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Research Article

Assessment of the Perceived Impact of Extension Activities and Services: A Basis for Extension Sustainability for the Civil Engineering Program in a State College in the Philippines

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ABSTRACT

Extension activities and services aim to provide necessary assistance to the community in addressing their needs. As one of the four-fold functions, higher education institutions are mandated to conduct programs that would help the community towards societal, economic, and environmental transformations. This study is an evaluation research of the perceived impact of the extension activities and services conducted by the civil engineering programs of the Camarines Sur Polytechnic Colleges, Philippines for 2016-2018. The extension activities and services are categorized into skills training, advocacy, and outreach programs. The civil engineering program faculty extensionists evaluated the extent of extension activities and service implementation. Data on the assessment of outcomes and impact were solicited from the beneficiary respondents for skills training, advocacy, and outreach programs. The social, economic, and environmental aspects were considered to determine the impacts of the extension services and activities. Results found that the extent of implementation was fully implemented. On the outcomes of skills training, indicators were agreed upon by the respondents, while advocacy and outreach programs were strongly agreed upon. Along with the impact of skills training, social and economic aspects were evaluated as strongly agree and agree, respectively. On the impact of advocacy and outreach programs, social and economic aspects were strongly agreed. Also, findings showed that the outcomes of skills training have no relationship to social and economic impacts. In contrast, advocacy and outreach programs have a relationship with the social and environmental impacts. Recommendations were proposed to enhance the civil engineering programs' extension services and activities further.

Keywords: perceived impact, impact study, assessment, extension, outcomes, implementation

INTRODUCTION

Higher Education Institutions or HEIs, particularly State Universities and Colleges (SUCs), are committed to fostering quality education through its four-fold function, namely instruction, research, extension, and production (Medina, 2019). Community extension services, as part of the functions of higher education institutions, respond to the community's needs. These services may be in any form, such as skills training, advocacy programs, community outreach activities, technical consultations, technology transfers, and others.

Community issues cannot be resolved solely by local government officials or residents; they require the involvement of a knowledge-based sector—such as the epistemic community and the academe—to provide a scientific diagnosis of the underlying problems (Dilao, 2011). Addressing these issues effectively begins with a comprehensive needs assessment, which helps identify the specific concerns that the academic sector can meaningfully respond to and support.

The Commission on Higher Education (CHED) Memorandum Order No. 52, series of 2016, established pathways to promote equity, relevance, and advancement in research, innovation, and extension within higher education. According to the memorandum, extension programs in higher education institutions serve as platforms for developing practical, evidence-based, and science-driven solutions to address the real-world social, economic, and environmental challenges faced by partner communities. By generating knowledge and innovation, higher

education institutions play a vital role in strengthening community engagement. This extension policy reinforces the commitment to sustainable community development through meaningful partnerships between academia and society.

Extension engagement is the heart of community engagement. Through extension services, SUCs could extend and actualize the knowledge of the university through insightful research to the community's people or beneficiaries (Medina, 2019). This extension engagement needs careful planning before conducting any activities.

Modes of delivery of extension programs vary per HEI. This may be due to differences in institutional policies regarding extension activities and services. Some delivery strategies emphasize student involvement in supporting local organizations, while other strategies involve faculty and staff programs to address community development through livelihood and technical training, social service, public health, educational cohorts, consultations, and the direct application of research and development output (Llenares & Deocaris, 2018).

To institutionalize all community extension activities, an Extension Services Office was established as a platform for faculty, students, and personnel to share their resources and expertise, and actively participate in community engagement initiatives. Guided by the principles of self-support, self-reliance, self-sustainability, and self-propulsion (Rubio et al., 2016), the community extension service fosters meaningful collaboration with partner communities. Through their participation, well-planned programs and activities can be developed to effectively address local needs, particularly those related to sustainable community development.

The Camarines Sur Polytechnic Colleges (CSPC) has been actively extending community extension work for a long time. Impact studies have been conducted in the institution to understand further how the extension services and programs of CSPC are being implemented and how these impact the communities (Terano, 2023; Aquino, 2023; Salazar, 2020). This is to ensure the achievement of one of its goals to improve the quality of lives through the conduct of demand-driven and research-based extension services. For the past years, the CSPC has gone through various partnerships with the communities, not just in the Municipality of Nabua but throughout the Rinconada area. With this partnership, many extension works were accomplished that uplifted the quality of life and the development of the communities in the various barangays in the Rinconada area.

