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# Feasibility Study on Offering Master of Engineering in Romblon State University, Philippines

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**Abstract:** ***The study aimed to determine the participants' profile and their perceptions on the feasibility of offering Master of Engineering with specialization in Biosystems and Agriculture, Civil Engineering, Electrical Engineering and Mechanical Engineering in Romblon State University. Strengths and weaknesses on viability as regards management, market demand, financial and operational aspects of the proposed program were assessed. Using descriptive research, survey questionnaire was used to gather data from 103 participants validated through scrutiny of pertinent documents. Results were further validated in Focus Group Discussion with representatives from DEPEd, LGU and Engineering student-leaders as discussants. The data were analyzed using SPSS software; frequency, average and percentage were employed to describe participants' profile, and weighted mean to assess viability of the proposed program. Results showed that most of the participants were males, 29 years old and below and married. Almost all of them were graduates of engineering course; licensed engineers, some were civil service eligible. Majority has the intention to enroll Master of Engineering. Additional program offerings in the College of Engineering supports the vision, mission and goals of the university. The four engineering specializations like Biosystems and Agricultural Engineering, Civil Engineering, Electrical Engineering and Mechanical Engineering were considered appropriate. The strengths of the proposed program were in terms of very high viability as regards management, market demand of graduates, financial and operational aspects. Based on the study findings, offering of Master of Engineering with any of the four specializations is feasible.***

**Keywords:** Feasibility Study, Master of Engineering, SWOT analysis

## 1. Background of the Study

To provide competent human resource in the Philippines and beyond remains the mandate of higher education institutions in the country. Given the manpower demands from the industries and budgetary resourcesof universities, rationalization of program offerings become a crucial management concern. According to Winters (2014), as budgets become increasingly strained with every passing year, higher education institutions are turning to market research firms to investigate the viability of their current and potential academic programs. Many institutions require feasibility research as part of the program approval process and for good reason.

Also, the Commission of Higher Education requires feasibility study on proposed program offering. Hofstrand, and Clause (2009) stressed that the basic premise of a feasibility study is to determine the potential for success of a proposed business venture. Considering academic programs, Balingbing (2014) claimed that the world needs to offer educational programs that will prove to be beneficial for the society.

According to De Luna and Motin (2015) with the inevitable challenges posited externally like amalgamation, ASEAN 2015, climate change among others, the University is pressed to renew the time-honored core values and commitment to persistently strive for a "cut above" relevant learning inputs to clienteles across disciplines. The commitment resonates the mandate of the University in producing professional leaders in advanced education, sciences and technology, information technology, agriculture, fisheries and forestry through applicable programs and instructions and sustaining accreditation processes across campuses. It also includes menu in providing fair and affordable access to higher learning and new ideas based on the needs and prevailing demands in the global market.

To pursue program quality, CHED issued specific Memo for each engineering program (CMO 34 S. 2007 for BSABE, CMO 29 S. 2007 for BSCE, CMO 34 S. 2008 for BSEE and CMO 9 S. 2008 for BSME) with the end view of keeping apace with the demands of global competitiveness. The engineering programs are designed to produce graduates who possess knowledge and skills in the application of engineering principles for various areas identified by the program.

In the case of the Romblon State University (RSU), the above claim on quality programs was spelled out through program accreditation by the Accrediting Agency of Chartered Colleges and Universities (or AACCUP) in which all engineering programs of the College of Engineering and Technology (CET) were granted Level III re-accredited status. The school continuously submits for evaluation its systems, processes of implementations and outcomes, the results of which become inputs for enhancement framework.

Based on institutional mandate, *"Romblon State University is committed to provide advance education, higher technological, professional instruction and training in agriculture and fishery, forestry, science and technology, education, arts and other relevant fields of study. It shall undertake research & extension services, and provide progressive leadership in its areas of specialization" (RA No.9721, Sec.2, 2009),* the College of Engineering and Technology thus, proposed to offer the Master of Engineering Program in support of the intuitional philosophy of the school in accordance with its Charter, RA 972, upholding the humanistic philosophy of education

particularly on enhancing the individual's potentialities to the optimum.

Since 1990, the college had produced engineers in the field of Agricultural Engineering, and in the fields of Civil Engineering, Electrical Engineering, and Mechanical Engineering in 2001. Results of tracer study (Forlales, et.al. 2017) indicated that the employment rate of graduates of these program were 84.6%, 88.6%, 100%, and 91.2% respectively which means that the program outcomes are highly needed in the community.

