Research Paper

Entrepreneurship Practices of Higher Education Institutions in Region IV-A, Philippines

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Abstract

This study investigated the entrepreneurship practices (EPs) of higher education institutions (HEIs) in Region IV-A, Philippines. This descriptive-quantitative research used an adapted questionnaire which was based on the HEInnovate framework for entrepreneurial universities covering the eight dimensions. The data were gathered from 137 business educators who were affiliated with HEIs located in the five provinces of Region IV-A. Findings revealed that HEIs in the region are in their transformative stage of becoming entrepreneurial universities subject to improvements in five HEInnovate framework dimensions for entrepreneurial universities. Moreover, the study also proved that profile indicators utilized in the study are not factors for the variation of EPs among the subject-HEIs. The roadmap strategy proposed by the researchers is recommended to serve as a guide for the subject-HEIs in drawing up their plans and programs in their journey to become entrepreneurial universities.

Keywords *Entrepreneurship Practices, Entrepreneurial Universities, Heinnovate Framework, Higher Education Institutions, Philippines*

INTRODUCTION

Higher education institutions (HEIs) role being catalysts of social, technological, and economic change cannot be ignored. The quality of knowledge generated by HEIs and its contribution to the growth of the economy becomes inevitable for national and international competitiveness. Thus, HEIs around the world are transforming into entrepreneurial universities. That being said, HEIs are generally embracing the concept of entrepreneurial universities in their institutional management and practices. As defined by Guerrero and Urbano (2012), an entrepreneurial university has involvement in partnerships, business activities, and networks with different sectors (public, private, and government). An entrepreneurial university collaborates and interacts with these sectors with the aim of improving education, research, and other university activities. In this regard, an HEI should inculcate entrepreneurial thinking in its university governance and practices to effectively address the pressures and challenges of achieving its mission and to better align itself with the environment. According to Hannon (2013), the entrepreneurial university's role becomes relatively important in finding new ways of competing and succeeding in dynamic environments.

Several studies were conducted around the world to determine the best entrepreneurship practices (EPs) of HEIs in their transformation to becoming entrepreneurial universities. Among the notable studies are the following: Brazil (Almeida, 2008; Dalmarco et al., 2018), China (Liu, 2012), Iran (Salamzadeh et al., 2015), Malaysia (Ahmad et al., 2018; Yusof et al., 2010), Russia (Budyldina, 2018), Singapore (Wong et al., 2007), Spain (Fernandez-Nogueira et al., 2018; Guerrero

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et al., 2011), Thailand (Siriteerawasu & Niramitchainont, 2022), Ukraine (Kalenyuk & Dyachenko, 2016), United Arab Emirates (Bhayani, 2015) and United Kingdom (Guerrero et al., 2015). In these studies, it can be noted that a real entrepreneurial university has entrepreneurship processes nested in the university system and are absolutely embodied in its practices.

In the Philippine setting, while HEIs are also transforming into becoming entrepreneurial universities, there is still a dearth of studies in this area. Just recently, Biray (2022) conducted a study to determine the potential of an Aklan-based state university in the Philippines for entrepreneurial university transformation. To the best of the researchers' knowledge, there was no other study in the local setting other than the previously mentioned study. Assessing the readiness of HEIs to become entrepreneurial universities is timely and relevant considering the thrust on digitization and internationalization of business education in the country for eventual competitiveness in the global market. To support this concern, a study in this area is deemed necessary.

The study investigated the EPs of HEIs in Region IV-A, Philippines. This Philippine region has five provinces, including Cavite, Laguna, Batangas, Rizal, and Quezon, popularly known as the CALABARZON. HEIs categorized as universities or colleges in this region are either privately or publicly owned. Business education programs are generally being offered by these HEIs, thus a need to determine their readiness to become entrepreneurial universities through the evaluation of how they implement their EPs. The major objective of this study is to determine the EPs of HEIs in terms of the following eight dimensions: Leadership and Governance (L); Organizational Capacity: Funding, People, and Incentives (O); Entrepreneurial Teaching and Learning (E); Preparing and Supporting Entrepreneurs (P); Digital Transformation and Capability (D); Knowledge Exchange and Collaboration (K); The Internationalized Institution (I); and Measuring Impact (M).

