MALAYSIAN ONLINE JOURNAL OF EDUCATIONAL MANAGEMENT (MOJEM)

JANUARY 2025, VOLUME 13, ISSUE 1, 56-80
E-ISSN NO: 2289 – 4489

QUALITY MANAGEMENT PRACTICES WITHIN HIGHER EDUCATION INSTITUTIONS (HEIs) IN THE PROVINCE OF ORIENTAL MINDORO

*Lea E. Miciano[1], Cherrypyn B. Barbacena[2], Ronnel C. Miciano[1]

[1]
Mindoro State University,
Philippines

[2]
Technological University of the Philippines-Manila,
Philippines

Corresponding Author:
Mindoro State University,
Philippines
Email:
evangelista.lea @gmail.com

ABSTRACT

This study identified the quality management practices within HEIs concerning instruction and curriculum, research, extension and linkages, and management of resources of middle-level managers in the province of Oriental Mindoro. This study is descriptive research utilizing a mixed-method research design through the Delphi Technique with three stages: (1) Delphi Stage 1 (Content Analysis), (2) Delphi Stage 2 (Consensus Building), and (3) Delphi Stage 3 (Final Stage: Reconsideration). The population for the study includes 12 middle-level managers or experts in key result areas and quality assurance, which were drawn through a purposive sampling technique. Results showed that continuous improvement through regular curriculum assessments and revisions is a priority for HEIs to maintain compliance with industry requirements and improve the quality of instruction. They strongly emphasize faculty members' continuous professional development and encourage research by giving money for conference attendance, team projects, and research supplies. HEIs support transdisciplinary research with outside partners and promote innovation. Extension tactics use relationships with government agencies, businesses, educational institutions and community development projects to address social needs. Transparency, equitable financial distribution, improving infrastructure, and advancing sustainability are the main goals of resource management. A quality management framework may be developed for HEIs that includes strategies to align programs, standards, and processes to ensure consistent and effective quality management practices.

Keywords: **Quality Management Practices, Higher Education Institutions (HEIs), Delphi Technique**

INTRODUCTION

Higher Education Institutions (HEIs) and accreditation agency experts are both deeply interested in quality and quality assurance in higher education. This interest stems not only from the private sector but also from the academic community and other outside groups. Globalization and the emergence of a knowledge-based economy necessitate high-quality graduates who can support the economy and help it grow.

The 21st century has given rise to a new concept of quality. Rosen (2019) contends that R&D should be prioritized over compliance. Administrators in higher education should make an effort to harmonize the entire system so that departments, divisions, faculties, chairs, and university and faculty administrations can all cooperate towards accomplishing organizational goals and assuring educational quality in a harmonious work environment. This is the perspective of the higher education sector. Huang and Xu (2020) discussed that the HEIs sector has undergone irreversible change per the new public management, which forces HEIs to adopt a more "business-like" focus on performance management and responsibility, which is frequently based on mandated quantitative performance targets.

In the Philippines, the Commission on Higher Education (CHED) addresses the issue and concern of delivering quality education. These factors will aid in producing more productive and globally competitive graduates. As a result of the CHED's mandate, higher education institutions have a greater need than ever for skilled and competent administrators. The landscape of higher education is shifting, and institutions of higher education must adapt. It introduces new threats and opens up new opportunities. As the future is unclear, managers of colleges and universities cannot allow their institutions to go off track. Management expertise is increasingly required (Angehrn & Maxwell, 2018). HEI undertook accreditation of reputable organizations to its programs, particularly the Accrediting Agencies of Chartered Colleges and Universities of the Philippines (AACCUP) and the Association of Local Colleges and Universities Commission on Accreditation (ALCUCOA). This guarantees that curricula, instructor credentials, and student learning objectives all adhere to quality standards that have been set. A strong research environment is an indicator of good quality management. Heng (2024) revealed that establishing and executing institutional and national research policies that precisely define the prerequisites for research and publishing is a crucial tactic. HEI showcases its contributions to knowledge advancement, research endeavors, and publications in reputable journals. The influence of the HEI is further reinforced by sustainable extension activities that go well beyond the classroom boundaries and meet community needs. Further, a clear performance management system shows a dedication to ongoing development. HEI can demonstrate how it uses metrics to assess and improve the quality of its research, extension, teaching, and administrative procedures. This system makes sure that decision-making is data-driven and is centered on attaining excellence in all facets of the organization.

Moreover, due to the changes in the modern world, people started to value the significance of quality management. Northeastern University Graduate Programs Staff (2019) claimed that secured management is in demand in current society, which is why it is important to hone the leadership competencies of individuals, giving them a competitive edge. Given its current issues, higher education administration must be reorganized. Good academic leadership is the most valuable asset an institution can possess in a competitive and resource-hungry higher education system. Additionally, a good leader may make academic work more enjoyable and productive for all students. In the absence of managerial abilities, a comprehensive understanding of the institution's requirements and objectives, and a selfless dedication to achieving these objectives, a facility may be unprotected and ineffective.

Accreditation agencies like AACCUP and ALCUCOA have a framework for compliance, and they often emphasize adherence to predefined standards over fostering innovation and holistic institutional growth. However, this compliance-focused approach limits HEIs' ability to adapt to rapidly changing educational demands and the global economy. Additionally, the increasing adoption of performance metrics driven by new public management principles tends to focus heavily on quantitative outcomes, sometimes at the expense of qualitative improvements. This results

in an overemphasis on meeting targets rather than fostering meaningful improvements in curriculum design, research impact, or community engagement. Another deficiency lies in developing leadership competencies among middle-level managers in HEIs. HEIs invest in technical and operational training, yet there is a significant gap in leadership development, particularly in establishing visionary and adaptive management practices. This gap leaves institutions vulnerable to inefficiencies and a lack of strategic direction, especially during periods of rapid change or crisis. Furthermore, research environments within HEIs often face challenges such as inadequate funding, fragmented policies, and insufficient mechanisms for collaboration and publication in reputable journals. These challenges hinder the ability of HEIs to contribute effectively to knowledge advancement and societal needs.

Hence, this study addresses deficiencies in existing quality management frameworks by focusing on key practices in instruction, curriculum, research, extension, linkages, and resource management. It highlights the need for a more cohesive approach to institutional operations, particularly aligning these areas for improved overall performance. It is in this view that the researcher undertook this study to identify the quality management practices within HEIs concerning instruction and curriculum, research, extension and linkages, and management of resources of middle-level managers in the province of Oriental Mindoro. The research seeks to propose systems that prioritize coordination over isolated compliance, fostering a collaborative environment within HEIs. Leadership development among middle-level managers is a core aspect of the study. Also, this study examines current research practices to identify policies and strategies that can better align with institutional objectives. It highlights the need for improved funding mechanisms and support systems that strengthen the research capacity of HEIs. Focusing on publication and contribution to academic knowledge is a marker of institutional quality. Through evaluating performance management systems, the study explores how metrics can move beyond simple accountability. It emphasizes their potential to drive measurable improvements across teaching, research, and administrative processes. This focus ensures that decisions are well-informed and geared toward achieving excellence in various institutional areas. Finally, the research acknowledges the shifting landscape of higher education and the challenges posed by internal inefficiencies and external pressures.

METHODOLOGY

This study is descriptive research utilizing a mixed-method research design through Delphi Technique. A qualitative-quantitative data analysis utilizing the Delphi model technique to solicit the consensus of the experts in identifying quality management competencies was used. The Delphi Technique is particularly well-suited for identifying quality management (QM) practices within HEIs due to its structured and iterative approach, which allows for the systematic gathering of expert opinions. This method is designed to reach a consensus on complex issues, making it ideal for exploring multifaceted topics such as QM practices in higher education. By engaging a panel of experts with diverse perspectives and expertise, the Delphi Technique ensures a comprehensive analysis of the critical competencies required in managing HEIs. Its combination of qualitative and quantitative phases provides depth and statistical reliability, making the findings robust and actionable. Additionally, the method allows for anonymity among participants, reducing the potential influence of dominant opinions and promoting more objective responses.