With this scenario, the initiative of offering Master of Engineering (MEng)with specialization in the four engineering programs offered in the university will provide engineering graduates opportunities for Continuous Education Program (CEP) and will make them more attractive in the field of employment. The general objective of Master of Engineering is to develop further the students in the application of engineering theories and principles as they engage themselves in various business opportunities and challenges in the industry in the local community and elsewhere. It offers advanced research and management cases that may enhance students' skills apart from their technical expertise. The program is facilitated by qualified faculty-practitioners who are competent to provide the students sufficient grounds in theory and practice. It is so designed to integrate the theories with project-based researches and actual modeling programs along with outcomes-based curriculum.

The beneficiaries of the program will be prepared for further study towards a doctoral program which may be offered sooner or later in the college. The proposal is in support of the general objective of university which is to implement a wide range of curricular programs with instruction, research, extension and production as essential components.

## 2. Objectives of the Study

The main objective of the study was to determine the feasibility of offering Master of Engineering with specialization in Biosystems and Agriculture, Civil Engineering, Electrical Engineering and Mechanical Engineering in Romblon State University. The specific objectives were:

1) To determine the profile of the participants in terms of:

1.1) Personal characteristics;
1.2) Undergraduate course;
1.3) Eligibility
1.4) Agency Affiliation
1.5) Position in current job;
1.5) Intention to enroll Master of Engineering

2) To determine the strengths and weaknesses in offering Master of Engineering program in Romblon State University in terms of:

2.1) Management viability;
2.2) Market demand viability;
2.3) Financial viability and
2.4) Operational aspects.

3) To determine whether or not offering Master of Engineering at Romblon State University is feasible.

## 3. Significance of the study

The College of Engineering and Technology management staff will be provided with information essential in making decision as to whether or not offering Master of Engineering is feasible in the Romblon State University.

The output of this study will serve as supporting documents of the proposal to the RSU Academic Council and finally to CHED MIMAROPA as regards offering of Master of Engineering being pursued by the College of Engineering and Technology.

The result of this study would be helpful for the graduates of engineering programs in Romblon and nearby places basically in decision making with regards to development of their professional career.

The potential graduates of the engineering programs can use the result of this study to strategically prepare themselves professionally in terms of acquiring continuous education and gainful employment. Future Accreditation Team who may visit CET can have an objective evaluation on program offerings through the output of this study. Accrediting Agencies for quality assurance like AACCUP and RQUAT will be provided with additional information that will help them in organizing more strategic recommendations.
The program planners of higher education institutions and the Commission on Higher Education will be provided with systematic information for proactive decision making as regards relevant program offerings as well as responsive budgetary allocations among State Universities and Colleges.

**Scope of the Study**

The study focused on the feasibility of offering Master of Engineering in the College of Engineering and Technology, Romblon State University. It was conducted in January-April 2018 at RSU Odiongan Campus. The participants were delimited to the stakeholders inside and outside of the university who were able to answer the survey questionnaires.

## 4. Review of Related Literature

Feasibility study has become an imperative approach to evaluate possible program offering in higher learning institutions. In fact the Commission in Higher Education requires feasibility study of every program proposed to be offered in colleges and universities in the country.

In the context of quality pursuit, vertical articulation in program offerings is wanting. Ylagan and Motin (2015) revealed that in 2013, only about 16% full-fledged doctorate degrees and 31% full-fledged masters' degrees. This figure is still low beyond the faculty requirement of the Commission on Higher Education to all universities to have at least 40-60 percent ratio of doctorate and masters' degree. In three years, it is expected to have ~25% full-fledged doctorates degree, ~64% full-fledged masters, degree and

~10% with college degrees. RSU being the lone University in the province is tasked to provide continuous education program among the students.

Balingbing (2014) Not only is it important to offer educational programs that meet the needs of today and also meet the predicted demands of tomorrow, but it is more important to ensure that the programs are of good quality. The developed world knows the importance of accredited programs and recognized credentials. It is of paramount importance that educational programs that are offered should be recognized and the institutes should work towards getting these accredited since that consumes time and efforts. Furthermore, all educational institutes: schools, colleges and universities must make continuous improvements in the degree programs they already offer, accredited or not. It is also important that the overall delivery of education be improved from all aspects.

According to Winters (2014), as budgets become increasingly strained with every passing year, higher education institutions are turning to market research firms to investigate the viability of their current and potential academic programs. Many institutions require feasibility research as part of the program approval process and for good reason.

Isidro & Cruz (A feasibility study on offering additional course for Engineering in La Consolacion University Philippines was conducted by Laila May Isidoro & Jane Tricia Cruz This study aimed to investigate engineering as a potential course that can be offered by La Consolacion University Philippines as it tends to cater the needs of the students in choosing specific fields particularly in engineering. The study used descriptive method utilizing questionnaire as its research design based from the data provided by senior high school students of Main and Barasoain Campus. Findings revealed that Civil Engineering course among the various fields in engineering is most feasible.