LITERATURE REVIEW

HEInnovate Framework

The dimensions of EPs were in accordance with the entrepreneurial universities framework developed by European Commission – Organization for Economic Cooperation and Development (EC-OECD) through the HEInnovate. HEInnovate (n.d.) formulated a tool for all types of HEIs to assess the eight dimensions of EPs.

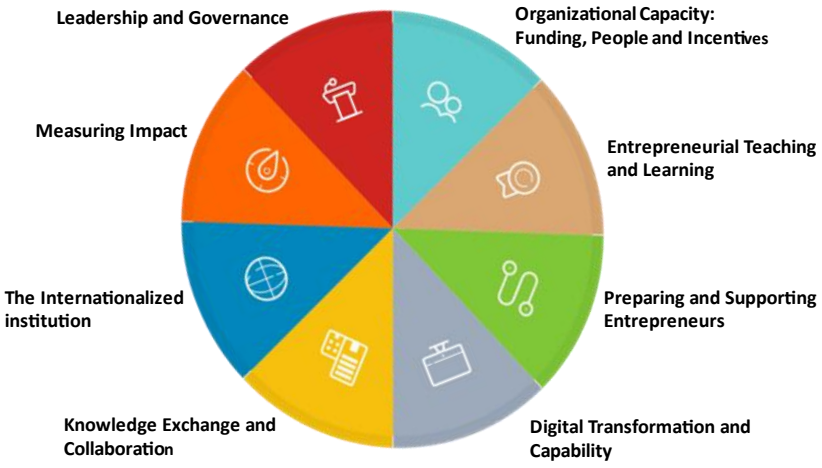

Figure 1. Eight Dimensions of EPs
(Source: www. Heinnovate.eu/en)

The importance and relevance of the eight dimensions of EP in the entrepreneurial university transformation cannot be ignored. The first key aspect of the HEInnovate framework, the L dimension, explores the factors enhancing positive leadership and governance for HEIs. According to Abdeldayem and Aldulaimi (2018), the application of good governance in HEIs leads to positive changes so that academic institutions can achieve objectives with efficiency and effectiveness. This is agreed by Abdelaziz (2022), who revealed that good governance positively reinforces the performance of HEI towards improving accountability, encouraging participatory processes, promoting inclusivity, and contributing to better resource management.

The O dimension being the second key aspect of the framework, is important in eliminating structural and procedural obstacles which may limit the capability of conducting entrepreneurial activities supportive of the strategic goals and directions of the HEIs. As emphasized by Tran (2022), innovation in HEI's financial management has a positive and significant relationship with innovation in the pursuit of its entrepreneurial agenda. With this claim, proper management of finances and other resources is necessary for how HEIs can achieve their vision and mission relative to their entrepreneurial agenda. Another important factor in the framework is the E dimension which highlights the tools for delivering education and training opportunities for entrepreneurship. As revealed by Williams Middleton et al. (2019), mentor-supported socialized learning that focuses on the learners is the key to solidifying learning towards entrepreneurial competence through know-how and access to resources.

P dimension, as the fourth key aspect of the HEInnovate framework, considers the support of HEIs in the transformation of potential entrepreneurs. The study of Lu et al. (2021) indicated that university entrepreneurship support positively impacts the entrepreneurial intentions of students. Therefore, support related to entrepreneurship forwarded by the HEIs is considered relevant to how students can be developed into real entrepreneurs. The fifth key aspect of the framework is the D dimension which relates to how digital technologies create an impact in supporting the entrepreneurial agenda of HEIs. As pointed out by Alenezi (2021), HEIs have been lagging behind other industries, and they need to transform digitally for them to remain relevant and competitive. Furthermore, Kamsker et al. (2020) emphasized the need for further development in technology-supported teaching and learning processes at HEIs which is seen as a challenge for digital transformation.

Participation of stakeholders and collaboration on entrepreneurial activities is the concern of the K dimension, the sixth key aspect of the framework. Elezi (2021) demonstrated the importance of knowledge management in facilitating the composition and development of strategic partnerships involving HEIs which will facilitate knowledge exchange and collaboration with industry and other sectors, particularly in providing support to prospective entrepreneurs, mentoring, and facilitating access to finances and business support services. I dimension, the seventh key aspect of the framework, integrates internationalization in the strategic processes of the HEI in the context of the global environment. As pointed out by Rosyidah et al. (2020), the internationalization directions of an HEI are also an effective promotion strategy for building international trust and attaining global recognition.