OBJECTIVES

Through extension activities and services, it is important to determine the impact of these activities on the beneficiaries. Thus, this study aimed to assess the perceived impact of the civil engineering program's community extension activities and services. The result of this study can guide the civil engineering program on how they can further enhance the implementation and sustainability of their extension activities and services.

METHODS

Research Method. This study employed evaluation research, also known as program evaluation. Evaluation research is a systematic and disciplined form of inquiry aimed at assessing or appraising an object, program, practice, activity, or system to generate information that supports informed decision-making (Kellaghan, 2010). It involves a structured analysis of the value and effectiveness of the resources invested in a project or specific objective. Typically, it utilizes social research methods to collect and analyze data related to organizational processes and outcomes (Evaluation Research Design, 2020).

This research utilized mixed methods of quantitative and qualitative research. For the quantitative methods, a survey through questionnaires was used to gather data on the assessment of implementation, outcomes, and impact of extension activities. For the qualitative part, an informal interview was used to strengthen further the results of the data gathered by the survey questionnaire.

Profile of the Community Extension and Activities Conducted from 2016-2018. Table 1 shows the profile of the Skills Training conducted from 2016 to 2018. Data were gathered from the records of the Extension Services Office. The first four trainings were externally funded projects. The Sustainable Anti-Poverty Project (SAPP) was funded by CHED, aiming to provide necessary skills for the constituents of the Municipality of Balatan, Camarines Sur. Plumbing works training for personnel was also sponsored by the Barit Rural Water Works and Sanitation

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Organization of Buhi, Camarines Sur. Other skills training was conducted on the household owners at Brgy. San Roque Madawon, Nabua, Camarines Sur on the basic civil works, including repairs on household facilities.

Table 1. **Profile of the Externally-Funded Skills Trainings**

Skills Training	Venue	Date of Implementation	Duration	Number of Beneficiaries
Externally-funded projects				
Plumbing under Sustainable Anti-Poverty Project (SAPP)	Balatan, Cam, Sur	May 2018	120 hours	15
Tile-Setting under Sustainable Anti-Poverty Project (SAPP)	Balatan, Cam, Sur	May 2018	120 hours	15
Masonry under Sustainable Anti-Poverty Project (SAPP)	Balatan, Cam, Sur	May 2018	120 hours	15
Plumbing Works for Personnel of Barit Rural Water Works and Sanitation Organization	Buhi	Sept. 8-22, 2016	120 hours	13
				58
Other skills training				
Skills Training on Basic Civil Works for Household Owners	San Roque, Madawon, Nabua, Cam. Sur	Dec. 8-12, 2016	40 hours	50
			Total	**108**

Table 2 shows the profile of the Advocacy Programs conducted from 2016 to 2018. Shown on the table are the advocacy programs of the civil engineering programs. These advocacies were focused on water resources and safety, and outreach programs focused on building repair, gift-giving and feeding, and clean-up drives.

Table 2. **Profile of the Advocacy Programs**

Advocacy Programs	Outreach Programs	Venue	Date of Implementation	Beneficiaries
Water Resources and Safety Construction Safety	Gift-Giving, Feeding, Clean-up Drive	San Roque, Madawon, Nabua, Cam. Sur	Dec. 20, 2019	Constituents of the Barangay
			Dec. 19, 2016	
		San Miguel, Bato, Cam. Sur	Dec. 20, 2017	
		Ilian, San Nicolas, Iriga City	Aug. 5, 2016	
	Brigada Eskwela (Building	San Miguel Elementary School	May 30-31, 2018	Teachers and Students
		Zeferino Arroyo High School Iriga		

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	Repair, Clean-up drive)	San Antonio National High School, Iriga City		

Respondents/Participants of the Study. This study involved two groups of participants. The first group included community residents and barangay officials from partner barangays and institutions. The beneficiaries served as respondents in evaluating the outcomes and impact of extension programs through the use of structured questionnaires. The selection of participants was guided by a review of documents detailing the profile and scope of previous extension initiatives. Meanwhile, the barangay officials provided valuable input as key informants, offering suggestions and recommendations aimed at improving the delivery of extension services.