Winters (2014),revealed that Research and Marketing Strategies, Inc. routinely conducts feasibility studies and have learned that there are several factors to consider when implementing program feasibility research. First and foremost, NOT conducting program feasibility research is often more expensive than the market research investment. Many times-an internal stakeholder with a vested interest wants to create a new program, but feels that research is not necessary or has the perception that market research will be too costly. The danger in this approach is that the college will be offering a program that may not fit into current and projected labor market needs. This sets the graduates up for disappointment when they try to enter a saturated workforce.

This approach also means that substantial financial resources will be attributed to the creation of a new academic program without the back up support that market research can provide, in turn jeopardizing the credibility of the college and its offerings. It is for these reasons that many colleges and universities are turning to market research firms as part of their initial scoping activities for new programs. He mentioned few approaches recommended to clients undertaking feasibility studies.

However, according to Hofstrand and Clause (2009) not all feasibility studies are alike. The elements to include in a feasibility study vary according to the type of business venture analyzed and the kind of market opportunities identified. The success of a feasibility study is based on the careful identification and assessment of all of the important issues for business success. Depending on the business project, additional items may also be important. After the feasibility study has been completed and presented to the leaders of the project, they should carefully study and analysis the conclusions and underlying assumptions.

## 5. Theoretical and Conceptual Framework of the Study

The conduct of this study is supported by the Human Capital theory of Johann (1993). The theory provides that formed education is highly instrumental to the improvement of the productive capacity of the population. It assumes alsothat the most efficient path to human resource development is through education. The contention is; the more education is gained by persons, the more competent they are, thereforethe more productive they become.

The conceptual framework (Figure 1) of the study follows the input, process, output (IPO) model. The input includes the characteristics profile of internal and external participants, CHED CMOs, RSU mission and mission statements, CET faculty profile, participants' assessment on program viability in terms of management, market, financial and operational aspects; while the processes consists of collating survey data, document evaluation, focus group discussion and SWOT Analysis. The output points to the feasibility of offering Master of Engineering in the university.

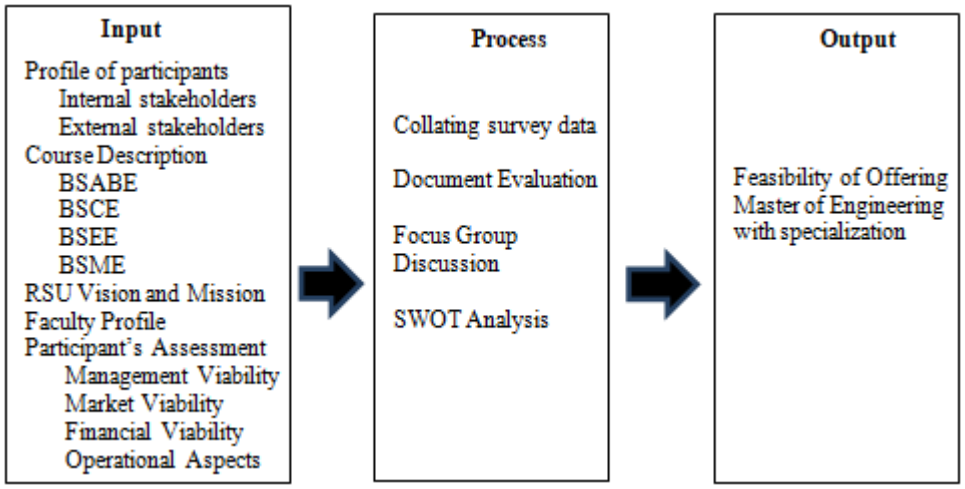


**Figure 1:** Variables and Conceptual Framework of the Conduct of the Study

## 6. Definition of Terms

To have better understanding of this study the following terms are operationally defined:

- **External stakeholders** refers to the employees of both government and private agencies in Tablas island where Romblon State University is located, who were able to answer the survey questionnaires.
- **Faculty profile** refers to the descriptive data relating to the teaching employees at the College of Engineering including academic qualification, area of specialization and other professional development.
- **Feasibility study** refers to an activity geared towards assessment of the potential or success of offering Master of Engineering at the Romblon State University.
- **Financial viability** refers to the cost of taking the course among the students as well as the financial sustainability of the college to offer the program.
- **Focus group discussion (fgd)** refers to the strategy of gathering data through formal interview with a panel of discussants. Prepared questions on viability of Master of Engineering at RSU, were discussed one at a time by the panel. SWOT analysis about offering of the proposed program was included.
- **Internal stakeholders** refer to the employees of the Romblon State University who were able to answer the survey questionnaires. All graduates of engineering course employed in the university were considered.
- **Management viability** refers to the capacity of the school particularly the College of Engineering and technology to plan, organize, lead and monitor the resources pertinent to offering of MEng.
- **Market viability** refers to the sustainability of the proposed program in terms of enrollment and the demand in the employment of the graduates.
- **Operational aspect viability** refers to the physical condition of the school in terms of accessibility and transportation including physical facilities.