To complete the framework, the M dimension is the last key aspect that focuses on the impact of all the other dimensions on quality education being provided by the HEIs. This will show how successful an HEI is in developing individuals to become entrepreneurs. Cera et al. (2020) posited that individuals with formal entrepreneurial education reflected a higher intention to start a business.

Entrepreneurship Practices of HEIs

HEIs are expected to provide an environment that will promote entrepreneurship among

their students. This mission is not always accomplished. In the study of Agastya (2022), he found out that the subject institution failed to equip the students with relevant knowledge and its application to the management of a business enterprise. HEIs are also instrumental in how the personality traits of the students could be further enhanced in order to strengthen their entrepreneurial intention. As indicated by Sze et al. (2021), self-efficacy, locus of control, and tolerance for risk are personality traits that are significant predictors of entrepreneurial intention. Moreover, Malinao (2021) in his study considered positive image and motives to have an impact on the entrepreneurial purpose, which is important for entrepreneurial success. These are some, among other things, that should be considered by the HEIs so the students can be motivated to successfully cross their entrepreneurial paths.

The role of HEIs in the development of future entrepreneurs cannot be ignored, being training grounds for honing their students' knowledge, skills, and attitudes and nurturing the seed of entrepreneurship. While the creation of entrepreneurs is being considered by HEIs, particularly business schools, Nazira and Kartika (2021) proposed that synergistic cooperation from a quadruple helix consisting of universities, entrepreneurial societies, government, and industry are encouraged to make this a reality.

Several studies have identified predictors of HEI's entrepreneurial engagement and activities (Abreu et al., 2016; Klofsten et al., 2019). According to de la Torre et al. (2018), strategic entrepreneurial prioritization of HEIs is associated with available resources and their activity profiles. Therefore, the HEI's geographical location and type/ classification are presumed factors for the differences between EPs. Likewise, the views of administrators and teaching staff on how their HEIs practice their entrepreneurial activities may also be different. Thus, in consideration of the objective of the study, the authors developed the following hypotheses:

Ho1: There is no significant difference in the EPs relative to the geographical location of HEIs (provinces where HEIs are located).
Ho2: There is no significant difference in the EPs relative to the classification/ type of HEI.
Ho3: There is no significant difference in the EPs of HEIs relative to the perceptions of respondents (administrators vs. teaching staff).

The authors also proposed a strategy roadmap for Region IV-A HEIs in their transformation to becoming entrepreneurial universities. This is in accordance with the weaknesses found in the implementation of their EPs.

RESEARCH METHOD

The study employed a descriptive-quantitative research design where business educators in Region IV-A, Philippines, served as respondents. There were 137 business educators from the Council of Deans and Educators of Business in Region IV-A (CODEB IV-A) Information Hub Group, a Facebook Messenger group, who selflessly answered the online survey questionnaire on EPs of HEIs in Region IV-A. The Google form was posted in the group chat for one month, from December 16, 2022, to January 15, 2023. The respondent-business educators who are members of the Council are generally participating in the entrepreneurial activities of their respective HEIs. These HEIs are located in the five provinces of Region IV-A. The CODEB IV-A has more or less 250 members, whereas the active members of the Council are members of the Information Hub Group.

The questionnaire was adapted from the study of Tabib (2021). Said questionnaire was based on the Entrepreneurial Universities Framework developed by the European Commission – Organization for Economic Cooperation and Development (EC-OECD, 2012) with slight modifications to fit the context of the Palestinian HEIs. Because of some similarities between

Palestinian HEIs and Philippine HEIs, the authors considered the same questionnaire to fit the purpose of the study. The questionnaire on EPs, composed of 33 items, was designed to gather information on the respondents' perspectives on eight dimensions. The items in the eight dimensions were measured with a five-point Likert scale: 1.00–1.49 = Not at all; 1.50 – 2.49 = To a slight extent; 2.50 – 3.49 = To a moderate extent; 3.50 – 4.49 = To a great extent; and 4.50 – 5.00 = To a very great extent. The questionnaire underwent validity and reliability testing, with the highest Cronbach's alpha value of 0.941 obtained for the Q dimension while the lowest is 0.806 for the O dimension (Table 1).