The total number of beneficiaries for skills training is 108. The sample size at 0.05 level of significance is 86. Convenience sampling was employed based on the computed sample size and distribution as shown in Table 3.

Table 3. Respondents for Skills Training

Skills Training	Beneficiaries	Sample
Plumbing under Sustainable Anti-Poverty Project (SAPP)	15	12
Tile-Setting under Sustainable Anti-Poverty Project (SAPP)	15	12
Masonry under Sustainable Anti-Poverty Project (SAPP)	15	12
Plumbing Works for Personnel of Barit Rural Water Works and Sanitation Organization	13	10
Skills Training on Basic Civil Works for Household Owners	50	40
Total	**108**	**86**

The total number of beneficiaries for advocacy and outreach programs is 374. The sample size at 0.05 level of significance is 194. Convenience sampling was employed based on the computed sample size and distribution, as shown in Table 4.

Table 4. Respondents for Advocacy and Outreach Programs

Barangay	Beneficiaries	Sample
San Roque Madawon, Nabua, Camarines Sur	120	62
San Miguel, Bato, Camarines Sur	106	55
Ilian, San Nicolas, Iriga City	103	54
Brigada Eskuwela (San Miguel, Bato/ San Antonio National HS, Iriga/ Zeferino Arroyo HS)	45	23
Total	**374**	**194**

The second set of respondents are the extensionists/extension workers. Four (4) faculty-extensionists served as the respondents in assessing the extent of implementation of extension activities and services. Both questionnaires and informal interviews were applied in gathering the data.

Profile of the Respondents of Skills Trainings under Externally Funded Projects. Table 5 shows the profile of the respondents under externally funded projects. It is noted that 13 respondents were construction workers, nine (9) were working as self-employed masons/tile settlers, and three (3) were employed at the water district. Ten respondents are working on jobs not relevant to the skills trained. Two respondents are pursuing

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education. Nine (9) of the respondents do not have current works. Interviews with these respondents found that some of them were previously working, but due to the pandemic, they were deprived of renewing their contracts, and some companies had laid off workers.

Table 5. Profile of the Respondents under Externally Funded Projects

Work	Frequency	Percentage
Construction Worker	13	28.26
Self-Employed as Mason/Tile-Settler	9	19.57
Employee at Water District	3	6.52
Waiter	2	4.35
Factory Worker	2	4.35
Vendor	2	4.35
Deliveryman/Helper	4	8.70
Student	2	4.35
No Work	9	19.57
Location		
NCR	11	23.91
CALABARZON	6	13.04
Bicol	20	43.48
No Work (Bicol)	9	19.57
Average Salary		
15,000 and above	3	6.52
10,000-14,999	9	19.57
5,000-9,999	13	28.26
Below 5,000	10	21.74
Student	2	4.35
No work	9	19.67

Data on the current location of the respondents' jobs is also presented. It was found that 20 respondents are working in the Bicol region, 11 are in the different cities in NCR, and six (6) are in the provinces of CALABARZON.

On the average salary of the respondents, it was found that 13 have an average salary of 5,000-9,999, and nine (9) have an average salary of 10,000-14,000. There were three (3) working with an average salary of 15,000 and above and ten (10) working with an average salary of below 5,000.

Instrument. The researchers developed the questionnaire by adapting items from previously validated instruments used in related studies. To ensure the reliability of the tool, a Cronbach's alpha test was conducted. A separate questionnaire was specifically designed for extensionists to assess the implementation of extension programs and services. The responses were measured using a four-point Likert scale: 3.50-4.00 - fully implemented (FI), 2.50-3.49 - moderately implemented (MI), 1.50-2.49 - slightly implemented (SI), and 1.00-1.49 - not implemented (NI).

Indicators were grouped according to skills training, advocacy, and outreach programs to assess the outcomes of the extension activities and services. In contrast, indicators were grouped according to social, economic, and environmental aspects of the impact assessment. Questionnaires on assessment of outcomes and impact are solely for the beneficiaries. A 4-scale Likert scale was used: 3.50-4.00 - strongly agee (SA), 2.50-3.49 - agree (A), 1.50-2.49 - disagree (DA), and 1.00-1.49 - strongly disagree (SD).