## 7. Methodology

The descriptive research design was employed since the purpose of the study was to obtain facts and present the current data on strengths and weaknesses of Romblon State University to offer Master of Engineering (Calmorin and Calmorin 2005). Survey and Focus Group Discussion (FGD) were both employed to attain the objectives of the study.

Survey questionnaire was used to gather the data. It has two parts, one for participants' profile and another for assessment on viability of Master of Engineering Program in the Romblon State University in terms of management, market, financial and operational aspects. The final draft of the questionnaire was presented to experts for validation and refinement and finally enough copies were printed. Permits to administer the instrument was sought from heads of agencies representing the target participants. The questionnaires were administered personally by the researcher to the target participants although some were by her student assistants. Participants for the survey were 30 employees of the RSU to represent internal assessment and 73 graduate-employees from other agencies to represent external assessment. Graduates of engineering courses were considered most in both groups of participants.

Focused group discussion was conducted to validate data and discuss the strengths and weaknesses of the university as regards offering of Master of Engineering. Representatives from various educational sectors of the community were invited to compose the panel of discussants. Relevant documents were examined to attain the objectives of the study. Among others, these were documents pertinent to RSU mission and goals, CET tracer studies, academic programs, and faculty profile of the university. The data were analyzed using software Statistical Package for Social Research (SPSS 11.5), frequency, average and percentage to describe participants' profile, mean average to assess viability of the proposed program.

## 8. Results and Discussions

**On Profile of the Participants' Personal Characteristics**

The profile of internal participants in terms of personal characteristics is shown in Table 1.It shows that majority of the participants are males being 80% and only 20% are females.

**Table 1:** Profile of the participants in terms of personal characteristics

| **A. Sex** | Frequency | Percentage |
|---|---|---|
| Male | 69 | 67 |
| Female | 34 | 33 |
| TOTAL | 103 | 100 |
| **B. Age** | Frequency | Percentage |
| 50 and above | 30 | 29.1 |
| 40-49 | 12 | 11.7 |
| 30 - 39 | 28 | 27.2 |
| 29 and below | 33 | 32.0 |
| TOTAL | 103 | 100 |
| **C. Civil Status** | Frequency | Percentage |
| Single | 33 | 32 |
| Married | 68 | 66 |
| Others | 2 | 1.9 |
| TOTAL | 103 | 100 |

For the age, 33% of the participants are 29 years old and below, 28% are in age bracket 30-39, some 12% in age bracket 40-49 and 30% are 50 years old and above. Considering civil status, 68% of the participants are married, 33% are single and some other being 2%.

**On Profile of the Participants' Course and Eligibility**
Table 2 reflects the profile of the participants in terms of course they graduated and the eligibility acquired.

**Table 2:** Profile of the participants in terms of course and eligibility acquired

| A. Course | Frequency | Percentage |
|---|---|---|
| BSAgEn | 22 | 21.4 |
| BSCE | 41 | 39.8 |
| BSEE | 13 | 12.6 |
| BSME | 8 | 7.8 |
| Others | 19 | 18.4 |
| TOTAL | 103 | 100 |
| B. Eligibility | Frequency | Percentage |
| Engineering Licensure exam | 60 | 58.2 |
| Civil Service | 32 | 31.1 |
| Others | 11 | 10.7 |
| TOTAL | 103 | 100 |

Regarding the course taken by the participants, BSCE has most number which is 39.8 %, followed by BSagEn, BSEE and BSME with 21.4%, 12.6% and 7.8 % respectively. Some others constitute 18.4% in the distribution.

For the participants' eligibility acquired, 58.2% has engineering licensure eligibility, 31.1% are civil service eligible while some 10.7% are for other eligibilities.

**On Agency Affiliation and Current Position of Participants**
Table 3 shows participants' profile in terms of employers and positions occupied during the conduct of the study.