The qualitative phase constituted in-depth data analysis through Open Coding, Selective Coding, and Axial Coding in the Delphi Round 1 survey results. In the quantitative phase, the focus was on treating the quantifiable data from the Delphi round 2 results, which employed the Mean, Standard Deviation, Coefficient of Variation, and Interquartile Range. The Delphi round 3 results, on the other hand, cannot be called quantifiable because the average proportion of majority opinion (APMO) is characterized by a dichotomous response (agree or disagree) and is only used to explain the modal occurrence of the participants' majority opinion. The population for the study includes 12 middle-level managers or experts in the fields of key result areas and quality assurance. The selection of experts was carefully conducted to ensure their relevance and credibility in the study. Using purposive sampling, the study identified 12 middle-level managers or experts who possess significant practical experience in managing the Key Result Areas (KRAs) in HEIs. These individuals were chosen based on several criteria: their demonstrated expertise and achievements in management, academic qualifications, and active engagement in quality assurance and higher

education processes. Their professional backgrounds include hands-on experience in institutional leadership, strategic planning, and operational management, which are critical for identifying effective QM practices. Among the qualifications of the experts who were asked to answer the survey questionnaire included: (1) practical experience in middle-level management in the Key Result Areas (KRAs), (2) experience and expertise in management, (3) performance and achievements, (4) academic background and (5) have interest in the study. The study leveraged a well-rounded panel capable of offering insights grounded in theory and practice by selecting experts with proven track records and a vested interest in improving HEI management.

The experts are all affiliated with public Higher Education Institutions in Oriental Mindoro.

Table 1. *Distribution of Participants by Higher Education Institutions (HEIs)*

	Name of HEI's	No. of Respondents
	First District	
1.	Mindoro State University-Main Campus (Victoria)	2
		2
2.	City College of Calapan – Calapan City	2
3.	Baco Community College-Baco	
	Second District	
4.	Pola Community College – Pola	2
5.	Mindoro State University-Bongabong Campus (Labasan, Bongabong)	2
6.	Simeon Suan Vocational Technical College-Bansud	2
	Total	**12**

The study employed validated survey questionnaires. The first questionnaire aimed to solicit identified quality management practices, while the second focused on refining these practices based on the first stage's feedback. The third questionnaire sought to confirm a final consensus on the identified competencies.

Content validation was conducted by expert validators to ensure the instruments' validity, including professionals with significant experience in quality management and administration. The survey questions underwent face/construct, content, and language validation to ensure their relevance and accuracy in measuring the intended constructs. Reliability was ensured by applying the Delphi method's consensus-building process, which included iterative rounds of surveys and a systematic approach to analyzing data using interquartile range (IQR) and coefficient of variation (CV) to assess the consistency and reliability of the responses.

Data collection occurred in three Delphi stages. Stage 1 involved administering the first survey questionnaire, followed by face-to-face interviews to clarify responses and gather additional qualitative data. In Stage 2, a second survey was distributed to gather consensus on the identified practices. A Likert scale was employed to assess agreement levels among participants. In Stage 3, a final survey was used to finalize the list of competencies, with responses analyzed using Average Percent Majority Opinion (APMO) to determine the final consensus.

The data analysis was handled using both qualitative and quantitative methods. For qualitative data, open-ended responses were coded and categorized into themes through open coding, selective coding, and axial coding. In the quantitative phase, data from the second round were subjected to interquartile range analysis to identify which practices met the criteria for inclusion in the proposed quality management framework as recommended. The coefficient of variation was also used to assess the reliability of initial consensus responses. Finally, in Stage 3, APMO was calculated to determine the level of agreement among participants, ensuring that the final practices were

representative of the majority opinion.

The Delphi technique was applied across these stages to achieve a well-rounded consensus on quality management practices. This iterative process, combining both expert opinion and statistical validation, strengthened the study's reliability and ensured that the resulting framework reflected the collective insights of experienced middle-level managers in HEIs.

The quantitative and qualitative data analytical process was well-documented to ensure the quality of the findings while ensuring that certain ethical considerations related to confidentiality and data privacy were observed. Detailed descriptions and processes involving analytical techniques were provided, enabling others to replicate the analysis if they chose to conduct a similar study. All steps involved in the data analysis, including data cleaning and statistical techniques, were comprehensively documented, enhancing the transparency and validity of the analysis and allowing for scrutiny and verification by other researchers.

RESULTS AND DISCUSSION

Quality Management Practices within HEIs

The quality management practices in terms of research, extension and linkages, and management of resources were identified during the Delphi first round of this study. Thereafter, consensus was achieved on the thematically analyzed practices during the second and third Delphi rounds.

Delphi Round One

A panel of experts made up of middle-level managers from particular Higher Education Institutions (HEIs) in Oriental Mindoro was carefully chosen as the first step in the Delphi technique for this qualitative study. To acquaint the middle-level managers with pertinent concepts, background material on quality management practices, including research, extension and linkages, and management of resources, was given. Following that, the middle-level managers were asked to participate in the open coding process, where they used the stated principles to identify the practices within their HEIs concerning research, extension and linkages, and management of resources. The middle-level managers' contributions during this preliminary round laid the framework for later rounds of consensus-building and communication to further hone the recognized competencies.

The first (1st) open-ended question answers the first research question which asked the participants to identify the practices within their HEIs in terms of instruction, research, extension and linkages, and management of resources.

Table 2. *Quality Management Practices within HEIs*

	Round 1
1	*We have implemented a system that emphasizes continuous improvement and alignment with industry standards. Our faculty members undergo regular curriculum reviews and updates to ensure relevance and effectiveness in preparing our students for the demands of the workforce*
2	*For instance, in our Business Administration program, we have established an advisory board comprised of industry experts who provide feedback on curriculum design and course content. This collaboration ensures that our students receive a comprehensive education that meets the evolving needs of the business community.*
3	*We prioritize continuous professional development and support to ensure that our educators remain at the forefront of their respective fields. We provide opportunities for faculty members*

	to engage in research projects, attend conferences, and participate in workshops to enhance their knowledge and skills.
4	*Our faculty development program includes workshops on innovative teaching methodologies, research methodologies, and pedagogical techniques to enhance the learning experience of our students. Additionally, we encourage faculty members to pursue advanced degrees and certifications to further their expertise in their areas of specialization.*
5	*I am deeply involved in ensuring that our institution maintains the highest standards of quality across various key areas. In relation to instruction and curriculum, we have implemented a comprehensive quality management system that focuses on continuous improvement and alignment with industry standards. Our curriculum development process involves thorough reviews by subject matter experts, pedagogical experts, and industry practitioners to ensure relevance, rigor, and effectiveness.*
6	*When developing a new course in Information Technology, we formed a curriculum development committee consisting of faculty members with expertise in the field, as well as representatives from leading tech companies. Through a series of meetings and consultations, we identified the key competencies and learning outcomes required for the course and integrated industry-relevant content and practical applications into the curriculum.*
7	*We place a strong emphasis on faculty competence and development to ensure that our educators possess the necessary knowledge, skills, and expertise to deliver high-quality instruction. We offer regular professional development workshops, seminars, and training sessions to support faculty members in enhancing their teaching methodologies, research skills, and subject matter expertise.*
8	*We recently conducted a workshop on innovative teaching strategies where faculty members learned about active learning techniques, flipped classroom models, and the integration of technology in teaching.*
9	*We regularly review and update our curriculum to ensure that it remains relevant and responsive to the demands of the job market.*
10	*We provide funding and support for faculty members to attend conferences, present research papers, and engage in collaborative research projects to stay abreast of the latest developments in their fields.*
11	*When we noticed a growing demand for expertise in data analytics, we promptly integrated relevant courses into our curriculum and provided faculty training to ensure effective delivery.*
12	*We engage with industry professionals, conduct surveys, and analyze employment trends to identify areas for improvement*
13	*We have established interdisciplinary research centers and*