Table 1. Reliability Statistics

Dimensions of EPs	Cronbach's Alpha	No. of Items
1. L Dimension	0.884	3
2. O Dimension	0.806	3
3. E Dimension	0.893	4
4. P Dimension	0.909	6
5. D Dimension	0.893	4
6. K Dimension	0.909	3
7. I Dimension	0.833	3
8. M Dimension	0.941	7

Source: Tabib (2021)

A confidentiality note was indicated in the survey questionnaire to assure the respondents that the information provided was used only for the purpose of the study. The data gathered from the respondents were analyzed using frequency, percentage, weighted mean, and analysis of variance (ANOVA).

FINDINGS AND DISCUSSION

Profile of HEIs and Study Respondents

The 137 business educators who served as respondents to this study were affiliated with HEIs in Region IV-A, Philippines. Table 2 presents the profile of HEIs and the study respondents. The profile of HEIs revealed that the majority of the HEIs are located in the Province of Quezon, privately owned, and classified as a college. On the other hand, the majority of the study respondents are teaching staff who have participated in training, seminars, conferences, and workshops related to entrepreneurship and have provided lectures to business students on entrepreneurship courses and allied disciplines.

Table 2. Profile of HEIs and Study Respondents

Indicator	Frequency	Percentage
A. Profile of HEIs		
Province of HEI Location		
Cavite	15	10.90
Laguna	18	13.10
Batangas	23	16.80
Rizal	18	13.10
Quezon	63	46.00
Total	137	100.00
Classification of HEI		
Private HEI, University Status	15	10.90
Private HEI, College Status	65	47.40
Public HEI, University Status	44	32.10

Public HEI, College Status	13	9.50
Total	137	100.00
B. Profile of Survey Respondents		
Job Classification of Respondents		
Administrator (Deans, Directors, VPs, President)	45	32.80
Teaching Staff (Program Heads, Faculty Members)	92	67.20
Total	137	100.00
*Entrepreneurship Activities Of Respondents**		
Trainings/ Seminars/ Workshops/ Conferences	89	64.96
Lecture	89	64.96
Business Development Project	33	24.09
Mentoring/ Coaching/ Small Business Consulting	58	42.36
Community Extension	66	48.18
Small Business Creating/ Business Start-up	40	29.20
Research	63	45.99
International Benchmarking	1	0.73
None	1	0.73

* Multiple responses were allowed.

EPs of HEIs

The EPs of HEIs in Region IV-A, Philippines, were assessed along the eight dimensions based on the HEInnovate framework.

L Dimension. HEIs' transformational leadership, as well as good corporate governance, are necessary for entrepreneurial development and the creation of innovative culture in the organization. Table 3 shows that all indicators of the L dimension are being implemented to a great extent. This means that leadership and governance is an important factors in strengthening the entrepreneurial agenda of HEIs. According to Novela et al. (2021), university governance, which includes the elements like relevant strategic planning, strong leadership, appropriate organizational culture, and collective entrepreneurial action, is a driver power that propels other sub-elements of the entrepreneurial ecosystem.

Table 3. L Dimension of EPs

No.	Statement	Weighted Mean	Std. Deviation	Descriptive Rating
L1	Entrepreneurship is a major part of HEI's strategy	3.6642	.94151	To a great extent
L2	The HEI pays great attention to implementing the entrepreneurial agenda	3.5985	.88666	To a great extent
L3	The HEI encourages and supports faculties and units to act entrepreneurially	3.5693	.97615	To a great extent
Average Weighted Mean		3.6107		To a great extent

O Dimension. Organizational capacity refers to the ability of HEI to deliver its entrepreneurial strategy. Thus, key resources such as funding, people, and attractive incentive systems should be considered in sustaining and growing the capacity of HEI towards entrepreneurship. Table 4 shows that indicators O1 and O3 are practiced to a moderate extent, while indicator O2 is practiced to a great extent. The finding revealed that HEIs are open to the engagement and recruitment of individuals with entrepreneurial attitudes, behavior, and experience. This means that HEIs have an entrepreneurial culture that involves individuals with strong entrepreneurial backgrounds and experiences who are capable of supporting their

entrepreneurial agenda. However, the data indicate that HEIs need to enhance their access to sustainable funding and other investment sources. This is the same contention of Tooshmali et al. (2020) in their conceptualization of an entrepreneurial university in Iran where investment sourcing is of prime importance.