**Table 3:** Agency affiliations and positions of the participants

| A. Agency affiliations | Frequency | Percentage |
|---|---|---|
| Government | 92 | 89.3 |
| Non-government | 11 | 10.7 |
| TOTAL | 103 | 100 |
| B. Positions | Frequency | Percentage |
| Top managers | 3 | 2.9 |
| Middle managers | 17 | 16.5 |
| Rank and file | 83 | 80.6 |
| TOTAL | 103 | 100 |

It shows that 89.3% of the participants were affiliated with government agencies while 10.7% were with non-government agencies; most were occupying rank and file positions, although 2.9% were in top management positions and 16.5% in middle management positions.

**On the participants' intention to enroll Master of Engineering**
Table 4 is the distribution of the participants in terms of intention to enroll Master of Engineering.

**Table 4:** Participants' intention to enroll Master of Engineering

| Intention to enroll | Frequency | Percentage |
|---|---|---|
| Yes | 63 | 61.1 |
| No | 38 | 36.9 |
| Undecided | 2 | 2.0 |
| TOTAL | 103 | 100 |

Among the 103 participants, 61.1% has intention to enroll Master of Engineering, some 36.9% has no intention to enroll; while 2% were undecided during the conduct of the study.

**On Description of the course**
The program is be called Master of Engineering (M.Eng). It is a non-thesis, practicum oriented Master's Degree in engineering which requires industry immersion. The practicum is a terminal requirement where a trainee should get hands-on experiences on particular training area, determine an existing company problem and formulate solutions. The Master's Degree student should submit a Technical Paper on the Research Project conducted as a final output of the Practicum. The areas of expertise shall include the following: 1) M.Eng with specialization in Biosystem & Agricultural Engineering, 2) Master of Engineering with specialization in Civil Engineering, 3)Master of Engineering with specialization in Electrical Engineering and 4) Master of Engineering with specialization in Mechanical Engineering.

The general objective of Master of Engineering is to develop further the students in the application of engineering theories and principles as they engage themselves in various business opportunities and challenges in the industry in the local community and elsewhere. The program shall offer advanced research and management cases that may enhance students' skills apart from their technical expertise. The program shall be facilitated by qualified faculty-practitioners who are competent to provide the students sufficient grounds in theory and practice. It is so designed to integrate the theories with project-based researches and actual modeling programs.

In the presentation of the description of the proposed program with the four specializations during the focus group discussion, CET Dean Dr. Bilshan F. Servanez, spelled out that the undergraduate programs of the various specializations of proposed M.Eng had produced several graduates since the offering, most of whom were gainfully

employed in the local community and abroad. Some were pursuing postgraduate program in some universities outside the province.In addition the researcher informed the discussants about tracer studies conducted.

The conduct of Tracer Study of Graduates of Engineering Programs of CET (Forlales, et.al. 2017) showed that since 1990, the college had produced engineers in the field of Agricultural Engineering, and in the fields of Civil Engineering, Electrical Engineering, and Mechanical Engineering in 2001. Findings indicated that the employment rate of graduates of these programs were 84.6%, 88.6%, 100%, and 91.2% respectively which means that the program outcomes are highly needed in the community.

With the information, DEPEd supervisor Mr. Dario Manato suggested to offer the program in his pronouncements when he said (unedited);

*"It is very timely to offer the course so that most of our graduates can continue their dreams of taking Master's degree which will be very useful in landing a job especially in other agencies where MS graduates are the priority. Start now, do it now. If you will not pursue this, when will it be? As the Dean, do the actual and not only by talking. Discover the reality in offering this program and also include Sanitary Engineering as an additional program"*

The panel subscribed to Mr. Manato's statements. Basically this means that graduate programs must be made available and accessible to all the students since it is found relevant.

**On Institutional Mandate**

The operation of Romblon State University is based on its institutional philosophy quoted as:

"*The University as a state institution shall administer its affairs in accordance with its Charter, RA 9721 and with the general laws of the country in so far as they are applicable. The University upholds the humanistic philosophy of education. It is therefore committed to: a) Enhance the individual's potentialities to the optimum; b) Promote physical, intellectual, social, emotional and spiritual well-being of the youth; c) Recognize the learner as the center of pedagogical efforts; and d) Transform the educated individual to become a man for others."*

Regarding the above mentioned framework, the school envisioned "*Romblon State University as a premier Institution of higher education in the MIMAROPA Region for a globally competitive Province of Romblon".*

In support of the vision and goals of the university, the academic institution is mandated to hold on the mission statementas quoted:

*"Romblon State University is committed to provide advance education, higher technological, professional instruction and training in agriculture and fishery, forestry, science and technology, education, arts and other relevant fields of study. It shall undertake research & extension services, and provide progressive leadership in its areas of specialization" (RA No.9721, Sec.2, 2009).*

The current president of the university reiterated that the inevitable challenges posited externally like amalgamation, ASEAN 2015, climate change among others, the University is pressed to renew the time-honored core values and commitment to persistently strive for a "cut above" relevant learning inputs to clienteles across disciplines. The commitment resonates the mandate of the University in producing professional leaders in advanced education, sciences and technology, information technology, agriculture, fisheries and forestry through applicable programs and instructions and sustaining accreditation processes across campuses. It also includes menu in providing fair and affordable access to higher learning and new ideas based on the needs and prevailing demands in the global market (De Luna and Motin (2015).