	institutes to promote collaboration and knowledge exchange among faculty members and external stakeholders. These centers focus on addressing pressing societal issues and contribute to the advancement of knowledge in various fields.
14	*We conduct research projects on biodiversity conservation, sustainable agriculture, and climate change adaptation*
15	*We prioritize culture of innovation and inquiry among both faculty and students*
16	*We provide ample support and resources for research initiatives, including incentives and grants, facilities, and access to databases*
17	*We encourage to pursue interdisciplinary research projects and collaborate with external partners to maximize impact*
18	*We have partnerships with local government units to conduct research on sustainable development practices, which has resulted in actionable recommendations for policy makers.*
19	*We have established rigorous ethical guidelines and protocols to ensure the responsible conduct of research and the protection of human subjects, animal welfare, and intellectual property rights.*
20	*We actively promote collaboration and interdisciplinary research initiatives both within our institution and with external partners. We facilitate networking opportunities, joint research projects, and interdisciplinary research centers to establish cross-disciplinary dialogue and knowledge exchange*
21	*We provide access to funding opportunities, research databases, and technical support services to facilitate research endeavors. We support faculty and students in publishing their research in peer-reviewed journals, presenting at conferences, and participating in knowledge transfer activities such as seminars, workshops, and public lectures.*
22	*We have laboratories, research centers, libraries, and computing facilities equipped with the latest technology and software tools*
23	*We invest in building and maintaining research infrastructure to support the diverse needs of our researchers*
24	*We encourage faculty members and students to actively engage in research activities by providing incentives such as research grants, sabbatical leaves, and recognition for outstanding research achievements.*
25	*Our extension office collaborates with local communities and government agencies to implement sustainable development initiatives that address environmental, social, and economic challenges. Through research projects and extension activities, we aim to make meaningful contributions to the development of our region and beyond.*
26	*We actively seek partnerships with other institutions, industry partners, and government agencies to enhance our academic programs and research endeavors. These partnerships enable us to leverage resources, share best practices, and facilitate knowledge transfer.*
27	*We have established Memorandum of Agreement (MOAs) with*

	local businesses, government agencies, and international universities to promote student exchange programs, collaborative research projects, and joint academic initiatives. These partnerships enrich the academic experience of our students and contribute to the development of our institution.
28	*We actively seek opportunities to contribute to the development of our surrounding communities through outreach programs, capacity-building initiatives, and knowledge transfer activities*
29	*We organize regular workshops and seminars for local entrepreneurs to enhance their business acumen and promote economic growth in the region*
30	*We forge partnerships with other academic institutions, government agencies, and non-profit organizations to leverage resources and expertise for mutually beneficial projects*
31	*We believe in the importance of understanding the needs and aspirations of the communities we serve. Our extension programs start with thorough needs assessments conducted in collaboration with local government units, community organizations, and other stakeholders.*
32	*Building strong partnerships is key to the success of our extension efforts. We collaborate with local government agencies, non-profit organizations, industry partners, and other HEIs to leverage resources, expertise, and networks.*
33	*We design our extension programs to address a wide range of societal needs, including education, healthcare, environmental sustainability, economic development, and social welfare. These programs are developed in consultation with stakeholders and are tailored to the unique context and priorities of each community. Whether it's providing skills training for unemployed youth, delivering health education workshops for underserved populations, or promoting sustainable agricultural practices, our extension activities aim to make a meaningful difference in people's lives.*
34	*Our extension activities focus not only on providing immediate solutions but also on building the capacity of individuals and communities to address their own challenges in the long run.*
35	*We facilitate knowledge transfer through training workshops, seminars, demonstration projects, and technology transfer initiatives.*
36	*We regularly assess the effectiveness, efficiency, and impact of our initiatives to ensure that they are meeting their objectives and delivering tangible benefits to the target beneficiaries. Feedback from stakeholders and beneficiaries is solicited and incorporated into program improvements and refinements.*
37	*We prioritize transparency, efficiency, and sustainability in the allocation and utilization of resources to support our academic and research activities.*
38	*We conduct regular audits and assessments to identify areas for improvement and efficiency gains.*
39	*We invest in infrastructure upgrades and technology*

	enhancements to create a conducive learning and research environment for our students and faculty members.
40	*If we identify a growing demand for course programs, we allocate funds towards enhancing laboratory facilities, acquiring specialized equipment, and hiring qualified faculty in those areas. This strategic approach ensures that our resources are utilized efficiently and effectively to support our academic goals and priorities.*
41	*We have implemented budgeting and financial management systems to ensure accountability and optimize resource allocation.*
42	*We oversee the allocation and utilization of resources to ensure optimal efficiency and sustainability. This involves careful budget planning, prioritization of needs, and monitoring of expenditures*
43	*We invest in state-of-the-art facilities and technology to enhance the learning environment for our students while also implementing energy-saving measures to reduce operational costs*
44	*We actively seek opportunities for resource sharing and collaboration with other departments and campuses within our institution to maximize utilization and minimize waste.*
45	*I oversee the development of our institution's annual budget, ensuring that it aligns with our strategic objectives and reflects our priorities. We implement sound financial practices, such as regular budget monitoring, cost-control measures, and transparency in financial reporting, to ensure fiscal sustainability and accountability.*
46	*We invest in faculty and staff development programs to enhance their skills, knowledge, and job performance. We provide opportunities for professional growth and career advancement, we ensure that our human resources remain motivated, engaged, and capable of contributing to our institution's success.*
47	*We want to boast various facilities and infrastructure, including classrooms, laboratories, libraries, and recreational spaces. We strive to maximize the utilization of these resources by implementing scheduling systems, optimizing space usage, and maintaining facilities to ensure safety, functionality, and accessibility. Additionally, we regularly assess the condition of our infrastructure and prioritize maintenance and upgrades to meet evolving needs.*
48	*We meticulously analyze our institution's needs and prioritize resource allocation accordingly*

Table 2 presents the practices within their HEIs in terms of instruction, research, extension and linkages, and management of resources. Several institutions have implemented systems designed to update curricula regularly to maintain relevance and effectiveness. One expert noted, "*We have implemented a system that emphasizes continuous improvement and alignment with industry standards. Our faculty members undergo regular curriculum reviews and updates to ensure relevance and effectiveness in preparing our students for the demands of the workforce*." Furthermore, institutions have established advisory boards and curriculum development committees to collaborate with industry experts, ensuring that students acquire the competencies required in the workforce. One

respondent shared, "*In our Business Administration program, we have established an advisory board comprised of industry experts who provide feedback on curriculum design and course content. This collaboration ensures that our students receive a comprehensive education that meets the evolving needs of the business community*." The results of this study align with Weiss et al.'s (2021) perspective by illustrating how institutions are proactively adapting their curricula to ensure relevance and effectiveness in preparing students for future challenges, including those related to sustainability. The emphasis on continuous improvement and curriculum updates reflects an institutional commitment to aligning education with evolving industry standards and sustainable development needs. This ongoing revision process not only ensures that students are equipped to meet workforce demands but also suggests that institutions are considering broader societal and environmental factors in their curriculum design.