Data Collection Procedure. The researchers sought permission to distribute questionnaires to the respondents/participants. Various modes of data collection were considered. Due to the current health situation brought by the pandemic, virtual/online modes of data gathering were used.

Before administering the questionnaire, it is important to explain the nature of the study to the participants. The researchers ensured the respondents that their answers would be treated with utmost respect and confidentiality. The researchers individually contacted the respondents in various forms, such as messengers and text/calls. Google

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Forms were not used since the respondents were not aware of using Google Forms to answer the questionnaires. Also, some respondents work and stay in various places in the Philippines. Thus, individual calls/texts/messages via FB messenger were sent to answer the questionnaire and the interview. Google Forms of the questionnaires were used for the extensionists.

RESULTS

Extent of Implementation of Extension Services and Activities. The result of the extent of the implementation of extension services and activities is shown in Table 6. Five indicators were rated moderately implemented, and five indicators were fully implemented. The preparation of proposals, consultation with stakeholders, orientation, delivery of the necessary skills, and active participation of the extensionists were all rated as fully implemented. It is noted that faculty members delivered the necessary basic requirements for the conduct of the activity. On the conduct of evaluation after the activity, it is rated as moderately implemented. This is because not all extensionists conduct evaluation; only the proponents, project leaders, or the extension office do this. The use of available materials and other resources, allotment of budget, time and duration, and schedule of available time of extensionists were also rated moderately implemented.

Table 6. Extent of Implementation of Extension Services and Activities

Activities *(Cronbach Alpha is 0.783 – acceptable); N=5*	**Mean**	**Interpretation**
1. Preparation of project proposal	3.60	FI
2. Consultation with the stakeholders	3.80	FI
3. Conduct of orientation	3.60	FI
4. Use of available materials and other resources	3.40	MI
5. Allotment of time and duration of the activities.	3.40	MI
6. Allotment of budget.	3.20	MI
7. Schedule of available time of extensionists/extension workers.	3.40	MI
8. Delivery of the necessary skills and information to the beneficiaries.	3.80	FI
9. Active participation of the extensionists/workers.	3.80	FI
10. Conduct of evaluation after the activity	3.40	MI
Overall Mean	**3.54**	**FI**

Outcomes of Extension Activities and Services along Skills Training. The assessment of the outcomes of skills training is shown in Table 7. It was shown that the overall mean is 3.48 for the externally funded projects and 3.47 for the other skills training; both have verbal interpretations of agree. Results implied that the respondents majorly agreed upon the expected outcomes in the conduct of the skills training. The expected outcomes set for skills training were stated in the TESDA training regulation, which was the basis for the training delivery. This is composed of various competencies: basic, common, and core. Basic competencies contribute to the improvement of the soft skills of the students, such as communication, teamwork, confidence, and the like. In contrast, the common and core competencies contribute to the technical skills the trainees need to learn.

Table 7. Outcomes of Skills Training

Indicators	**Externally Funded** *(Cronbach alpha is 0.809-good); N=46*		**Other Skills** *(Cronbach alpha is 0.779-acceptable); N=40*		**Over-all**	
	Mean	**Inter-pretation**	**Mean**	**Inter-pretation**	**Mean**	**Inter-pretation**
1. Provided knowledge and skills relevant to the training conducted.	3.54	SA	3.43	A	3.49	A
2. Provided avenue to build self-confidence and morale.	3.37	A	3.45	A	3.41	A

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3. Enhanced ability for decision-making skills.	3.52	SA	3.38	A	3.45	A
4. Provided opportunities to meet other people.	3.59	SA	3.65	SA	3.62	SA
5. Gave opportunities to make behavior changes.	3.43	A	3.38	A	3.41	A
6. Assisted in finding job, and/or helped in the present job.	3.37	A	3.45	A	3.41	A
7. Helped in enhancing effectiveness in working with others.	3.59	SA	3.58	SA	3.59	SA
Overall Mean	**3.48**	**A**	**3.47**	**A**	**3.48**	**A**

Legend: I - Interpretation

Outcomes of Extension Activities and Services along Advocacy and Outreach. The assessment of the outcomes of advocacy programs is shown in Table 8. All the indicators for the outcomes of advocacy programs were rated by the respondent as strongly agreeing, having an overall mean of 3.61. Results implied that the advocacy programs conducted by the civil engineering programs had achieved the objectives set.

