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## Research Article

### Reexamining and Reimagining the Future of Barangay (Village) Nagbalon: Solidarity Program and Community Based Enterprise Approaches for the Local Governance of the Sustainable Development Goals

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#### ABSTRACT

The UN SDG for performance measures is already in place that makes the Barangay Solidarity Program build to address one of the issues which are ageism. In today's changing society, not only changing values are important, but also changing the numbers and mindset of the people. Old persons have seen many changes in their lives, and the changes associated with aging are taken pretty much in stride. This study examines the real happiness of older persons, the expectations that society has for them, how people adapt to future forces in later life. The study employed a mixed-method approach. The successful aging dimensions were reviewed among older persons. A quantitative survey among 200 older persons and exploratory factor analysis was applied to test the structural validity of the instrument. This includes the ten dimensions of happiness namely: food, family, friends, faculty, fitness, financial, faith, future, and fear. In addition, this study explores that the older persons of the future may have no choice but to be self-reliant. The obtained results indicated that the happiness of older persons has significant effects on their faculty, faith, and future singly and in the combination of moderating variables such as age, gender, and pension. The different stakeholders' collaboration, co-production, and co-creation should be realized to meet the challenges on what the people feel, need, and get involved in their resilient bright future and capacity building as part of community-based enterprises. For future undertakings, other researchers may consider government organizations as co-leadership, and co-organizers of every barangay success for aging society, pandemic crisis and disaster preparedness, and economic enterprises at individual and social levels for sustainable development goals of local governance.

**Keywords:** *Sustainable Development Goals, aging society, solidarity program, community-based enterprises*

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## Introduction

According to the World Health Organization (WHO), out of 10 COVID 19 deaths in the Philippines, seven are senior citizens. Also, there is a higher case fatality rate for Senior Citizens at 31.20%. This vulnerability to the COVID 19 gave Senior Citizens the second top priority for vaccination, after front line health workers. Out of estimated 8.2 million Senior Citizens in the Philippines, the vaccine roll out was able to vaccinate nearly a third of them already. On top of the higher COVID 19 death, Senior Citizens, especially those 65 years old and above, had the longest time spent on lockdown, with movement restrictions still imposed since 15 March 2020. While this movement restriction policy had the good intention of reducing COVID 19 deaths of Senior Citizens, the unintended consequences are the still to come long term effects on physical and mental health. Prolonged less movement in old age can result to muscle loss (sarcopenia), they can result to frailty and falls. Also, there is the risk associated with osteoporosis when movement restriction for Senior Citizens becomes a way of life since bones brittleness ensues. Confined to their homes, the negative impact on mental health of Senior Citizens is an aspect that policy should have considered at the onset and whose impact still must be ascertained.

For societies experiencing ageing, the most predominant program is those on health and social support. Japan, considered as a super aged society has policies with have both the health and social components. China and Singapore, both considered as aged society, have considered the culture of filial piety or *xiao* in their formal public policy program, based on Confucian ethics, on top of the health and social support. In low and middle country in Asia, Vietnam has implemented a unique approach with their Intergenerational Self-Help Clubs. The local government role in this approach is a major factor in the implementation of the program. One of the program components is livelihood, in addition to health care and social support. The Philippines, a middle-income counter, is not yet considered a society that is ageing since the estimated population of Senior Citizens at 8.2M is 7.5% of the 108,035,343 total population. However, there are provinces

who are experiencing societal ageing. Bulacan province is one of them.

In Bulacan province, the population is 3.71M. The 2020 population data of the Philippine Statistics Authority indicate a slowing down of the population growth in Bulacan province, from 2.73% for the decade 2000 to 2010 to 2.4% for the decade 2010 to 2020. In each of the towns and cities, the population growth rate is slower in the coastal areas and those contiguous to it. There are only seven (7) municipalities and cities whose population growth rate are higher than the 2.4% growth rate of the province. The remaining 17 municipalities and cities, or 70% of the sub provincial local government have population growth rate that are slower than the provincial population growth rate. Note also that the top four are all the coastal cities/municipalities. The town of Pandi experienced the highest rate of population growth. This is mainly due to the illegal settlement of the government housing projects in the area that happened in 2017. If the population growth rate of Pandi is not included, the population growth rate of Bulacan province would have declined by 13% to around 2% from 2010 to 2020. This indicates that the population growth rate in Bulacan province is by in migration, not natural means.

As to the population of Senior Citizens, this is increasing as indicated by the percentage share of the total population with an average growth rate of 19.04% is a trend that should consider ageing as a policy focus of Bulacan province. The 2020 data on the population of Senior Citizens were from the Bulacan Provincial Social Welfare and Development Office (PSWDO) while the Philippine Statistics Authority (PSA) data were the basis for the percentage from 2000 to 2015 and the 2020 population. The PSA has no official information of the 2020 data on the percentage of Senior Citizens in Bulacan province. Using the PSWDO 2020 data on the population of Senior Citizens and the PSA 2020 population data, the percentage of Senior Citizens in each town and cities in Bulacan province: Nearly half of the towns and cities in the province have Senior Citizens population who comprises 10% of the total population. The percentage of the population who are Senior Citizens and the population growth

rate were taken together. The largest percentage of Senior Citizen population combined with the slower population growth rate are taking place in the coastal areas of the City of Malolos, Bulakan, Obando and Hagonoy.