Faculty development is another major theme emerging from the responses. HEIs are investing in professional growth through workshops, training, and providing opportunities for advanced degrees. One expert shared, "*We prioritize continuous professional development and support to ensure that our educators remain at the forefront of their respective fields. We provide opportunities for faculty members to engage in research projects, attend conferences, and participate in workshops to enhance their knowledge and skills*." Institutions also promote innovative teaching strategies, such as flipped classrooms and active learning, to enhance the learning experience. One respondent highlighted, "*we recently conducted a workshop on innovative teaching strategies where faculty members learned about active learning techniques, flipped classroom models, and the integration of technology in teaching*." Pham (2021) highlights the increasing recognition of higher education by national governments and international agencies as a critical driver for achieving sustainable development goals. This recognition emphasizes the pivotal role that higher education institutions play in preparing graduates who can contribute to sustainable economic growth, innovation, and societal development. The results align closely with this literature, reflecting how higher education institutions are taking proactive steps to ensure their curricula remain relevant and effective in the context of evolving industry demands.

Research engagement is a key priority for many institutions, and the experts shared the various strategies they employ to support and facilitate research activities. This includes the establishment of interdisciplinary research centers and collaboration with external stakeholders. One respondent shared, "*We have established interdisciplinary research centers and institutes to promote collaboration and knowledge exchange among faculty members and external stakeholders. These centers focus on addressing pressing societal issues and contribute to the advancement of knowledge in various fields*." Institutions also provide ample support for research endeavors through funding, access to databases, and state-of-the-art infrastructure. One expert shared, "*we provide access to funding opportunities, research databases, and technical support services to facilitate research endeavors. We support faculty and students in publishing their research in peer-reviewed journals, presenting at conferences, and participating in knowledge transfer activities such as seminars, workshops, and public lectures*." By creating interdisciplinary research centers, institutions are promoting collaboration not only within their academic communities but also with external organizations, stakeholders, and the broader public. This approach mirrors the public engagement efforts described by Nollett et al. (2024), where academic institutions increasingly work alongside various societal actors to address challenges and disseminate research findings. These centers are crucial to ensure that research is not conducted in isolation but is relevant and beneficial to the wider community.

Extension programs and community linkages are designed to address the diverse needs of surrounding communities. Institutions engage in thorough needs assessments and consultations with stakeholders to ensure their programs are relevant and impactful. One respondent emphasized, "*Our extension programs start with thorough needs assessments conducted in collaboration with local government units, community organizations, and other stakeholders*." These programs focus on numerous societal needs, from education and healthcare to environmental sustainability and economic development. One expert noted, "*We design our extension programs to address a wide range of societal needs, including education, healthcare, environmental sustainability, economic development, and social welfare*." As noted by the experts in the study, institutions engage in thorough needs assessments and consultations with local stakeholders, such as government units and community organizations, to ensure the

relevance and impact of their programs. This approach reflects the broader educational goals of sustainability, as highlighted by Menon and Suresh (2020), where HEIs are encouraged to work in partnership with local communities to integrate sustainable practices into their curricula and extension activities.

In terms of resource management, the responses indicate that HEIs are prioritizing efficient resource allocation to support academic and research activities. Financial management systems, audits, and infrastructure upgrades are regularly implemented to ensure sustainability and accountability. One expert shared, "*We have implemented budgeting and financial management systems to ensure accountability and optimize resource allocation*." While another noted, "*We invest in infrastructure upgrades and technology enhancements to create a conducive learning and research environment for our students and faculty members*." Institutions also focus on maximizing resource utilization through collaboration and transparency. One respondent stated, "*We actively seek opportunities for resource sharing and collaboration with other departments and campuses within our institution to maximize utilization and minimize waste*." Serafini et al. (2022) emphasize the critical role of Higher Education Institutions (HEIs) in achieving the Sustainable Development Goals (SDGs) and the 2030 Agenda established by the United Nations. As agents of knowledge, HEIs contribute significantly to fostering a socially just, economically viable, and environmentally sustainable world. This literature directly connects to the study's findings, which highlight how HEIs are prioritizing efficient resource allocation to support academic and research activities, ensuring their operations align with sustainability principles.

In conclusion, the responses from the experts provide a comprehensive view of the practices within Higher Education Institutions in Oriental Mindoro, illustrating a strong commitment to quality management in instruction, research, extension, and resource management. The strategies employed emphasize continuous improvement, faculty development, interdisciplinary collaboration, and community engagement, ensuring that these institutions are well-positioned to meet the evolving needs of both students and society. These responses served as a foundation for the next rounds of consensus-building in the Delphi process.

Delphi Round Two

Analyzing participant agreement with respect to the theme clusters of quality management practices discovered in the qualitative phase is the main focus of the quantitative phase or the Delphi Round 2. The responses gathered from the Delphi stage 1 were listed accordingly and organized into a survey questionnaire for evaluation based on agreement of the consolidated quality management practices within HEIs concerning instruction, research, extension and linkages, and management of resources. This entails assessing the variability and agreement of viewpoints using several statistical measures, such as the mean, Standard Deviation (SD), third Inter-Quartile Percentage (3rd IQR), and Coefficient of Variation (CV). The interquartile range (IQR) was utilized by the researcher to evaluate the degree of response extreme or dispersion, especially while figuring out the Delphi consensus. When participants rate items using a Likert scale, where the range of replies can fluctuate, this method is especially helpful. Furthermore, the Coefficient of Covariance (CV) was to determine the initial consensus.

Table 3. *Round 2 Consensus of Opinions on Quality Management Practices within HEIs in terms of Instruction*

Significant Statement						
Instruction	**Items**	**M**	**VI**	**SD**	**IQR**	**CV**
1. *We have implemented a system that emphasizes continuous improvement and alignment with industry standards. Our faculty members undergo regular curriculum reviews and updates to ensure relevance and effectiveness in preparing our students for the demands of the workforce*	1. Develop and implement a systematic approach for continuous curriculum improvement and alignment with industry standards	3.51	GI	0.54	1	0.16

2. *For instance, in our Business Administration program, we have established an advisory board comprised of industry experts who provide feedback on curriculum design and course content. This collaboration ensures that our students receive a comprehensive education that meets the evolving needs of the business community.*	2. Establish advisory boards comprising industry experts to provide feedback on curriculum design and course content relevance	3.48	MI	0.60	0	0.08
3. *We prioritize continuous professional development and support to ensure that our educators remain at the forefront of their respective fields. We provide opportunities for faculty members to engage in research projects, attend conferences, and participate in workshops to enhance their knowledge and skills.*	3. Prioritize faculty professional development to ensure they remain at the forefront of their fields	3.42	MI	0.58	0	0.08
4. *Our faculty development program includes workshops on innovative teaching methodologies, research methodologies, and pedagogical techniques to enhance the learning experience of our students. Additionally, we encourage faculty members to pursue advanced degrees and certifications to further their expertise in their areas of specialization.*						
5. *I am deeply involved in ensuring that our institution maintains the highest standards of quality across various key areas. In relation to instruction and curriculum, we have implemented a comprehensive quality management system that focuses on continuous improvement and alignment with industry standards. Our curriculum development process involves thorough reviews by subject matter experts, pedagogical experts, and industry practitioners to ensure relevance, rigor, and effectiveness.*	4. Conduct regular curriculum reviews to ensure relevance and responsiveness to job market demands	3.41	MI	0.54	1	0.08
6. *When developing a new course in Information Technology, we formed a curriculum development committee consisting of faculty members with*	5. Integrate industry-relevant content and practical applications	3.41	MI	0.52	0.75	0.13