Table 8. Outcomes of Advocacy Programs

Advocacy *(Cronbach alpha is 0.740 – acceptable); N=194*	**Mean**	**Interpretation**
1. Provided knowledge and information on the various advocacies conducted.	3.74	SA
2. Gave awareness on the basic applications of the various advocacies	3.72	SA
3. Provided idea on how to maximize the potential of community resources.	3.51	SA
4. Provided avenue in the improvement of the way of living.	3.44	A
5. Helped develop and build self-confidence and morale.	3.64	SA
Overall Mean	**3.61**	**SA**
Outreach *(Cronbach alpha is 0.817 – excellent); N=194*		
1. Provided avenue in developing teamwork and unity between extensionists and beneficiaries.	3.89	SA
2. Helped the community for development in terms of economic and social infrastructure.	3.72	SA
3. Gave the community facilities and other resources.	3.53	SA
4. Helped in keeping the cleanliness and orderliness of the community.	3.70	SA
5. Provided materials and other resources to beneficiaries.	3.56	SA
Overall Mean	**3.68**	**SA**

The overall mean on the assessment of the outcomes of outreach programs is 3.68 (strongly agree). Results showed that the outreach programs achieved the desired outcomes, including developing teamwork and unity between the extensionists and beneficiaries. Studies show that community extension serves as an avenue to express ideas and work collaboratively with the community (Chavis & Wandersman, 1990; Perkins & Long, 2002; Addai et al., 2023).

Giving the community facilities and other resources and providing materials and resources to the beneficiaries are also outcomes of the outreach programs. This is supported by the study suggesting that participation in community extension programs is critical in bringing benefits to the families in the community (Llenares & Deocaris, 2018).

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Impact of Skills Trainings along Social Aspect. The result of the social impact of skills training is shown in Table 9. It is noted that for the externally funded skills training, the rating is 3.56, which is strongly agreed upon by the respondents, and for the other skills training, the rating is 3.59, which also strongly agrees. Overall, the rating on the impact of skills training is 3.58 as strongly agree. Results showed that the skills training is a contributory factor for the development of social aspects of the respondents.

Table 9. Social Impact of Skills Trainings

Indicators	**Externally Funded** *(Cronbach alpha is 0.788-acceptable); N=46*		**Other Skills** *(Cronbach alpha is 0.807-good); N=40*		**Over-all**	
	Mean	**Inter-pretation**	**Mean**	**Inter-pretation**	**Mean**	**Inter-pretation**
1. Became a productive member of the society.	3.41	A	3.48	A	3.45	A
2. Developed sense of teamwork and unity.	3.63	SA	3.63	SA	3.63	SA
3. Learned how to value the sense of responsibility.	3.54	SA	3.58	SA	3.56	SA
4. Boosted self-confidence and morale.	3.48	A	3.63	SA	3.56	SA
5. Skilled in providing transfer of knowledge to other people.	3.57	SA	3.58	SA	3.58	SA
6. Developed the capacity in maximizing and valuing the importance of time.	3.59	SA	3.50	SA	3.55	SA
7. Helped other people in the community.	3.61	SA	3.60	SA	3.61	SA
8. Respected, valued and understood other people in the community.	3.65	SA	3.68	SA	3.67	SA
Overall Mean	**3.56**	**SA**	**3.59**	**SA**	**3.58**	**SA**

Impact of Skills Trainings along Economic Aspect. The result of the economic impact of skills training is shown in Table 10. Results showed that the majority of the indicators were rated as agreed by the respondents. The mean rating on the economic impact of externally funded and other skills training are 3.49 and 3.45, respectively, with verbal interpretations of agree. The overall mean of the economic impact is 3.47 (agree).