It can also be noted that HEIs should also improve on providing attractive incentives and rewards to their employees who are actively supporting the institutional entrepreneurial agenda since this can reinforce their commitment to innovation and excellence. This jibes with the finding of Voolaid et al. (2019) for the University of Technology in Estonia, who recommended improvement in incentives and rewards for employees who are supporting the HEI's entrepreneurial activities and development.

Table 4. O Dimension of EPs

No.	Statement	Weighted Mean	Std. Deviation	Descriptive Rating
O1	Entrepreneurial objectives are supported by a wide range of sustainable funding and investment sources	3.2482	.99100	To a moderate extent
O2	The HEI is open to engaging and recruiting individuals with entrepreneurial attitudes, behavior, and experience.	3.5182	.96331	To a great extent
O3	Incentives and rewards are given to staff who actively support the entrepreneurial agenda	3.1168	1.09185	To a moderate extent
Average Weighted Mean		3.2944		To a moderate extent

E Dimension. The E dimension of EPs refers to creative teaching methods by faculty members in order to find meaningful ways and means of stimulating the entrepreneurial mindsets and skills of students. Table 5 shows that all indicators are practiced to a great extent. This means that the faculty members of HEIs have entrepreneurial experiences and have acquired the necessary skills, attitudes, and competencies needed for the development of entrepreneurial mindsets and skills of their students. According to Febriyantoro (2019), HEIs play a crucial role in shaping the entrepreneurial mindset of students through the application of relevant curriculum and entrepreneurship-based learning. He further noted that courses on business creation and management utilizing both theoretical and practical approaches could enhance students' motivation and interest to become real entrepreneurs.

Table 5. E Dimension of EPs

No.	Statement	Weighted Mean	Std. Deviation	Descriptive Rating
E1	The HEI provides diverse formal learning opportunities to develop entrepreneurial mindsets and skills.	3.6131	.90137	To a great extent
E2	The HEI provides diverse informal learning opportunities and experiences to stimulate the development of entrepreneurial mindsets and skills.	3.5036	.96348	To a great extent
E3	The HEI validates entrepreneurial learning outcomes, which drive the	3.5182	.9633	To a great extent

	design and execution of entrepreneurial education.			
E4	The HEI co-designs and delivers the curriculum to external stakeholders	3.5547	.94651	To a great extent
Average Weighted Mean		3.5474		To a great extent

P Dimension. This dimension indicates how HEIs can benefit students, graduates, and employees in how they can engage in business creation. Table 6 shows that all indicators are practiced to a great extent except for indicators P5 and P6, which are practiced to a moderate extent only. The finding indicates that HEIs are successful in encouraging their students, graduates, and employees to set up a new business from idea generation and equipping them with the necessary skills and competencies of an entrepreneur. However, HEIs should improve on providing them assistance in looking for external fund sources to support the success of new ventures being neophytes in the field of entrepreneurship. According to Voolaid et al. (2019), the development of close cooperation between the university and the business sector as a support system can facilitate access to private financing for students and employees who are engaging in entrepreneurship.

The finding also reveals that HEIs should consider that business incubators are also established, or access is being coordinated by them to help and support new entrepreneurs for physical infrastructure and/or support in the form of networking, mentoring, coaching, training, financing, and other similar activities needed to properly manage an enterprise. This jibes with the study of Kascak and Pilkova (2014) that HEI can set up business incubators as a support system for newly created businesses. They further noted that these business incubators could provide their requirements for basic services (legal, accounting, financial management, etc.) and the possibility of creating significant business relationships. Therefore, these business incubators will primarily aim to support anyone who intends to start up a new business enterprise.

Table 6. P Dimension of EPs

No.	Statement	Weighted Mean	Std. Deviation	Descriptive Rating
P1	The HEI increases awareness of the value of entrepreneurship and stimulates the entrepreneurial intentions of students, graduates, and staff to start up a business or venture	3.6861	.94520	To a great extent
P2	The HEI supports the students, graduates, and staff to move from idea generation to business creation	3.5620	1.04221	To a great extent
P3	Training is offered to assist students, graduates, and staff in starting, running, and growing a business	3.5255	.99321	To a great extent
P4	Mentoring and other forms of personal development are offered by experienced individuals from the academe or industry	3.6350	.99170	To a great extent
P5	The HEI facilitates access to financing for its entrepreneurs	3.0803	1.06452	To a moderate extent
P6	The HEI offers or facilitates access to business incubation	3.1606	1.07261	To a moderate extent
Average Weighted Mean		3.4416		To a moderate extent

D Dimension. Digital technologies are enablers of digital transformation within HEIs. Table 7 shows how the HEIs' digital capability supports innovation and entrepreneurship. It can be noted

that all indicators for this dimension are practiced to a moderate extent only. This indicates that HEIs' digital capability needs improvement to fully integrate, optimize and transform digital technologies to support innovation and entrepreneurship within HEIs.