expertise in the field, as well as representatives from leading tech companies. Through a series of meetings and consultations, we identified the key competencies and learning outcomes required for the course and integrated industry-relevant content and practical applications into the curriculum.	into the curriculum development process					
7. *We place a strong emphasis on faculty competence and development to ensure that our educators possess the necessary knowledge, skills, and expertise to deliver high-quality instruction. We offer regular professional development workshops, seminars, and training sessions to support faculty members in enhancing their teaching methodologies, research skills, and subject matter expertise.*	6. Provide funding and support for faculty to attend conferences, present research papers, and engage in collaborative projects	3.37	MI	0.65	0.75	0.15
8. *We recently conducted a workshop on innovative teaching strategies where faculty members learned about active learning techniques, flipped classroom models, and the integration of technology in teaching.*	7. Offer workshops and training sessions on innovative teaching methodologies and pedagogical techniques	3.35	MI	0.53	0.75	0.08
9. *We regularly review and update our curriculum to ensure that it remains relevant and responsive to the demands of the job market.*	8. Monitor employment trends and engage with industry professionals to identify areas for curriculum improvement	3.28	MI	0.57	0.75	0.16
10. *We provide funding and support for faculty members to attend conferences, present research papers, and engage in collaborative research projects to stay abreast of the latest developments in their fields.*	9. Provide faculty with opportunities to engage in research projects and stay abreast of the latest developments in their fields	3.22	MI	0.60	0.75	0.16
11. *When we noticed a growing demand for expertise in data analytics, we promptly integrated relevant courses into our curriculum and provided faculty training to ensure effective delivery.*	10. Analyze student feedback and performance data to assess the effectiveness of	3.19	MI	0.60	1	0.13

12. *We engage with industry professionals, conduct surveys, and analyze employment trends to identify areas for improvement*	curriculum delivery and make necessary adjustments					
Overall		**3.36**	**MI**	**0.54**	**0.67**	**0.12**

Legend:
a. Cut-off point: IQR ≤ 1
b. Cut-off point: CV ≤ 50%
c. Rating Scale: 4 = Greatly Involved; 3 = Moderately Involved; 2 = Slightly Involved; 1 = Least Involved

Table 3 presents the quantitative phase or the Delphi Round 2 from the responses gathered from the Delphi Stage 1 listed accordingly and organized into a survey questionnaire for evaluation based on agreement of the consolidated quality management practices within HEIs in terms of instruction. It shows that HEIs are moderately involved in their quality management practices along with instruction with a mean score of 3.36 (SD: 0.54) with an IQR of 0.67 and CV value of 0.67 indicating a strong agreement. The average HEI involvement in quality management techniques along the instruction line is 3.36, which is above the scale midpoint and suggests a reasonable degree of commitment. The replies are grouped around the mean, as indicated by the standard deviation (SD) of 0.54, which suggests some variability in the responses but rather mild.

The middle 50% of the replies are within 0.67 units of one another, according to the Interquartile Range (IQR) of 0.67, which is less than the cut-off point of 1. Regarding the extent to which HEIs are involved in quality management procedures, respondents appear to be in general agreement, as indicated by the low IQR score. It shows that the respondents' perceptions are consistent.

With a coefficient of variation (CV) of 0.67, the data surpasses the 50% threshold. The relative variability with respect to the mean is measured by the CV. The mean score and IQR nevertheless show that respondents strongly believe that HEIs are involved in quality management procedures throughout instruction, even though the CV is greater than the cut-off, showing some degree of relative variability.

A low IQR, a slightly above-threshold CV value, and a moderately high mean score all highlight a solid consensus among respondents about HEIs' modest involvement in instruction-related quality management activities. Higher Education Institutions (HEIs) ' critical role remains crucial in building national competence (Dembereldorj, 2018). Meanwhile, Lockman and Schirmer (2020) explained that using various pedagogies and learning resources to meet the diverse learning needs of students are effective instructional practice. The low IQR indicates that middle-level managers and experts in HEIs have a common understanding of these behaviors and how they engage in them. Even if the CV was above the cut-off, the overall interpretation nonetheless supports a strong agreement.

Table 4. *Round 2 Consensus of Opinions on Quality Management Practices within HEIs in terms of Research*

Significant Statement						
Research	**Items**	**M**	**VI**	**SD**	**IQR**	**CV**
1. We have established interdisciplinary research centers and institutes to promote collaboration and knowledge exchange among faculty members and external stakeholders. These centers focus on addressing pressing societal issues and contribute to the	1. Establish interdisciplinary research centers and institutes to foster collaboration and knowledge exchange among faculty members and external stakeholders	3.42	MI	0.53	1	0.08

advancement of knowledge in various fields.						
2. We conduct research projects on biodiversity conservation, sustainable agriculture, and climate change adaptation	2. Conduct research projects addressing pressing societal issues such as biodiversity conservation, sustainable agriculture, and climate change adaptation	3.49	MI	0.53	0	0.08
3. We prioritize culture of innovation and inquiry among both faculty and students	3. Prioritize a culture of innovation and inquiry among faculty and students to drive research excellence	3.43	MI	0.51	1	0.16
4. We provide ample support and resources for research initiatives, including incentives and grants, facilities, and access to databases	4. Provide ample support and resources for research initiatives, including incentives, grants, facilities, and access to databases	3.39	MI	0.53	0.75	0.13
5. We encourage to pursue interdisciplinary research projects and collaborate with external partners to maximize impact	5. Encourage faculty and students to pursue interdisciplinary research projects and collaborations with external partners	3.36	MI	0.55	1	0.13
6. We have partnerships with local government units to conduct research on sustainable development practices, which has resulted in actionable recommendations for policy makers.	6. Form partnerships with local government units to conduct research on sustainable development practices and provide actionable recommendations for policy makers	3.29	MI	0.59	0.75	0.08
7. We have established rigorous ethical guidelines and protocols to ensure the responsible conduct of research and the protection of human subjects, animal welfare, and intellectual property rights.	7. Implement rigorous ethical guidelines and protocols to ensure the responsible conduct of research and protect human subjects, animal welfare, and intellectual property rights	3.28	MI	0.57	0.75	0.15
8. We actively promote collaboration and interdisciplinary research initiatives both within our institution and with external partners. We facilitate networking opportunities, joint research projects, and interdisciplinary research centers to establish cross-	8. Promote collaboration and interdisciplinary research initiatives within the institution and with external partners through networking opportunities and joint research projects	3.22	MI	0.51	0.75	0.16

disciplinary dialogue and knowledge exchange						
9. We provide access to funding opportunities, research databases, and technical support services to facilitate research endeavors. We support faculty and students in publishing their research in peer-reviewed journals, presenting at conferences, and participating in knowledge transfer activities such as seminars, workshops, and public lectures. *10. We have laboratories, research centers, libraries, and computing facilities equipped with the latest technology and software tools* *11. We invest in building and maintaining research infrastructure to support the diverse needs of our researchers*	9. Provide access to funding opportunities, research databases, and technical support services to facilitate research endeavors	3.22	MI	0.56	0.75	0.08
12. *We encourage faculty members and students to actively engage in research activities by providing incentives such as research grants, sabbatical leaves, and recognition for outstanding research achievements.*	10. Support faculty and students in publishing their research in peer-reviewed journals, presenting at conferences, and participating in knowledge transfer activities	3.14	MI	0.54	0.75	0.16
Overall		**3.32**	**MI**	**0.54**	**0.77**	**0.13**

Legend:
a. Cut-off point: IQR ≤ 1
b. Cut-off point: CV ≤ 50%
c. Rating Scale: 4 = Greatly Involved; 3 = Moderately Involved; 2 = Slightly Involved; 1 = Least Involved

Table 4 presents the quantitative phase or the Delphi Round 2 from the responses gathered from the Delphi Stage 1 listed accordingly and organized into a survey questionnaire for evaluation based on agreement of the consolidated quality management practices within HEIs in terms of research. It depicts that HEIs are moderately involved in their quality management practices along with research with a mean score of 3.32 (SD: 0.54) with an IQR of 0.77 and CV value of 0.13, indicating a strong agreement. The average mean score of 3.32 suggests that higher education institutions (HEIs) are viewed as "Moderately Involved" in quality management practices related to research. Research is defined as "the creation of new knowledge and/or the use of existing knowledge in a new and creative way to generate new concepts, methodologies, inventions, and understandings" by the Australian Research Council (2018). The score indicates a reasonable level of engagement because it is just above the scale's middle. The moderate variety in the replies is indicated by the standard deviation of 0.54. This suggests that respondents' perceptions of the degree of involvement vary somewhat but not much.

