

AN IMPACT ASSESSMENT ON A FOOD PROCESSING TECHNOLOGY PROJECT IN CALINOG, ILOILO, PHILIPPINES**Raymund B. Moreno^{1, 2}**¹West Visayas State University raymund.moreno@wvsu.edu.ph²West Visayas State University, jovie.caballero@wvsu.edu.ph

ABSTRACT

This study was conducted to assess the impact of a food processing technology project which was implemented at Brgy. Simsiman, Calinog, Iloilo according to general and specific category classifications. This was done in order to determine the segmented results of the project and what the intervention approaches are achieving. A 4-part method for data collection and assessments were utilized, namely: 1. Respondents' profiling survey; 2. Project status monitoring; 3. Impact assessment survey; and 4. Conduction of a focus group discussion. Established data collection and analysis procedures were employed to get accurate results. The results show that over-all, the project has a "high impact" change" (Md= 3.53). With the specific category classifications, it's either "high impact" or "moderate impact" - Age: less than 40 (Md=3.53); 40 and over (Md=3.38). With regard to family size, 5-member families (Md=3.64); 7-member families (Md=3.52); and 2-member families (Md=3.07). For educational attainment: finished elementary level (Md=3.54); high school level/graduate (Md=3.53); and reached or finished college education (Md=3.07). Therefore, it can be concluded that the objectives were successfully obtained. Further, the classification of the categories used may not have a direct correlation to the impact of the study to them but is a great tool to draw insights and inferences. It is hereby recommended that more parallel studies focusing on other aspects and sub-categories be conducted and should utilize the results and discussions herein as a baseline data for a possible complementing result.

Keywords: *baseline data, focus group discussion, food processing technology, impact assessment, project status monitoring.*

1. Introduction

The project aimed to assess the impact of the project to its 30 participant-beneficiaries in terms of age, educational attainment, monthly family income, family size, and gender on a segmented timeline. Moreover, it was also used to evaluate through an impact assessment the results of the project in terms of economic, socio-cultural and environment aspect. The conduct of a post-project focus-group discussion for personalized feedback (challenges met and opportunities for further improvement and enhancement) significantly helped the project, which will be utilized as baseline data, will be one valuable tool for future endeavours similar to this. If there's one "great unifier" that connects intertwining people across cultures and generations, that will be food. It can definitely take you anywhere and anyhow - another

time, another country, another culture - without even the need to travel. Thus, food culture entails such an important way that people are able to connect and relate to one another (Faletra, 2020).

2. Literature Review

As it is one fundamental and basic need, since the humans' hunter/gatherer days, to farming and processing food by hand, and ultimately to modern ways of production, the evolution of how it is prepared, stored and consumed is inevitable - thus, we can say that, food, in itself, is technology. With the advent of the industrial revolution, we did not stop in achieving better and a safety way to have it processed for consumption.

Based on the writings of Dobbins (2018), food historian and author Rachel Laudan stated in his discussion that farm products are not food; they are the raw materials for food. Turning plants and animals into something edible is just as difficult, just as laborious as farming itself. Very few of consumed calories come from raw, unprocessed food. And if those calories are from fruits and vegetables, then it's only because centuries of breeding had made them less chewy, tastier, and easier to digest. Cooking, which is one part of processing, went hand in hand with becoming human food. Human food is processed food. And there are advantages in making processed foods. In conclusion, processed foods are easier to eat and digest, more nutritious, tastier, safer, and longer lasting.

Humans have been processing foods for centuries. The oldest traditional techniques included sun-drying (preservation of meat and fish with salt) or addition of sugar to fruits (recently known as jamming) paved the way of more modern ways to preserve it. Food processing is the transformation of raw ingredients, either by physical or chemical change, into food or of food into other forms. It involves activities such as mincing, macerating, liquefaction, emulsification, cooking, pickling/preservation and canning/jarring among others. These activities, or a combination thereof, result in the manufacture of ready-to-cook or precooked products such as, but not limited to confectionaries, instant food, flavored and health drinks, pickles, jams, jellies, flakes, juices, purees, canned foods, powders and mixes, sauces, oils among others. This information, along with the different methods of food processing like canning, pickling, drying, freeze-drying, irradiation, pasteurization, smoking and addition of chemical additives are essential knowledge may be even requiring some bits and pieces of the chemistry, microbiology, and physical composition of foods. Moreover, developing food processing technologies that are environmentally friendly and efficient can substantially contribute to the food value chain and to mitigating the energy crisis that the Philippines is experiencing (Alamu&Mooya, 2017).