Table 10. Economic Impact of Skills Trainings

Indicators	**Externally Funded** *(Cronbach alpha is 0.775-acceptable); N=46*		**Other Skills** *(Cronbach alpha is 0.781-acceptable); N=40*		**Over-all**	
	Mean	**Inter-pretation**	**Mean**	**Inter-pretation**	**Mean**	**Inter-pretation**
1. Found job and became employed.	3.48	A	3.40	A	3.44	A

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2. Increased household income.	3.50	SA	3.48	A	3.49	A
3. Bought appliances and other household gadgets.	3.46	A	3.38	A	3.42	A
4. Gained properties and other assets.	3.35	A	3.43	A	3.39	A
5. Sent children to schools.	3.59	SA	3.55	SA	3.57	SA
6. Sustained family's basic needs.	3.54	SA	3.50	SA	3.52	SA
7. Provided family with monetary savings.	3.48	A	3.40	A	3.44	A
Overall Mean	**3.49**	**A**	**3.45**	**A**	**3.47**	**A**

The majority of the respondents strongly agreed that they found a job and became employed, increased household income, sent children to school, and sustained the family's basic needs. Though some currently do not have work due to the pandemic, they rated the indicators on bought appliances and household gadgets, gained properties and other assets, and provided the family with monetary savings as agreed. This implies that all the respondents can provide the basic needs of their families. However, some cannot provide other material needs such as appliances, assets, and monetary savings. Based on a study, Tawiah (2020) highlighted that skills training and learning efforts are important in enhancing economic development.

Social and Environmental Impacts of Advocacy and Outreach Programs. The results reflecting the social and environmental impacts of advocacy and outreach programs are presented in Table 11. The data clearly indicate that these programs play a significant role in enhancing the social development of the respondents. All indicators received a rating of *strongly agree*, with an overall mean score of 3.63. This high rating suggests that the community perceives the advocacy and outreach initiatives as vital contributors to societal transformation. These findings are consistent with the studies conducted by Asio, Sardina et al. (2022), and Tagalik et al. (2023), which also highlight the positive influence of community-based programs on social development.

Table 11. Social and Environmental Impacts of Advocacy and Outreach Programs

Social *(Cronbach alpha is 0.769 – acceptable); N=194*	**Mean**	**Interpretation**
1. Became a productive member of the society.	3.65	SA
2. Developed sense of teamwork and unity.	3.84	SA
3. Learned how to value the sense of responsibility.	3.57	SA
4. Boosted self-confidence and morale.	3.68	SA
5. Skilled in providing transfer of knowledge to other people.	3.58	SA
6. Developed the capacity in maximizing and valuing the importance of time.	3.54	SA
7. Helped other people in the community.	3.65	SA
8. Respected, valued and understood other people in the community.	3.56	SA
Overall Mean	**3.63**	**SA**
Environmental *(Cronbach alpha is 0.803 – good); N=194*		
1. Sustained cleanliness in the surroundings.	3.68	SA
2. Conservation of resources.	3.56	SA
3. Conservation of water/energy.	3.76	SA
Overall Mean	**3.67**	**SA**

For the environmental aspects, it is clearly seen that with the various advocacy and outreach programs, the respondents strongly agreed on the environmental impact. Through advocacies on water resources and construction safety, the respondents gained the necessary information relevant to the advocacies, resulting in applying this

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knowledge to conserving resources and water. With sustained outreach programs on the clean-up drive being conducted regularly, the CSPC and the community have the same goal of achieving a clean and orderly community.

Relationship between the Outcomes and Impacts. Shown in Table 12 is the result of determining if there is a relationship between the outcomes and impact. It is found that the outcomes of the skills training have no significant relationship with the social and economic impacts of the respondents.

For the social impact, the outcomes of the training do not have effects on the social aspects of the beneficiaries. According to some of the beneficiaries, there needs to be more discussions on the basic competencies that they think contribute to developing their soft skills, such as communication, teamwork, and self-confidence. Though the relevant skills were sufficiently discussed through the common and core competencies, sufficient time should also be allotted for the basic competencies.

Likewise, the outcomes of the skills training do not relate to the economic impact of the respondents. This is because some of the respondents currently do not have work due to the pandemic, and for some of those who are working, the income they receive is just sufficient for their daily needs.