The middle 50% of responses fall within an interval of 0.77 units from one another, as indicated by the IQR of 0.77,

which is less than the cut-off point of 1. Regarding HEIs' participation in research-related quality management procedures, the respondents appear to be in general agreement, as indicated by the comparatively low IQR. Very little relative variability in the assessment is shown by the coefficient of variation of 0.13, which is far less than the 50% cut-off mark. This low CV value indicates that respondents' assessments were highly agreed upon.

The respondents strongly agree that HEIs are somewhat involved in quality management methods connected to research, as evidenced by the moderately high mean score, low IQR, and very low CV. The low IQR and CV indicate consistency in the responses, which points to a common understanding and perception among the respondents. Together with the high degree of agreement demonstrated by the IQR and CV values, the mean score's indication of moderate engagement suggests that middle-level managers share a common understanding. In general, it was found that they least encourage faculty members and students to actively engage in research activities by providing incentives such as research grants, sabbatical leaves, and recognition for outstanding research achievements. Contrarily, Dembereldorj (2018) claimed that with the current standing of our education system in the ranking of educational institutions, extra efforts must be exerted to level it again to foreign education, thus a big responsibility on the shoulders of the top management. On the other hand, Georghiou (2015) emphasized that the economic strategy is centered on research and innovation, which also plays a vital role in advancing its societies and cultures.

Table 5. *Round 2 Consensus of Opinions on Quality Management Practices within HEIs in terms of Extension and Linkage*

Significant Statement						
Extension and Linkage	**Items**	**M**	**VI**	**SD**	**IQR**	**CV**
1. Our extension office collaborates with local communities and government agencies to implement sustainable development initiatives that address environmental, social, and economic challenges. Through research projects and extension activities, we aim to make meaningful contributions to the development of our region and beyond.	1. Collaborate with local communities and government agencies to implement sustainable development initiatives addressing environmental, social, and economic challenges	3.61	GI	0.55	0	0.16
2. We actively seek partnerships with other institutions, industry partners, and government agencies to enhance our academic programs and research endeavors. These partnerships enable us to leverage resources, share best practices, and facilitate knowledge transfer.	2. Seek partnerships with other institutions, industry partners, and government agencies to enhance academic programs and research endeavors	3.48	MI	0.66	0	0.16
3. We have established Memorandum of Agreement (MOAs) with local businesses, government agencies, and international universities to promote student exchange programs, collaborative research projects, and joint academic initiatives. These partnerships enrich the academic experience of our students and	3. Establish Memorandum of Agreement (MOAs) with local businesses, government agencies, and international universities to promote student exchange programs and collaborative research projects	3.42	MI	0.66	1	0.13

contribute to the development of our institution.						
4. We actively seek opportunities to contribute to the development of our surrounding communities through outreach programs, capacity-building initiatives, and knowledge transfer activities *5. We organize regular workshops and seminars for local entrepreneurs to enhance their business acumen and promote economic growth in the region*	*4.* Organize workshops and seminars for local entrepreneurs to enhance business acumen and promote economic growth in the region	3.42	MI	0.55	1	0.08
6. We forge partnerships with other academic institutions, government agencies, and non-profit organizations to leverage resources and expertise for mutually beneficial projects	5. Forge partnerships with academic institutions, government agencies, and non-profit organizations to leverage resources and expertise for mutually beneficial projects	3.45	MI	0.49	0.75	0.13
7. We believe in the importance of understanding the needs and aspirations of the communities we serve. Our extension programs start with thorough needs assessments conducted in collaboration with local government units, community organizations, and other stakeholders. *8. Building strong partnerships is key to the success of our extension efforts. We collaborate with local government agencies, non-profit organizations, industry partners, and other HEIs to leverage resources, expertise, and networks.*	6. Conduct thorough needs assessments in collaboration with local stakeholders to inform extension program development	3.45	MI	0.71	1	0.16
9. We design our extension programs to address a wide range of societal needs, including education, healthcare, environmental sustainability, economic development, and social welfare. These programs are developed in consultation with stakeholders and are tailored to the unique context and priorities of each community. Whether it's providing skills training for unemployed youth, delivering health education workshops	*7.* Design extension programs tailored to address societal needs, including education, healthcare, environmental sustainability, economic development, and social welfare	3.42	MI	0.49	1	0.08

for underserved populations, or promoting sustainable agricultural practices, our extension activities aim to make a meaningful difference in people's lives.						
10. Our extension activities focus not only on providing immediate solutions but also on building the capacity of individuals and communities to address their own challenges in the long run.	8. Facilitate knowledge transfer through training workshops, seminars, demonstration projects, and technology transfer initiatives	3.33	MI	0.63	0.75	0.15
11. We facilitate knowledge transfer through training workshops, seminars, demonstration projects, and technology transfer initiatives.	9. Assess the effectiveness, efficiency, and impact of extension initiatives to ensure they meet objectives and deliver tangible benefits to target beneficiaries	3.21	MI	0.64	0.75	0.16
12. We regularly assess the effectiveness, efficiency, and impact of our initiatives to ensure that they are meeting their objectives and delivering tangible benefits to the target beneficiaries. Feedback from stakeholders and beneficiaries is solicited and incorporated into program improvements and refinements.	10. Solicit feedback from stakeholders and beneficiaries to incorporate into program improvements and refinements	3.24	MI	0.66	1	0.16
Overall		**3.41**	**MI**	**0.61**	**0.73**	**0.14**

Legend:
a. Cut-off point: IQR ≤ 1
b. Cut-off point: CV ≤ 50%
c. Rating Scale: 4 = Greatly Involved; 3 = Moderately Involved; 2 = Slightly Involved; 1 = Least Involved

Table 5 presents the quantitative phase or the Delphi Round 2 from the responses gathered from the Delphi Stage 1 listed accordingly and organized into a survey questionnaire for evaluation based on agreement of the consolidated quality management practices within HEIs concerning extension and linkages. It shows that HEIs are moderately involved in their quality management practices along with extension and linkage, with a mean score of 3.42 (SD: 0.61) with an IQR of 0.73 and CV value of 0.14, indicating a strong agreement. The respondents believe HEIs are "Moderately Involved" in quality management practices along with extension and linkage, according to the mean score of 3.42. This rating, just over the rating scale's midpoint, indicates that these institutions are fairly involved. The modest level of variability in the responses is indicated by the standard deviation of 0.61. This shows that although respondents' perceptions of the degree of involvement vary somewhat, overall responses are constant.

The middle 50% of responses fall within an interval of 0.73 units from one another, as indicated by the IQR of 0.73, which is less than the cut-off point of 1. When it comes to the respondents' agreement that HEIs should be involved in quality management methods connected to extension and linkage, this low IQR indicates strong agreement. Very

little relative variability in the replies is shown by the coefficient of variation of 0.14, much lower than the 50% cut-off mark. The high degree of agreement among respondents regarding their assessments is highlighted by the low CV value.