It is along this mandate that the College of Engineering and Technology considered the agenda of enhancing the program offerings based on vertical articulation thus, proposes to offer the Master of Engineering Program.

**On Management Viability**

Table 5 shows the participants' assessment on management viability.

**Table 5:** Perceived management viability of Master of Engineering program

| Management Viability | Internal | | External | | Ave | |
|---|---|---|---|---|---|---|
| | Mn | DI | Mn | DI | Mn | DI |
| 1) Qualification of the faculty to handle subjects in Master of Engineering program. | 3.45 | Vh | 3.09 | H | 3.27 | Vh |
| 2) Administrative and management competence of the College of Engineering. | 3.38 | Vh | 3.15 | H | 3.27 | Vh |
| Total | 3.42 | Vh | 3.12 | H | 3.27 | Vh |

Legend: Mean (Mn) Descriptive Interpretation (DI)
Strength: High – Very high
3.26- 4.0 Very high (Vh) Weakness: Low- Very Low
2.51-3.25 High (H)
1.76-2.50 Low (L)
1.0-1.75 Very Low

Management viability of the proposed program is in consideration of the qualifications of the faculty members who will be assigned to handle the subjects of the program, as well as the management competence of the college in particular and the university in general.

Faculty qualification obtained a mean of 3.45 for the internal stakeholder and 3.09 for external stakeholders. This resulted to an average of 3.27 which means *very high*. Regarding administrative and management competence of the college, it obtained a mean of 3.38 and 3.15 for internal and external stakeholders respectively. This got an average of 3.27 which means *very high*; thus the total mean of 3.27 interpreted as *very high*. Consequently, management viability was considered strength of the proposed program.

This was validated by the discussants during Focus Group Discussion (FGD) conducted by the researcher which was attended by officials in DEPEd, representatives from Sangguniang Bayan, LGU-Barangay Council and students.

The seven participants assessed positively the management viability of the proposed program. In fact, this area was categorically pronounced by the panel as strength of the college.

Functional faculty development program of the college producing Masters and Ph.D. graduates of the program from prominent universities in the country contributed much to the survey results. The CET faculty profile proved such findings considering that CET has complied with AACCUP recommendation on faculty development. The current re-accredited Level III status of the BSABE, BSCE, BSEE and BSME undergraduate programs in the college proved this results. The college in manned by highly qualified staff. The dean and department chairpersons are licensed engineers and doctorate and master's degree graduates with vertically aligned specializations. The university's continuous initiative in prioritizingfaculty and staff development is counted as strength of the college.

**On Market Viability**

In terms of market viability, data in Table 6 shows that the demand of the industry for MEng in the next 5 years obtained 3.62 and 3.42 for internal and external stakeholders respectively with an average of 3.52 which means *Very high.* Employment opportunities for Master of Engineering graduates in Romblon and elsewhere was *Very high* for both internal and external stakeholders with 3.43 average mean. Promotion forecast for Master of Engineering graduates in government and private agencies got 3.41 average mean which means *Very high* also. Graduates of engineering interested to pursue Master of Engineering at RSU obtained mean of 3.21 and 3.18 for internal and external stakeholders respectively with an average of 3.19 which means *High.* This result is parallel to the 61.1% participants who were willing to enroll the course (Table 4).

The total average mean of 3.39 described market viability for the proposed MEng as very high; and therefore regarded as strength of the college. In the Tracer Study of Graduates of Engineering Programs of the College of Engineering and Technology (Forlales, et.al. 2017), the employment rate of graduates of BSABE, BSCE, BSEE and BSME were 84.6%, 88.6%, 100%, and 91.2% respectively which means that the program outcomes were highly needed in the community.