In a nutshell, food technology is any technology that improves food production, distribution and supply, and it affects the way people sell, produce and distribute food. At some point, it led to the emergence of industrialized agriculture and set the standards for farming. During this time, industry leaders and inventors worked together to help increase food production and quality. Thus, it is the main objective of the researchers to impart the knowledge and skills behind it on a segmented timeline and regular interventions and assessments were done to check on the viability of the project.

According to Bechervaise (2018), impact evaluations aren't just for businesses; they can be used to all aspect of life - including life-changing projects such as this one. An impact assessment will look at what possible outcome a specific activity can have and how to mitigate or prevent any undesirable outcomes. It is a crucial component of education since it decides whether or not the objectives have been met. Placement, advancement, instructional needs, and, in some situations, funding are all influenced by assessments.

(<https://takeitpersonally.com/2018/03/06/what-is-an-impact-assessment-and-why-is-it-important/>). This will be an opportunity for the school to extend its services outside the "four corners of its rooms" and give the local community a source of income which will help improve their standard of living. In other words; by utilizing the skills learned through the Food Processing Technology Project, the community will generate a modest income for themselves in order to improve their quality of life. Thus, this impact assessment study will be conducted to measure the effectiveness of the project and determine the significant changes brought about by those extension activities.

3. Research Method

Research Design. A mixed method of research was employed in this study. Thus, it both used quantitative and qualitative research and methods in this single study about the assessment of the impact of food processing technology project in Brgy. Simsiman, Calinog, Iloilo and its effectiveness in bringing change among the lives of the participant-beneficiaries. The quantitative side of it was measured by the

numbers and statistics yielded and these variables were utilized to test the hypothesis, while the qualitative side was more on the focus group discussions wherein verbal feedbacks were documented, discussed and assessed. These were analysed to fit certain concepts and experiences in more specific ways.

Survey instrument. In order to have a standardized method of data collection, the survey instrument which was used in this study is the adopted-modified questionnaire from Amorin, et.al. (2018). This is a 4-part impact instrument which was utilized, namely: 1. Profiling survey to identify the thirty (30) participant-beneficiaries; 2. Project status monitoring (manpower, local operation and financial reports and standings; 3. Impact assessment (economic, socio-cultural and environment aspects, specific categories classification - age, family size and educational attainment); and 4. Focus-group discussion to evaluate the effectiveness and form an impression of the significant change among the lives of the participant-beneficiaries via a feedback in the post-project focus-group discussion session.

Data collection procedure. In order to abide by legal requirements, permission to conduct the study was formally secured from the authorities as well as the participants of the study in Brgy. Simsiman, Calinog, Iloilo. The data gathering instrument or the survey was personally distributed by the researchers to the participants in a span of one week. Accomplished survey instruments were retrieved, tabulated, processed, and interpreted using appropriate statistical tools right after.

Data analysis procedure. The data gathered were subjected to the following statistical treatments: frequency count, where we determined the number of participants belonging to a class/ category; Mean, where the results were used as basis in describing the participants' level of impacts in terms of economic, socio-cultural and environmental in general and the specific categories classification (age, number of family members and educational attainment). The Scale used and the corresponding response interpretation were: 4.51- 5.00: Very High Impact; 3.51- 4.5: High Impact; 02.51- 3.50: Moderate Impact; 1.51- 2.50: Little Impact; and, 1.00 - 1.50: No Impact at All.

Focus Group Discussion (FGD). This was conducted and was used to quantify the depth of impact brought about by the various sets of training and activities in the community, during the middle part of the project and after the project completion. The selected participant-beneficiaries discussed the challenges they met and identified opportunities for improvement of a given issue in-depth. These interventions will be done in 2 segments with a 1-year interval. This was facilitated by the researchers who served as the external moderators.

4. **Results and Discussion**

This chapter contains the results of data analysis in answering the problem of research or troubleshooting results expected by the author for the article which is not a result of this research. The research explains how these findings were obtained as the result of data analysis, statistical description of the subject and object of research, testing models nor empirically proving the hypothesis (if any). While discussion contains explanations that support the results of research or troubleshooting expected.

5. **Conclusion and Implications**

Based on the findings, it can be concluded that. This program had been significant to the lives of the participant-beneficiaries because they were able to apply the knowledge and skills in food processing, their learning out of it empowered them to be optimistic in life. The frequency distribution data helped a lot in somehow giving the hint of how they will they evaluate the effects of the project to their present lives and the future that lies ahead. The impact assessment based on the general and specific category classifications may not give a conclusive correlation to the results but it gave researchers the idea that opportunities such as this, if given to those underprivileged groups, will definitely influence their assessment of its impact, regardless of the category. Focus-group discussions also helped get raw emotions and real-time feedback which are essential for a temp check. Based on the findings and conclusions, the following recommendations were drawn:

It is very imperative that sub-categories should be outlined in every general category identified as this would yield conclusive results. As this aims as baseline data for further studies, it is also very important and highly recommended to do parallel researches that will complement and highlight the achievements of this one. As this was a life-changing project, the impact assessment will surely seal the deal for more opportunities for these group of people in order to uplift their lives and ensure a better future for them and their families.