A low IQR, very low CV, and a moderately high mean score all point to a significant consensus among respondents about HEIs' modest involvement in quality management techniques linked to extension and linking. The low IQR and CV, which show consistency in the responses, point to a common understanding and perception among the respondents.

The respondents overwhelmingly concur that HEIs in Oriental Mindoro participate in quality management measures to a moderate extent, including extension and linkage. When combined with the high degree of agreement demonstrated by the IQR and CV values, the mean score of 3.42, which denotes moderate engagement, represents a consensus among middle-level managers. This broad consensus shows that HEIs are working hard and consistently at their extension and connection initiatives. To fulfil different societal requirements, such as education, healthcare, environmental sustainability, and economic development, these activities probably entail working with regional communities, governmental organizations, and business partners. The modest involvement indicates that the institutions are moving in the right direction in incorporating extension and linking activities into their quality. Per Quitoras and Abuso (2021), state institutions are expected not just to deliver instruction, research, extension, and production functions. They are expected to do those functions excellently and well ahead of other higher education institutions.

Table 6. *Round 2 Consensus of Opinions on Quality Management Practices within HEIs in terms of Management of Resources*

Significant Statement						
Management of Resources	**Items**	**M**	**VI**	**SD**	**IQR**	**CV**
1. *We prioritize transparency, efficiency, and sustainability in the allocation and utilization of resources to support our academic and research activities.*	1. Prioritize transparency, efficiency, and sustainability in the allocation and utilization of resources to support academic and research activities	3.46	MI	0.61	1	0.13
2. *We conduct regular audits and assessments to identify areas for improvement and efficiency gains.*	2. Conduct regular audits and assessments to identify areas for improvement and efficiency gains in resource management	3.37	MI	0.58	0	0.16
3. *We invest in infrastructure upgrades and technology enhancements to create a conducive learning and research environment for our students and faculty members.*	3. Invest in infrastructure upgrades and technology enhancements to create a conducive	3.34	MI	0.59	1 1	0.16 0.13

4. *If we identify a growing demand for course programs, we allocate funds towards enhancing laboratory facilities, acquiring specialized equipment, and hiring qualified faculty in those areas. This strategic approach ensures that our resources are utilized efficiently and effectively to support our academic goals and priorities.*	learning and research environment					
5. *We have implemented budgeting and financial management systems to ensure accountability and optimize resource allocation.*	4. Allocate funds towards enhancing laboratory facilities, acquiring specialized equipment, and hiring qualified faculty in response to growing demand for course programs	3.33	MI	0.58	0.75	0.08
6. *We oversee the allocation and utilization of resources to ensure optimal efficiency and sustainability. This involves careful budget planning, prioritization of needs, and monitoring of expenditures*	5. Implement budgeting and financial management systems to ensure accountability and optimize resource allocation	3.33	MI	0.62	1	0.16
7. *We invest in state-of-the-art facilities and technology to enhance the learning environment for our students while also implementing energy-saving measures to reduce operational costs*	6. Invest in state-of-the-art facilities and technology while implementing energy-saving measures to reduce operational costs	3.26	MI	0.60	1	0.08
8. *We actively seek opportunities for resource sharing and collaboration with other departments and campuses within our institution to maximize utilization and minimize waste.*	7. seek opportunities for resource sharing and collaboration with other departments and campuses within the institution	3.15	MI	0.61	0	0.15
9. *I oversee the development of our institution's annual budget, ensuring that it aligns with our strategic objectives and reflects our priorities. We implement sound financial practices, such as regular budget monitoring, cost-control measures, and transparency in financial*	8. Develop annual budgets aligning with strategic objectives and reflecting institutional priorities	3.13	MI	0.65	1	0.16

reporting, to ensure fiscal sustainability and accountability.						
10. *We invest in faculty and staff development programs to enhance their skills, knowledge, and job performance. We provide opportunities for professional growth and career advancement, ensure that our human resources remain motivated, engaged, and capable of contributing to institution's success.*	9. Invest in faculty and staff development programs to enhance skills, knowledge, and job performance	2.95	MI	0.76	1	0.16
11. *We want to boast various facilities and infrastructure, including classrooms, laboratories, libraries, and recreational spaces. We strive to maximize the utilization of these resources by scheduling systems, optimizing space usage, and maintaining facilities to ensure safety, functionality, and accessibility. Additionally, we regularly assess the condition of our infrastructure and prioritize maintenance and upgrades to meet evolving needs.*	10. Oversee the allocation and utilization of resources to ensure optimal efficiency and sustainability	2.92	MI	0.75	0	0.16
12. *We meticulously analyze institution's needs and prioritize resource allocation accordingly*						
Overall		**3.22**	**MI**	**0.64**	**0.70**	**0.14**

Legend:
a. Cut-off point: IQR ≤ 1
b. Cut-off point: CV ≤ 50%
c. Rating Scale: 4 = Greatly Involved; 3 = Moderately Involved; 2 = Slightly Involved; 1 = Least Involved

Table 6 presents the quantitative phase of Delphi Round 2 from the responses gathered from the Delphi Stage 1 listed accordingly and organized into a survey questionnaire for evaluation based on agreement of the consolidated quality management practices within HEIs concerning the management of resources. It illustrates that HEIs are moderately involved in their quality management practices along with the management of resources with a mean score of 3.22 (SD: 0.64) with an IQR of 0.70 and CV value of 0.14, indicating a strong agreement. According to the mean score of 3.22, HEIs are regarded by respondents as "Moderately Involved" in their quality management procedures for resource management. This score indicates a steady, moderate degree of participation in effective institutional resource management. The moderate variety in the responses, indicated by the standard deviation of 0.64, suggests that although there are some differences in respondents' perceptions, overall agreement is quite consistent.

An IQR of 0.70, below the 1-cut-off point, suggests that respondents strongly agree with one another. Given the narrow range, the middle 50% of replies are quite similar, indicating agreement on HEIs' moderate role in resource management. The CV of 0.14 indicates low relative variability in replies, as it is significantly below the 50% threshold.

The strong agreement is further supported by the low CV value, which shows that respondents' perceptions of the HEIs' resource management strategies are consistent. The mean score, IQR, and CV values taken together show that respondents generally agree that HEIs have a moderate role in efficiently managing their resources.

HEIs seem moderately concerned with resource management, based on the mean score of 3.22. Practices like strategic budgeting, effective resource allocation, frequent audits, and infrastructure and technology investments are some examples of how this involvement might manifest itself. The low CV and IQR values indicate that responders are strongly in agreement with one another. The uniformity of responses suggests that specialists and middle-level managers commonly understand HEIs' role in resource management. According to Anwar and Abdullah (2021), decentralization is positively associated with organizational performance.

According to the data, HEIs actively manage their resources with an emphasis on sustainability, efficiency, and transparency. Regular audits, smart investments in technology and infrastructure, and cooperation with different stakeholders to maximize resource usage are probably part of these initiatives.

Delphi Round Three

The final round instrument included the item from the Delphi round 2 survey that did not reach the consensus, having the CV value of greater than 50% or an IQR value that is greater than 1.

Table 7. *APMO for Round 3 of the Quality Management Practices within HEIs*

Type of Opinion	Opinion
Total Majority Agreements for APMO Questions/Statements	**10**
Total Majority Disagreements for APMO Questions/Statements	**0**
Total Majority Opinions for APMO Questions/Statements	**10**
Average Percent of Majority Questions/Statements	**100%**

Using APMO, the participants agreed that middle-level managers of HEIs must possess a particular set of quality management practices concerning instruction, research, extension and linkages, and resource management. The result of the agreement or disagreement using a dichotomous scale of whether “Agree or Disagree” was subjected to APMO. Consensus during this final round was found to have a universal agreement of 100% from the participants.