In the town of Marilao, there are barangays with tidal flats as their topography. One of them is barangay Nagbalon. From empirical observations of residents in the area, Nagbalon is experiencing flooding due to sea level rise. This empirical data considered the information on the tides from the calendar and does not consider the factor of the monsoon season. This frequent flooding worsened in 2021, with the inundation. During the Typhoon Fabian event, the floodwaters were in all the major roads of Nagbalon from July 23 to 28, for six straight days. Given the tidal flat geography of Nagbalon, all the farmlands and fishponds were underwater all year round, rendering a total loss of natural resource productivity. There is no manufacturing and services company in Nagbalon, the only resource is the working age population, WAP. A 2020 barangay census indicates that the WAP is about 71% of the total population, higher than the 64% in the Philippines. Harnessing the skills and competencies of this WAP is a challenge to the barangay. As to the youth sector, those ages 15 to 30 is about 28% of the population. Of this, 43% are school age. Senior Citizens comprises 10.66% of the population. In terms of population growth rate, the average decline in the last 20 years is negative 1.35%. The population is declining, and the number of older persons is increasing. Hence, barangay Nagbalon is an ageing society.

In business-as-usual scenario, that is pre and during the COVID 19 pandemic, Nagbalon is an ageing society with declining population growth rate. The natural resource endowment, the farmlands, and the fishponds, are underwater all year round, given the unceasing sea level rise due to climate change. There is water and solid waste pollution from the upland areas and from other major river system since Nagbalon is in the discharge zone of two watersheds, the Marilao San Jose del Monte and the Meycauayan Valenzuela river tributaries both of which meet up in and around Nagbalon. In an area where frequent inundation is a reality,

there is the absence of manufacturing and services sector since disruption in economic activity is certain when roads are flooded.

In view of the above reasons and in a post pandemic world, the local government of Nagbalon aspires to a new and better normal where there is solidarity between and among generations of its residence, abandon the myth of ageing as a period of decline and wasting. Rather, Senior Citizens have the wisdom gained from the fluid and crystallized intelligence, among other forms of intelligence and the pursuit of the wisdom of Senior Citizens should be undertaken. Thus, the objectives of the study: 1) examine the real happiness of older persons, the expectations that society has for them, how people adapt to future forces in later life; 2) Identify the needs of Barangay Nagbalon; 3) Collaborate, and co-create through Barangay Solidarity Program as the provision of technical support to community-based enterprises whose intention is to break the poverty trap of the poorest of the poor most vulnerable to the impact of climate change with the production and marketing of healthy higher value goods using renewable energy; and 4) build the capacity of the barangay to attain the UNSDG through the implementation of Barangay Solidarity Program with the set-up of a community-based enterprise that addresses eight (8) plus one (1) UNSDG related to the following targets: SDG 1. Target 1.1 Eradicate Extreme poverty for all people everywhere; SDG 2. Target 2.1 End hunger and ensure access by all people, particularly the poor and vulnerable population, to safe, nutritious, and sufficient food all year round; SDG 4. Target 4.4 Substantially increase the number of youth and adults who relevant skills, including technical and vocational skills for employment, decent jobs, and entrepreneurship; SDG 7. Target 7.2 Increase substantially the supply of renewable energy. SDG 8. Target 8.2 Achieve higher levels of economic productivity through diversification, technology upgrading and innovation and growth of micro, small and medium-size enterprises. SDG 9 Target 9.4 Upgrade infrastructure and retrofit industry, with increased resource use and efficiency and greater adoption of clean and environmentally sound technologies and

industrial processes. SDG 9. Target 9.5 Enhance scientific research, upgrade the technological capabilities, including encouraging innovation and substantially increasing the number of research and development workers and spending. SDG 10. Target 10.1 Progressively increase and sustain income growth of the bottom 40 percent of the population. SDG 12. Target 12.8 Ensure that people everywhere have the relevant information and awareness of sustainable development and lifestyle in harmony with nature, and SDG 17. Partnership.

**Logical and Conceptual Framework**

With the barangay local government taking the lead, there were four (4) variables to focus on. These are the productivity of labor, the production of high value goods, the solar energy system, and the digital platform. So as not to overwhelm the barangay local government, there is an initial of eight (8) targets set forth directed at eight (8) plus one (1) of the seventeen (17) goals. There is still the need to quantify these targets as one of the next steps on the way forward. The logical framework is presented in Figure 1.