Table 12. Relationship between Outcomes and Impacts

Impact	Computed r_s	Critical value at 0.05 level of significance	p-value	Decision on H_o	Interpretation
Skills Training					
Social	0.125	0.215	0.250	Accept	NS
Economic	0.010	0.215	0.927	Accept	NS
Advocacy					
Social	0.610	0.141	0.000	Reject	S
Environmental	0.391	0.141	0.000	Reject	S
Outreach					
Social	0.717	0.141	0.000	Reject	S
Environmental	0.411	0.141	0.000	Reject	S

Legend: NS-Not Significant; S-Significant

The outcomes of the advocacy programs show a relationship between the social and environmental impacts. Findings showed that the outcomes of the advocacy programs influence the social and environmental aspects. Through the various advocacies, the social well-being of the respondents had improved. They were given the opportunity to be with CSPC in delivering various information relevant to their day-to-day life, which may result in social transformation. Involvement in environmental education supports the improvement of environmental attitudes and values (Al Balush & Ambusaidi, 2022) and, thus, contributes to environmental changes.

Along with the relationship between the outcomes of the outreach programs and the social and environmental impacts, it is found that outcomes have a relationship with both the social and environmental impacts. Findings showed that the outcomes of the outreach programs influence both the social and environmental aspects, which is also supported by the study of Maisog (2023).

The various outreach programs developed unity and teamwork between the extensionists and the community. It is along with the goal of the extension services of CSPC, that the community must feel the presence of CSPC through the various extension services and activities. With these outreach programs, the CSPC and the community were given the opportunity to work together for the common good, especially for the good of the community's constituents. Along with environmental aspects, the outcomes of the clean-up drive initiated by the programs were instrumental in achieving the culture of maintaining the cleanliness of the surroundings.

Proposed Recommendations. Based on informal interviews with the respondents, the barangay officials, and faculty extensionists, proposed recommendations were developed, as shown in Table 13, aiming to enhance further the implementation of extension services and activities of the civil engineering programs.

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Table 13. Proposed Recommendations

1. For skills training, which are TESDA courses: a. Trainers must be TESDA TM and NTTC holders in the field. b. Extensive refresher/review may be done after the training. c. The school may hire external trainers/assessors who may handle refreshers/reviews. By these, a higher passing rate can be achieved. d. There should be a proper allotment of time per TESDA training regulations on the basic, common, and core competencies. e. Facilities for the training must satisfy the minimum requirements of TESDA.
2. In the delivery of skills training, it is necessary to take into consideration the incorporation of topics that will further enhance the soft skills, values, and character of the beneficiaries.
3. Other advocacy programs may be included, such as: a. Solid and water waste management b. Indigenous materials c. Environmental Protection
4. Active participation of faculty members in every extension activity must be sought.
5. The program may widen the scope of extension services and activities through the conduct of research in collaboration with the other engineering programs that may be the basis for extension programs. Such research may include but is not limited to the following: a. design and installation of systems such as hydropower plant, water treatment facilities, water sources, drainage systems and infrastructures b. use of indigenous materials in construction
6. The programs may venture into other extension activities and ensure sustainability in such activities. This may include partnerships with other LGUs and agencies on technical consultation, such as: a. infrastructure development b. building supervision
7. Incorporate Gender and Development (GAD) concepts in the delivery of extension services and activities.

CONCLUSIONS

Extension is a social responsibility, considering that this is one of the core functions of higher education institutions. Aiming to build relationships between the school and the community, active faculty, stakeholders, and community participation are sought. The impact of extension services and activities of the civil engineering programs were conducted. Based on the findings, the extent of implementation of the extension services and activities was found to be fully implemented as perceived by the faculty extensionists. The outcomes of skills training were agreed while the beneficiary-respondents strongly agreed on the outcomes of advocacy and outreach programs. The respondents agreed upon the impact of skills training along social and economic aspects, while the impact of the advocacy and outreach programs was strongly agreed upon on both the social and environmental aspects. It is noted that the outcomes of skills training have no relationship with the social and economic impacts. In contrast, outcomes of advocacy and outreach programs have a relationship with the social and environmental impacts.

Long-term, comprehensive, and sustained extension services and activities must be conducted to achieve a more enhanced and productive development in the community. The implementation must be well-planned and organized with the support of the administration, faculty and students, community, and other stakeholders. The evaluation and assessment of the impact of extension services and activities must be regularly conducted for continuous quality improvement.