The need to improve in this dimension is very important, considering how HEIs have been receiving enough disruptions lately due to the vast amount of advancements in technology. According to Wildan Zulfikar et al. (2018), digital transformation is a must, and HEIs should adjust to the rapid technological changes and the dynamic demands of the environment if they want to stay relevant and competitive. In the same vein, according to Nguyen (2018), HEIs are mandated with the use of new technologies for appropriate and relevant digital transformation, which will aid them in better and faster decision-making. However, according to him, the real challenge is in the implementation of these digital transformation strategies to fully support the success of academic entrepreneurship.

Table 7. D Dimension of EPs

No.	Statement	Weighted Mean	Std. Deviation	Descriptive Rating
D1	The HEI fosters a digital culture as a means of innovation and entrepreneurship	3.4015	1.01793	To a moderate extent
D2	The HEI is committed to digital teaching, learning, and assessment practices	3.7299	.97395	To a great extent
D3	Open science and innovation practices are widespread across the HEI	3.4234	.98311	To a moderate extent
D4	The HEI has a dynamic digital presence supporting all its activities	3.4161	1.00471	To a moderate extent
	Average Weighted Mean	3.4927		To a moderate extent

K Dimension. The K dimension is a major driver of innovation and creativity. This can also promote advancement in instruction, research, and extension activities of the HEIs. Table 8 shows that indicators K1 and K3 are practiced to a great extent while indicator K2 is practiced to a moderate extent only. The findings prove that even if HEIs have active partnerships with different stakeholders and have provided their students and employees with opportunities to partake in innovative activities, they still need to improve their relationships with knowledge-intensive networks like business incubators, industrial parks, and other initiatives in order to allow the efficient and effective flows of knowledge and ideas for successful entrepreneurship development.

The findings differ with Chinese universities, which have been found to be committed to forming intra- and inter-regional networks for knowledge and information-sharing purposes. Ye et al. (2019) found in their study that there are frequent cross-university fellowships, group visits of faculty teams, and other activities that allow for active dynamics among Chinese universities.

Table 8. K Dimension of EPs

No.	Statement	Weighted Mean	Std. Deviation	Descriptive Rating
K1	The HEI demonstrates active involvement in partnerships and relationships with a wide range of stakeholders	3.5766	.96804	To a great extent
K2	The HEI has strong links with incubators, science parks, and other external initiatives	3.3723	1.03616	To a moderate extent
K3	The HEI provides opportunities for staff and students to take part in innovative	3.5109	.94025	To a great extent

activities with business/ the external environment		
Average Weighted Mean	3.4866	To a moderate extent

I Dimension. The I dimension of EPs integrates the global dimension in the design and delivery of HEI functions in instruction, research, community extension, and knowledge exchange. Table 9 shows that all the indicators of the I dimension are practiced to a moderate extent only. The findings indicate that HEIs should support the international mobility of employees and students as this can bring new educational and research ideas and can create intercultural opportunities for the participants. The HEIs should also improve their international networks to match their entrepreneurial agenda. According to Krasulia et al. (2022), in addition to the tangible economic benefits which can be derived from internationalization, the quality of education will also improve when HEI invests in it. It is expected that with the internationalization of HEIs, the multicultural environment will mobilize lecturers to improve their teaching methods and will give students unique opportunities to connect internationally and learn from each other.