Table 1. Frequency Distribution of the Respondents

	Category	Frequency	Percentage
The frequency of a value is the number of times it occurs in a dataset. A frequency distribution is the pattern of frequencies of a variable (Allen, 2017). It's the number of times each possible value of a variable occurs in a dataset.	Entire Group	100	100
	Age		
	Less than 40 years old	16	53.3
	40 years old and over	14	46.7
	Family Size		
	2	7	23.3
	5	10	33.3
	7	13	43.3
	Highest Educational Attainment		
	Elementary Level/Graduate	5	16.7
	High School Level/Graduate	10	33.3
	College Graduate	15	50.0

Table 1 shows that majority (53%) of the respondents were less than 40 years old. Basically, these are young adults who may have little to a considerable amount of experience in dealing with life. In terms of family size, many (43%) had 7 family members, 33% had 5 family members and 23% had 2 family members. This gives us the impression that their perception of the project's effectiveness in their lives would most likely be influenced by this classification. As to the highest educational attainment, half (50%) of them had reached or finished college education, 33% had reached or finished high school education and 17% had reached or finished elementary education. As the underprivileged group, this is the perfect target beneficiary group where an impact would most probably be reaching an optimum level.

Table 2. Impact of food processing technology project among the respondents per category

**The*

interpretation s based on the following scales: 1.00-1.50 - No Impact at All, 1.51-2.50- Little Impact, 2.51-3.50 -Moderate Impact, 3.51-4.50 -High Impact, and 4.51-5.00 -Very High Impact.

	Category	Median	Description
	Entire Group	3.53	High Impact
	Age		
	Less than 40 years old	3.53	High Impact
	40 years old and over	3.38	Moderate Impact
	Family Size		
	2	3.07	Moderate Impact
	5	3.64	High Impact
	7	3.52	High Impact
	Highest Educational Attainment		
	Elementary Level/Graduate	3.54	High Impact
	High School Level/Graduate	3.53	High Impact
	College Level/Graduate	3.07	Moderate Impact

While the impact assessment of food processing on nutrition is already available, the inverse guiding information is missing (Hutchings et al, 2018). The sensible question is – “what does it have to do with nutrition and being “health conscious”. This has to be in the minds of the target-beneficiaries when they assessed and answered the survey questions and after the project, this has been a major consideration on their parts.

As shown in Table 2, the food processing technology project had brought “high impact” among the respondents (Md= 3.53). In terms of age, “high impact” was felt by those who were less than 40 years old (Md=3.53) while “moderate impact” by those who were 40 years old and over (Md=3.38). These are young adults who are most optimistic of their future, thus, a project like this will serve as a motivating force in their lives.

As to family size, the project has brought “high impact” among respondents who had 5 (Md=3.64)

and 7 (Md=3.52) family members while “moderate impact” among those who had 2 family members (Md=3.07). Being in a relatively large family, opportunities like this will propel their dreams and aspirations for better economic situations. More members in the family would mean more mouths to feed and be provided with basic needs. Classified as the educational attainment group, the project had brought “high impact” among the respondents who reached or finished elementary (Md=3.54) and high school education (Md=3.53) while “moderate impact” was felt by those who reached or finished college education (Md=3.07). Results such as this will still go back to current economic situation as the greatest consideration of why the results came up like this.

Table 3. Impact of food processing technology project in terms of economic, socio-cultural and environmental aspects

Category	Median	Description
Economic	3.42	Moderate Impact
Socio-Cultural	3.43	Moderate Impact
Environmental	3.67	High Impact

**The interpretation is based on the following scales: 1.00-1.50 - No Impact at All, 1.51-2.50- Little Impact, 2.51-3.50 -Moderate Impact, 3.51-4.50 -High Impact, and 4.51-5.00 -Very High Impact.*

For the sustainability of the food processing industry, the challenge is to develop strategies that improve social, environmental, and economic sustainability, holding true with what the United Nations' sustainable development goals and The Natural Step performance targets. This is a must to maintain the food industry's social license to operate (Knorr et al, 2020).

Table 3 shows that the food processing technology project had brought moderate impact to both economic (Md = 3.42) and socio-cultural aspects (Md = 3.43) while “high impact” to the environmental aspects (Md = 3.67) of the respondents. General categories such as these may not give direct the direct correlation but the results, for the two categories, economic and socio-cultural is almost reaching the “high impact” level.

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