**Table 6:** Perceived market viability of Master of Engineering Program

| Market Viability | Internal | | External | | Ave | |
|---|---|---|---|---|---|---|
| | Mn | DI | Mn | DI | Mn | DI |
| 1) The demand of the industry for Master of Engineering in the next 5 years. | 3.62 | Vh | 3.42 | Vh | 3.52 | Vh |
| 2) The employment opportunities for Master of Engineering graduates in Romblon and elsewhere. | 3.52 | Vh | 3.34 | Vh | 3.43 | Vh |
| 3) Promotion forecast for Master of Engineering graduates in government and private agencies. | 3.48 | Vh | 3.33 | Vh | 3.41 | Vh |
| 4) Graduates of engineering interested to pursue Master of Engineering at RSU. | 3.21 | H | 3.18 | H | 3.19 | H |
| TOTAL | 3.46 | Vh | 3.32 | Vh | 3.39 | Vh |

Legend: Mean (Mn) Descriptive Interpretation (DI)
Strength: High – Very high
3.26- 4.0 Very high (Vh) Weakness: Low- Very Low
2.51-3.25 High (H)
1.76-2.50 Low (L)
1.0-1.75 Very Low

As work standards are becoming more competitive the demand for Master's and Doctorate degree holders in Engineering with specialization in BSABE, BSCE, BSEE and BSME would address the issue. This matter was very well deliberated in the focus group discussion conducted pertinent to this study. No less than DEPEd supervisor Mr. Manato claimed that the demand for Master's degree in engineering had been continuously increasing because of ASEAN integration and issues of competition in the global perspective which was attested by CET dean Dr. Bilshan Servañez and the rest of the discussants. The Dean explained that the engineers produced by RSU should become ASEAN engineers so that they can work anywhere in ASEAN nations.

In addition, the existing framework of verticalization in professional development observed by SUCs poses a leap in the demand of postgraduate programs like Master of Engineering with any of the specializations.

During the focus group discussion, the principal of Odiongan National High School Mr. J.N. Machon made an interesting remarks as quoted(unedited);

*"From elementary, the learners had the choice of their future course. They should focus in their specialization. We have to motivate them, encourage students to have good jobs so that they can build a family and serve our own country".*

Also, DEPEd supervisor Mr. Manato suggested to offer the program in his pronouncements when he said (unedited);

*"It is very timely to offer the course so that most of our graduates can continue their dreams of taking Master's degree which will be very useful in landing a job especially in other agencies where MS graduates are the priority. Star now, do it now. If you will not pursue this, when will it be? As the Dean do the actual and not only by talking. Discover the reality in offering this program and also include Sanitary Engineering as an additional program"*

Basically this means that graduate programs must be made available and accessible to all the students since it is found relevant.

**On Financial Viability**

Financial viability in terms of two factors like "Affordable cost of graduate courses in Romblon State University" and "Support of local government towards staff/employee

development programs" were looked into. Table 7 presents the assessment of financial viability of the proposed engineering program.

**Table 7:** Perceived financial viability of Master of Engineering Program

| Financial Viability | Internal | | External | | Ave | |
|---|---|---|---|---|---|---|
| | Mn | DI | Mn | DI | Mn | DI |
| 1. Affordable cost of graduate courses in Romblon State University. | 3.57 | Vh | 3.29 | Vh | 3.43 | Vh |
| 2. Support of government and private employers towards staff/ employee development programs. | 3.30 | Vh | 3.11 | H | 3.21 | H |
| TOTAL | 3.44 | Vh | 3.20 | H | 3.32 | Vh |

Legend: Mean (Mn) Descriptive Interpretation (DI)
Strength: High – Very high
3.26- 4.0 Very high (Vh) Weakness: Low- Very Low
2.51-3.25 High (H)
1.76-2.50 Low (L)
1.0-1.75 Very Low

Regarding affordable cost of graduate courses in Romblon State University, both internal and external stakeholders perceived it as *very high* with a mean of 3.57 and 3.29 respectively with 3.43 average mean.

Support of employers to staff/employee development programs was perceived as *High* with 3.21 average mean. With a total average mean of 3.32, financial viability of MEng is *very high* and one of the strengths of the CET.

During the conduct of focus group discussion, ONHS school principal J.N. Machon reiterated that being the lone University in the province, RSU remains the catchment basin for the graduates of their school and so pursuing Master's degree in the university RSU is cheaper not only in school fees but also over subsistence of the students. The standard of living in the province is low. The CET student leader in the panel Mr. Mark Jay Garcia subscribed to the claim together with other representatives. Ultimately, this becomes an opportunity for the proposed program.

**On Operational Aspects Viability**

There were three factors considered such as; "Accessibility of the graduate school", "Availability of transportation facilities" and "Instructional facilities of RSU for of the Master of Engineering Program". Data in Table 8 presents that viability in terms of accessibility of the graduate school and availability of transportation were rated *very high*, with average mean of 3.53 and 3.44 respectively.