Table 9. I Dimension of EPs

No.	Statement	Weighted Mean	Std. Deviation	Descriptive Rating
I1	The HEI explicitly supports the international mobility of its staff and students	3.3431	1.08084	To a moderate extent
I2	The HEI seeks and attracts international and entrepreneurial staff	3.1022	1.09333	To a moderate extent
I3	The HEI develops extensive links with international research networks and innovation clusters	3.3431	1.12091	To a moderate extent
Average Weighted Mean		3.2628		To a moderate extent

M Dimension. HEIs need to understand how their entrepreneurial initiatives have impacted the quality of education. Table 10 shows the impact of implementing entrepreneurial initiatives. As can be gleaned from the table, all seven indicators under this dimension are practiced to a great extent. This means that the implementation of EPs benefits the HEIs in improving the teaching methods and learning outcomes, entrepreneurial mindsets and skills of students and graduates, innovation within HEI, and entrepreneurial environment and ecosystem. The final outcome of the successful implementation of the EPs benefits the students in becoming future entrepreneurs themselves. This is in support of the findings of Mónico et al. (2021), who pointed out that EPs of HEIs have indirect effects on the entrepreneurial motivations of students to become entrepreneurs.

Table 10. M Dimension of EPs

No.	Statement	Weighted Mean	Std. Deviation	Descriptive Rating
M1	Implementing entrepreneurial initiatives contributed to changing teaching methods and linking them to reality more	3.6204	.92459	To a great extent
M2	Implementing entrepreneurial initiatives contributed to changing the instructor's methods and processes of evaluation of the students by using the modern methods	3.6204	.97114	To a great extent
M3	Implementing initiatives increased students' entrepreneurial skills such as the	3.7737	.89107	To a great extent

	ability to entrepreneurial thinking, take risks, work in a team, and creative thinking			
M4	Implementing entrepreneurial initiatives that helped discover talented students	3.8175	.86788	To a great extent
M5	Implementing entrepreneurial initiatives increased the desire of students to implement entrepreneurial work	3.7810	.90518	To a great extent
M6	Implementing entrepreneurial initiatives contributed to the development of innovation and entrepreneurship courses	3.7153	.95447	To a great extent
M7	Implementing entrepreneurial initiatives contributed to providing the necessary resources and a suitable environment for entrepreneurial work	3.6496	.98213	To a great extent
Average Weighted Mean		3.7111		To a great extent

In summary, the O, P, D, K, and I dimensions of EPs of HEIs need to be improved relative to their journey of becoming entrepreneurial universities (Table 11). The present study also revealed a moderate level of EPs among Region IV-A HEIs in light of the HEInnovate framework. This finding supports the previous studies (Alghamdi, 2020; Sultan, 2017), which also found EPs being implemented at a moderate level in different universities. The reason for the moderate level of practice is more likely due to limited partnerships and collaborations and lack of funds to support the entrepreneurial agenda, among others.

Table 11. EPs of HEIs – Summary

	Dimensions	Average Weighted Mean	Descriptive Rating
1	Leadership and Governance (L Dimension)	3.6107	To a great extent
2	Organizational Capacity: Funding, People and Incentives (O Dimension)	3.2944	To a moderate extent
3	Entrepreneurial Teaching and Learning (E Dimension)	3.5474	To a great extent
4	Preparing and Supporting Entrepreneurs (P Dimension)	3.4416	To a moderate extent
5	Digital Transformation and Capability (D Dimension)	3.4927	To a moderate extent
6	Knowledge Exchange and Collaboration (K Dimension)	3.4866	To a moderate extent
7	The Internationalized Institution (I Dimension)	3.2628	To a moderate extent
8	Measuring Impact (M Dimension)	3.7111	To a great extent
	Over-all Mean	3.4809	To a moderate extent

Significant Differences between EPs and Profile Indicators

Table 12 reveals that there is no significant difference in the EPs of HEIs along the eight dimensions when HEIs are grouped according to their geographical location. This means that EPs do not vary among HEIs located in the five provinces composing Region IV-A, Philippines. The null hypothesis, there is no significant difference in the EPs relative to the geographical location of HEIs, is therefore accepted.

Table 12. Significant Differences on the EPs when Responses are Grouped According to the Province of HEI Location

Dimensions of EPs	p-value	Decision (Alpha = 0.5)	Conclusion
L Dimension	.515	Accept Ho	NS
O Dimension	.834	Accept Ho	NS
E Dimension	.878	Accept Ho	NS
P Dimension	.274	Accept Ho	NS
D Dimension	.805	Accept Ho	NS
K Dimension	.551	Accept Ho	NS
I Dimension	.833	Accept Ho	NS
M Dimension	.828	Accept Ho	NS

NS = Not Significant

Table 13 shows that there is no significant difference in the EPs when the HEIs are grouped according to their classification/ type. This indicates that whether HEI is private or public-owned or classified as a university or a college, their EPs along the eight dimensions do not differ. The null hypothesis, there is no significant difference in the EPs relative to the classification/ type of HEI, is therefore accepted.