IMPLICATIONS FOR THEORY AND PRACTICE

From a theoretical standpoint, this study reinforces and expands on existing frameworks for quality management within Higher Education Institutions (HEIs), particularly in instruction, research, extension, and resource management. The consensus reached by the expert panel, highlighting the importance of continuous curriculum assessments, faculty development, and transdisciplinary research, contributes to the academic body of knowledge on QMP in higher education. By offering a comprehensive framework for developing and implementing QMP strategies, the study supports the growing body of work that advocates for aligning academic programs with industry requirements, fostering innovation, and the emphasis on sustainability in resource management. This theoretical foundation provides a reference for future research, helping to shape and refine the concept of QMP in HEIs and contributing to the evolution of educational theories that incorporate quality and continuous improvement as core components. However, while the theoretical implications are strong, this study also calls for a deeper exploration of the diverse perspectives within QMP. As noted, the reliance on expert opinion in the Delphi Method limits the scope of the findings to the views of a specific group of knowledgeable individuals. This limitation highlights the need for future research incorporating a broader range of voices, including practitioners from different institutional types,

geographical locations, and experiences. By incorporating these diverse perspectives, researchers can further develop and refine QMP frameworks to ensure they are inclusive and applicable across various contexts within HEIs.

Concerning practical application, the study's findings revealed how HEIs can enhance their QMP strategies to improve overall institutional effectiveness. The focus on continuous professional development for faculty, research funding, and collaboration with external partners for transdisciplinary research aligns with best practices in quality management. It can also be directly applied by HEIs to foster innovation and maintain competitive advantages in a rapidly evolving educational landscape. Additionally, the emphasis on community-based extension programs and resource management strategies prioritizing transparency, equity, and sustainability can serve as a model for HEIs striving to meet societal needs while maintaining efficient operations. Moreover, the study's proposed quality management framework for HEIs offers a structured approach to aligning programs, standards, and processes, ensuring consistent and effective implementation of QMP practices. By adopting such a framework, HEIs can better manage their resources, enhance the quality of instruction, and improve their overall contribution to academic and societal development. The practical implications of these findings suggest that a more integrated and holistic approach to QMP, informed by theoretical foundations and real-world practices, can lead to significant improvements in the quality of education and institutional sustainability.

LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

One limitation of this study is the reliance on expert opinion, which, while important, introduces biases that affect the results. The Delphi Method, by design, depends on the insights and judgments of a select group of individuals considered knowledgeable in the field. While the expert panel was chosen based on their expertise in quality management practices (QMP) within Higher Education Institutions (HEIs), their views do not fully capture the entire spectrum of opinions within the field. These experts have shared similar backgrounds, experiences, or institutional contexts, which have influenced their responses in ways that do not necessarily represent the broader diversity of perspectives on QMP. In such cases, their consensus reflects a narrower view, potentially overlooking alternative viewpoints or innovative approaches that could be relevant in enhancing quality management practices.

Furthermore, it is important to consider whether the selected experts represent the full range of diversity within QMP. The panelists in this study have had varying levels of exposure to different aspects of QMP. However, their collective insights could still be limited if they do not reflect the diversity of institutional types, geographical locations, or the experiences of practitioners at different levels within HEIs. For instance, perspectives from administrators in rural versus urban settings, or from institutions with varying resource levels, could yield differing opinions on the feasibility or effectiveness of certain practices. Without a broader range of perspectives, the results do not fully capture the complexities of QMP implementation across all HEIs. The study's findings, particularly the unanimous agreement observed in the final Delphi round, also reflect a convergence towards a middle ground, where more contentious or divergent opinions were smoothed over in achieving consensus. It is possible that alternative views, particularly from practitioners not included in the expert panel, could have led to different conclusions, especially if their experiences with QMP in HEIs diverged significantly from the expert panel's consensus. Thus, it is crucial to acknowledge that the outcomes of this study were shaped by the expert group's specific views, potentially limiting the study's generalizability or applicability to all HEIs.

It can be concluded that continuous improvement through regular curriculum assessments and revisions is a priority for HEIs to maintain compliance with industry requirements and improve the quality of instruction. They place a strong emphasis on faculty members' continuous professional development and encourage research by giving money for conference attendance, team projects, and research supplies. HEIs support transdisciplinary research with outside partners and promote innovation. Extension tactics use relationships with government agencies, businesses, educational institutions and community development projects to address social needs. Transparency, equitable financial distribution, improving infrastructure, and advancing sustainability are the main goals of resource management. A quality management framework may be developed for HEIs that includes strategies to align

programs, standards, and processes to ensure consistent and effective quality management practices.

REFERENCES

Angehrn, A. & Maxwell, K. (2018). Increasing change readiness in higher educational institutions through a simulation-based change 260management experience. *International Journal of Knowledge and Learning. 6.* 162. 10.1504/IJKL.2010.034751.

Anwar, G., & Abdullah, N. N. (2021). The impact of human resource management practice on organizational performance. *International Journal of Engineering, Business and Management (IJEBM), 5.*

Australian Research Council. (2018). *EI 2018 submission guidelines*. Australian Research Council.

Dembereldorj, Z. (2018). Review on the impact of World Higher Education Rankings: Institutional competitive competence and institutional competence. *International Journal of Higher Education, 7*(3), 25. https://doi.org/10.5430/ijhe.v7n3p25

Georghiou, L. (2015). Value of research. *Policy Paper by the Research, Innovation, and Science Policy Experts (RISE).*

Heng, K. (2024). Challenges and developments in university research in Cambodia: A case study of two universities. *Higher Education*, *87*(6), 1593-1613.

Huang, Y.-T., & Xu, J. (2020). Surviving the performance management of academic work: Evidence from young Chinese academics. *Higher Education Research & Development, 39*(4), 704–718.

Lockman, A. S., & Schirmer, B. R. (2020). Online instruction in higher education: Promising, research-based, and evidence-based practices. *Journal of Education and e-Learning Research, 7*(2), 130-152.

Menon, S., & Suresh, M. (2020). Synergizing education, research, campus operations, and community engagements towards sustainability in higher education: A literature review. *International Journal of Sustainability in Higher Education*, *21*(5), 1015-1051.

Nollett, C., Eberl, M., Fitzgibbon, J., Joseph-Williams, N., & Hatch, S. (2024). Public involvement and engagement in scientific research and higher education: the only way is ethics? *Research Involvement and Engagement*, *10*(1), 50.

Northeastern University Graduate Programs Staff (2019). *Top 5 leadership skills for the workplace of tomorrow*. Retrieved from https://www.northeastern.edu/graduate/blog/essential-leadership-skills-fortomorrow/

Pham, D. H. (2021). The professional development of academic staff in higher education institution. *Journal of Teacher Education for Sustainability*, *23*(1), 115-131.

Quitoras, M. C. L., & Abuso, J. E. (2021). Best practices of Higher Education Institutions (HEIs) for the development of research culture in the Philippines. *Pedagogical Research*, *6*(1).

Rosen, S. P. (2017). The future of global aerospace and defense: Implications of international trends for quality. *Future of Quality: Quality Throughout,* 16-21.

Serafini, P. G., de Moura, J. M., de Almeida, M. R., & de Rezende, J. F. D. (2022). Sustainable development goals in higher education institutions: A systematic literature review. *Journal of Cleaner Production*, *370*, 133473.

Weiss, M., Barth, M., & von Wehrden, H. (2021). The patterns of curriculum change processes that embed sustainability in higher education institutions. *Sustainability Science*, *16*(5), 1579-1593.