**Table 8:** Perceived operational aspects viability of Master of Engineering

| Operational aspects Viability | Internal | | External | | Ave | |
|---|---|---|---|---|---|---|
| | Mn | DI | Mn | DI | Mn | DI |
| 1. Accessibility of the graduate school. | 3.73 | Vh | 3.32 | Vh | 3.53 | Vh |
| 2. Availability of transportation facilities. | 3.60 | Vh | 3.29 | Vh | 3.44 | Vh |
| 3. Instructional facilities of RSU for of the Master of Engineering Program. | 3.17 | H | 2.92 | H | 3.04 | H |
| TOTAL | 3.50 | Vh | 3.18 | H | 3.34 | Vh |

Legend: Mean (Mn) Descriptive Interpretation (DI)
Strength: High – Very high
3.26- 4.0 Very high (Vh) Weakness: Low- Very Low
2.51-3.25 High (H)
1.76-2.50 Low (L)
1.0-1.75 Very Low

However, as to instructional facilities of RSU for the MEng program, both internal and external stakeholders gave a mean of 3.17 and 2.92 respectively which means *High*. A total average mean of 3.34 means that operational aspects viability was still very high.

To attest the result, the 1,267 meter concrete pavement network was constructed through the support of CHED-DAP fund to improve school accessibility and solve perennial problem on rough road network in main campus that turns muddy during rainy season and dusty at summer times (De Luna & Motin, 2015).

Two years ago, Ylagan & Motin (2015) identified some strengths of the university like existence of library system, laboratory structure and facility. However, the weaknesses were aging and obsolete facilities, dilapidated buildings and scarce resources to maintain and improve facilities, no subscription to and remote access to online database and journals, limited library collections, and inappropriate lab supplies and equipment.

Considering Ylagan and Motin's (2015) findings, the fast changing technology, and the millennial generation characteristics would become threats if the school fail to strengthen the weaknesses identified.

Tablas island particularly Odiongan municipality where RSU College of Engineering and Technology is located has undoubtedly become more developed than 5 years ago. According to De Luna & Motin (2015) the island plays important roles in the province's development. It is the center of business and trade. Ylagan & Motin (2015), the provincial plan to develop tourism industry is hoped to open economic opportunities.

Summary of assessment on viability of proposed Master of Engineering is in Table 9.

**Table 9:** Summary of Assessment on Viability of Master of Engineering

| Indicators | Mean | Gaps | DI | Remarks |
|---|---|---|---|---|
| Management Viability | 3.27 | 0.73 | Very high | strength |
| Market demand Viability | 3.39 | 0.61 | Very high | strength |
| Financial viability | 3.32 | 0.68 | Very high | strength |
| Operational Aspects Viability | 3.34 | 0.66 | Very high | strength |

Legend: Mean Descriptive Interpretation (DI)
Strength: High – Very high
3.26- 4.0Very high (Vh) Weakness: Low- Very Low
2.51-3.25 High (H)
1.76-2.50 Low (L)
1.0-1.75 Very Low

Results showed that in terms of management, market demand for the graduates, financial and operational aspects, the viability is very high. The results were considered strengths of the program. However, there were gaps towards

total quality assurance of all the indicators. This means that the strengths of the proposed program needs to be enhanced further to attain total quality outcomes.

## 9. Conclusions

Based on the results of the study, the following conclusions are made:

1) Most of the participants are males, 29 years old and below and majority are married.
2) Almost all participants are graduates of engineering course; majority are licensed engineers, some are civil service eligible and majority of them intends to enroll Master of Engineering.
3) Expansion of program offerings in the College of Engineering supports the mandate of the university.
4) The four engineering specializations: Biosystems and Agricultural Engineering, Civil Engineering, Electrical Engineering and Mechanical Engineering are appropriate.
5) In terms of management, market demand of graduates, financial and operational aspects, the viability is very high.
6) Offering of Master of Engineering with any of the four specializations is feasible.

## 10. Recommendations

Based on the findings and conclusions of the study, the researcher arrived at the following recommendations:

1) Include Master of Engineering with specialization in Biosystems and Agricultural Engineering, Civil Engineering, Electrical Engineering and Mechanical Engineering in the program offered particularly at the College of Engineering and technology.
2) Continuous strengthening of facilities of the university in terms of instruction, research and extension giving priority on laboratory and physical facilities to address gaps towards assurance of total quality outcomes..
3) Continuous faculty development and hiring of additional faculty for CE, EE and ME departments.
4) Regular conduct of tracer study among the graduates of the four engineering programs.

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