ROADMAP	0.824	Strong Positive Correlation	0.679	67.9% of the variation in Internationalization may be attributed to the Roadmap	0.677	0.47572

Above Correlation Table shows Criterion: Internationalization and Predictor: Roadmap has strong positive correlation (R Square-67.9%) with an interpretation that the variation in Internationalization may be attributed to the Road Map.

Table 15: Regression Table

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Decision	Interpretation
DV: INTERNATIONALIZATION IV: ROADMAP	0.922	0.049	0.824	18.807	0.000	Reject Ho	Significant Effect Exists

Regression table shows that Dependent Variable Internationalization has significant effect in the Independent Variable Roadmap.

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Journal of Information Systems Engineering and Management
2023, 8(4)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

DECISION

Reject (Ho) Null hypothesis and Accept (Ha) Alternative hypothesis.

This study will be able to articulate the approaches state colleges and universities should take to meet the problems of internationalizing education through the use of the Dynamic Systems Theory and Transition Theory. The Roadmap is a path that leads from one place to another, or from one elevation to another, toward a particular destination, more particularly, the objective of an organization. Transition, change in terms of many nodes or routes pushed by every individual of an organization must be obvious and concrete in order for this to be possible.

As the road to internationalization is a long one and journey destined to stop and go in every station to check the vehicle as the destinations is going higher and higher in terms of strategies, higher education institution direction towards internationalization will be guided by combined theories of Transitions and Dynamic Systems. a well-planned journey toward an internationalization that is safe and prosperous.

CONCLUSION

It is encouraging that four of the assessed State Universities and Colleges are concentrating on internationalization as well as instruction, research, extension, and production, which are the top five functions of higher education institutions in the Philippines. Nonetheless, the four State Universities and Colleges stated that a clear plan of action for internationalization must be devised, considering, funding, faculty and student mobility, accreditation, quality assurance, world rankings, and funding. The findings also suggest that administrators at the four state universities and colleges should endeavor to improve faculty and student engagement in international conferences, research partnerships, collaborations, Linkages, and Networking.

The majority of the surveyed universities' programs are still level 2, there is little evidence of level 3 accreditation of its programs, and there is a very small percentage of level 4 accreditation, so it is also possible to conclude that the four universities and colleges under consideration have few Centers of Excellence and Centers of Development in their program offerings. It is unclear whether the HEIs assessed provide degree programs or distance, online, and/or e-learning courses (including MOOCs) to students in other nations.

The lack of budget for internationalization is a challenge. Most HEIs depend on tuition fees for salary, operations, facilities, learning materials and other requirements for higher education to function as expected. In most cases, Internationalization and the funding that it requires do not appear in the HEI budget. State Universities and Colleges are still struggling in terms of funding. funding is very limited for HEIs in the Philippines as Commissioner De Vera in 2019 said that “CHED will continue to increase funding for internationalization to assist HEIs link with universities abroad.” According to the findings, it was less clear that the institutions in the study had sources of money for carrying out international activities and less clear that they had enough internal generating resources to fund their institutions adequately.

In terms of international conferences, research collaborations and partnerships, linkages, and networking, the four State Universities and Colleges have expressed less clearly. Links are essential elements of creativity to get excellent results and production from collaboration. Institutions with a long history of collaboration across disciplines could readily get into joint ventures with businesses for the benefit of both parties. In order to attract the interest of foreign enterprises to associate with them, Filipino HEIs must in fact provide something unique and special from their programs and services, and this should be their main priority. Surprisingly, even attending an international conference had less of an impact. Research and information are shared through conference presentations, which also provide attendees the chance to actively participate in the activities they attend (Rowe 2018a, p. 718). As a result, conferences are now a crucial component of higher education institutions' (HEI) knowledge-sharing, professional development, and ongoing professional education practices.

With enhanced competition among education institutions regarding the internationalization process, administrators confront challenges in balancing competing priorities and coping with pressures. It is important to see how administrators define and carry out internationalization in the Georgian context because conceptualization and approaches vary from institution to institution and from country to country.

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Journal of Information Systems Engineering and Management
2023, 8(4)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

REFERENCES

[1] Roadmap Basics, (2022) https://www.productplan.com/learn/roadmap-basics/#:~:text=A%20roadmap%20is%20a%20strategic, the%20plan%20for%20getting%20there.

[2] CHED (2019). Commission on Higher Education. Higher Education Data and Indicators: AY 2009-2019. Retrieved October 10, 2019 from https://ched.gov.ph/wp-content/uploads/2019-HigherEducation-Indicators.pdf

[3] International Association of Universities. (2019). Retrieved from https://www.iauaiu.net/Internationalization?langen List of Accreditation Agencies used by fake colleges. Retrieved October 10, 2019.

[4] CMO 55 series 2016, Policy Framework and Strategy on the Internationalization of Philippines Higher Education. Commission on Higher Education, Republic of the Philippines, 2016.

[5] Creswell, John W., (2014). Research Design, Qualitative, Quantitative and Mixed Methods Approaches, SAGE Publications, Inc. 2455 Teller Road Thousand Oaks, California 91320

[6] International Education Association of Australia, (2015). Annual General Meeting 2022 Organisational members Partner organisations Board log-in AIEC Activator: Building a social licence.

[7] Vasquez-Rivera, Anna Maria, (2019) Level of Internationalization of State Universities and Colleges (SUCS) In CALABARZON, Philippines, International Journal of Advanced Research and Publications, ISSN: 2456-9992

[8] CHED (2012). Policy-standard to enhance quality assurance (QA) in Philippine Higher Education through an Outcomes-based and typology-based QA. Retrieved from http://www.ched.gov.ph/wp-content/uploads/2013/07/CMO-No.46-s2012.pdf

[9] Sanyal, Bikas C; Martin, Michaela. Quality assurance and the role of accreditation: an overview. "Report: Higher Education in the World 2007: Accreditation for Quality Assurance: What is at Stake?", 2007.

[10] Cruz, Cesi (2014) Who's Ready for ASEAN 2015? Firm Expectations and Preparations in the Philippines, Pacific Affairs, a division of the University of British Columbia, Pacific Affairs, Volume 89, Number 2, June 2016, pp. 259-285(27).

[11] De Vera, P. (2019). PH, US universities push for internationalization of higher education. Retrieved on October 15, 2019 from https://ched.gov.ph/blog/2019/06/03/ph-us-universities-push-for-internationalization-ofhigher-education/

[12] Ramirez, Veronica Esposo (2019), Constructing the Road Leading to Internationalization of Higher Education through Quality Assurance, Microsoft Word - RAMIREZ 2019 PACUCOA Constructing to road to QA.docx.

[13] Rowe, Nicholas E. (2018), The Economic Cost of Attending Educational Conferences, International Journal on Social and Education Sciences, Volume 1, Issue 1, 2019 ISSN: 2688-7061 (Online)

[14] Jibeen, Tahira & Khan, Masha Asad (2014). Internationalization of Higher Education: Potential Benefits and Costs, International Journal of Evaluation and Research in Education (IJERE) Vol.4, No.4, December2015, pp. 196~199 ISSN: 2252-8822

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