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REFRENCES

[1] Addai, K. N., Ng'ombe, J. N., & Lu, W. (2023). Disaggregated Impacts of Off-Farm Work Participation on Household Vulnerability to Food Poverty in Ghana. *The Journal of Economic Inequality, 21(1)*, 83-104. https://doi.org/10.1007/s10888-022-09543-9

[2] Al Balush, H. M., & Ambusaidi, A. K. (2022). The Influence of Environmental Education on Omani Students Self-Reported Environmental Attitudes and Behaviours. *International Research in Geographical and Environmental Education, 32*(2), 90-106. https://doi.org/10.1080/10382046.2022.2154976

[3] Aquino, H. R. (2023). Acceptability and Utilization of Livelihood Programs in Higher Education. *Journal of Education, Management and Development Studies, 3*(3), 1-19. https://doi.org/10.52631/jemds.v3i3.239

[4] Asio, J. M., Sardina, D. P., Olaguir, J. A., Obispo, K. P., & Macaraeg, E. K. (2022). Community Extension Programs in a Small Suburban Community: Its Impact and Basis for Institutional Sustainability and Support . *International Journal of Humanities, Management and Social Science, 5*(2), 50-58. https://doi.org/10.36079/lamintang.ij-humass-0502.365

[5] Chavis, D. M., & Wandersman, A. (1990). Sense of community in the urban environment: A catalyst for participation and community development. *Am J Community Psychol, 18*, 55-82. https://doi.org/10.1007/BF00922689

[6] Dilao, A. B. (2011). Impact of Community Extension Program on the Residents of Barangay Catadman-Manabay. *La Sallian Research Forum, 15*(6), 173-187.

[7] *Evaluation Research Design: Examples, Methods and Types*. (2020, June 4). Retrieved from Formplus: https://www.formpl.us/blog/evaluation-research

[8] Kellaghan, T. (2010). *International Encyclopedia of Education (Third Edition)*. Elsevier.

[9] Llenares, I. I., & Deocaris, C. C. (2018). Measuring the Impact of an Academe Community Extension Program in the Philippines. *Malaysian Journal of Learning and Instruction, 15*(1), 35-55. https://doi.org/10.32890/mjli2018.15.1.2

[10] Maisog, R. P. (2023). Implementation of Community Outreach Program of the National Service Training Program: A Causal Model on Students' Productivity. *International Journal for Multidisciplinary Research, 5*(3), 1-64. https://doi.org/10.36948/ijfmr.2023.v05i03.2913

[11] Medina, B. O. (2019). Community Engagement of State Universities and Colleges in the Philippines: Towards Socially and Culturally Responsible Research and Extension Initiatives. *International Journal of Advanced Research and Publications, 3*(4), 20-25.

[12] Perkins, D. D., & Long, D. A. (2002). Neighborhood sense of community and social capital: A multi-level analysis. In A. Fisher, C. Sonn, & B. Bishop, *Psychological sense of community: Research, applications, and implications* (pp. 291-318). New York: Plenum. https://doi.org/10.1007/978-1-4615-0719-2_15

[13] Rubio, J. M., Pentinio, C. V., & Ascan, J. C. (2016). Involvement in Community Extension Program of Business Adminstration Students in one Higher Education Institution in the Philippines. *Asia-Pacific Journal of Multidisciplinary Research, 4*(1), 109-122.

[14] Salazar, T. B. (2020). An Impact Study of the Community Extension Programs in a State College in the Philippines. *International Journal of Educational Sciences, 29*(3), 16-23. https://doi.org/10.31901/24566322.2020/29.1-3.1129

[15] Tagalik, S., Baker, K., Karetak, J., & Rahm, J. (2023). Rebuilding Relations and Countering Erasure through Community-Driven and Owned Science: A Key Tool to Inuit Self-Determination and Social Transformations. *Journal of Research in Science Teaching*, 1-26. https://doi.org/10.1002/tea.21881

[16] Tawiah, S. (2020). *Socio-economic Development through Skills Training for Poverty Reduction: An Exploratory Study of Rural Women in Mthatha, South Africa*. Doctoral Dissertation, University of South Africa, Pretoria.

[17] Terano, H. J. (2023). The Perceived Impact of the Community Extension Activities: A Case of the Electrical and Electronics Engineering Programs in a State College in the Philippines. *Journal of Human Ecology, 82*(1-3), 8-15. https://doi.org/10.31901/24566608.2023/82.1-3.3354