Table 13. Significant Differences in the EPs when Responses Are Grouped According to the Classification/ Type of HEI

Dimensions of EPs	p-value	Decision (Alpha = 0.5)	Conclusion
L Dimension	.770	Accept Ho	NS
O Dimension	.325	Accept Ho	NS
E Dimension	.484	Reject Ho	NS
P Dimension	.057	Accept Ho	NS
D Dimension	.079	Accept Ho	NS
K Dimension	.111	Accept Ho	NS
I Dimension	.344	Accept Ho	NS
M Dimension	.271	Accept Ho	NS

NS = Not Significant

Table 14 presents that there is no significant difference in the EPs of HEIs as perceived by respondents when they are grouped according to their job classification. This proves that whether the business educator is an administrator or a teaching staff, their perceptions on the EPs of the HEIs along the eight dimensions are the same. Therefore, the null hypothesis of no significant difference in the EPs of HEIs relative to the perceptions of respondents (administrators vs. teaching staff) is accepted.

Table 14. Significant Differences in the EPs when Responses Are Grouped According to the Job Classification of Respondents

Dimensions of EPs	p-value	Decision (Alpha = 0.5)	Conclusion
L Dimension	.325	Accept Ho	NS
O Dimension	.484	Accept Ho	NS
E Dimension	.057	Accept Ho	NS
P Dimension	.079	Accept Ho	NS

D Dimension	.111	Accept Ho	NS
K Dimension	.344	Accept Ho	NS
I Dimension	.271	Accept Ho	NS
M Dimension	.092	Accept Ho	NS

NS = Not Significant

Proposed Strategy Roadmap for Region IV-A HEIs Towards Transformation into Entrepreneurial Universities

Parallel to the findings of the study, the researchers propose a strategic roadmap on how HEIs in Region IV-A, Philippines, can transform into entrepreneurial universities. This strategy roadmap can be used as a guide by HEIs in drawing up their plans and programs to improve their entrepreneurship practices. Table 15 shows the proposed strategy roadmap for HEIs based on the weaknesses of their EPs along the eight dimensions of HEInnovate's Entrepreneurial University Framework.

Table 15. Proposed Strategy Roadmap

Dimensions of EPs	Weaknesses	Proposed Strategies
L Dimension		Revisit the Philosophy, Vision, Mission, Goals, and Objectives and align the strategic plan with the HEInnovate framework for entrepreneurial university
O Dimension	O1; O3	Formulate and implement policies and guidelines on fund sourcing and provision of incentives/ rewards to promoters of entrepreneurship
E Dimension		Strengthen the learning outcomes by continuously adapting innovative and modern teaching methods
P Dimension	P5; P6	Prepare and implement policies and guidelines on fund assistance to student - entrepreneurs and staff who intend to start an entrepreneurial venture; Explore modalities of setting up and/or facilitating access to business incubation
D Dimension	D1; D3; D4	Introduce and implement policies and guidelines on digital transformation to support innovation and entrepreneurship
K Dimension	K2	Set up and implement policies and guidelines on partnership and collaborations with the business sector and other stakeholders on business incubation, research, and other external initiatives

I Dimension	I1; I2; I3	Draw up and implement policies and guidelines on the internationalization of staff and students in the areas of instruction, research, extension, and other academic activities
M Dimension		Draft and implement policies and guidelines on impact assessments of entrepreneurial initiatives

CONCLUSIONS

HEIs in Region IV-A, Philippines, are in their transformative stage of becoming entrepreneurial universities subject to improvements in the O, P, D, K, and I dimensions of the HEInnovate framework. Likewise, this paper also concluded that the profile indicators utilized in the study are not factors for the variation of EPs among the subject-HEIs. The researchers recommend that HEIs in Region IV-A may utilize the proposed roadmap strategy in their transformation into entrepreneurial universities.

LIMITATION & FURTHER RESEARCH

Due to the limited samples used in the study, the study results can be further validated if more HEIs will be participating in the study of the same nature. It is also suggested that future research should include a more diverse representation of all HEIs in the different regions of the country in order to widen its scope. Lastly, in order to reduce self-report bias, there are some methods other than surveys that can be employed to collect data, such as interviews, focus group discussions, or observations.

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