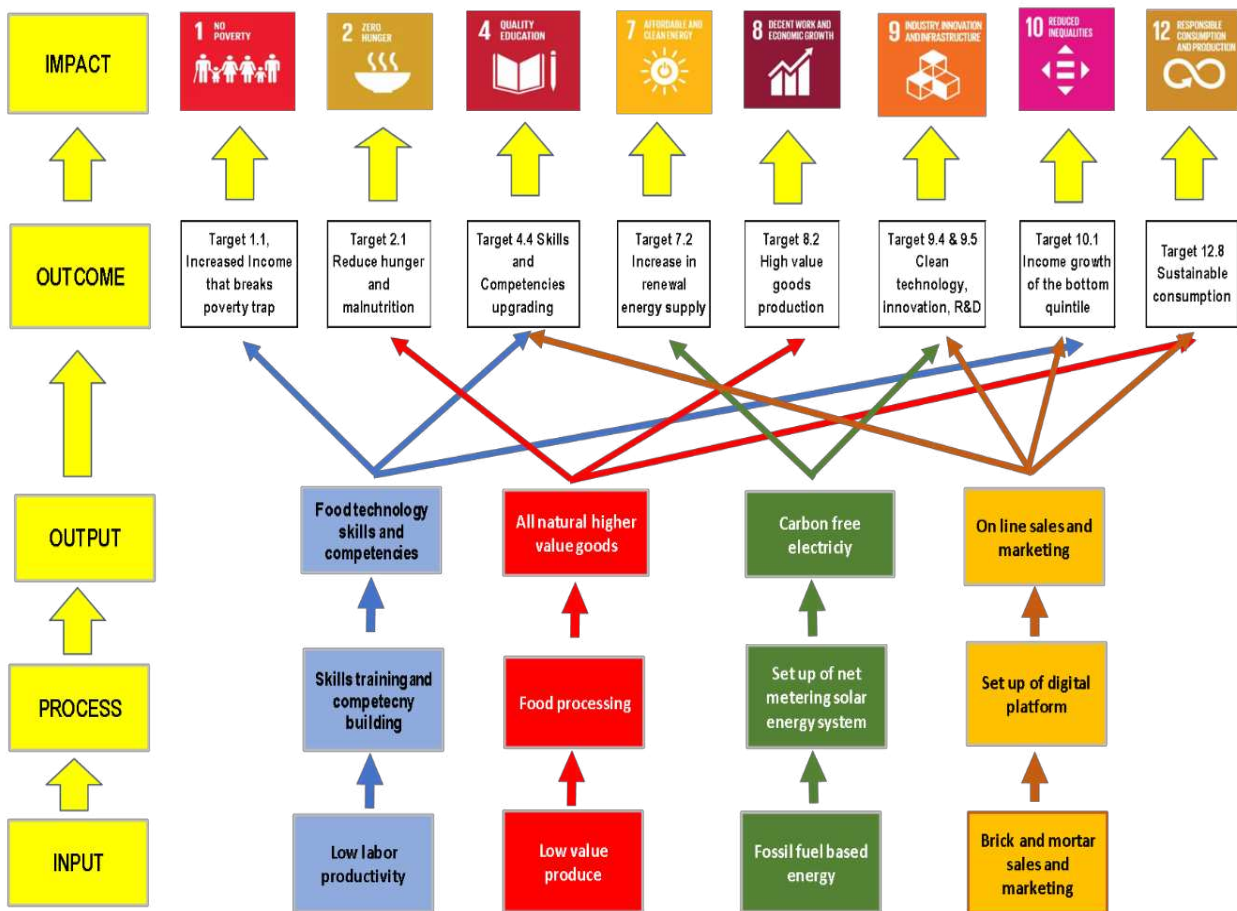


Figure 1. Conceptual Paradigm of the Study

Figure 1 shows the input, process, output, and outcome of the study where SDGs 1- No poverty, 2- No hunger, 4- quality education are the priorities for the future of Barangay Nagbalon and for each target and indicators were interrelated and connected to achieve sustainable development goals.

**Methods**

The study used mixed methods research, both quantitative and qualitative research design. A quantitative survey questionnaire was administered from 200 respondents from 5 puroks, and exploratory factor analysis was applied to test the structural validity of the

instrument. This includes the ten dimensions of happiness namely: food, family, friends, faculty, fitness, feelings, financial, faith, future, and fear. In addition, education and training on sustainable development goals, enterprise management, food production standards, leadership, renewable energy, digital platforms were conducted.

Last 20 July 2021, a conference on the Barangay Solidarity Program and the SDG was held with participants from most of the barangay council, the Sangguniang Kabataan (village youth council), and all the Mother Leaders representing the five (5) puroks. During the action planning, there was a unanimous decision to pursue the Barangay Solidarity Program that deviated away from the current paradigm to that of post pandemic governance as elaborated in The Theory of Change. One of the action items is the conduct of the survey whose initial respondents are the Senior Citizens (60 years old and over).

## **Results and Discussion**

### ***Happiness of Senior Citizens***

The result shows that the senior citizens were very happy in relation with their family/friends, future, food, feelings with the highest mean while fitness, faculty, fear, financial, and faith with the lowest mean value. Before the pandemic according to Valenzuela, et al (2020) the 7 F factors – fitness, food, friends, and faith have been found positively and significantly related to level of happiness of senior citizens. However, during the pandemic, food, fitness, family, faculty, friend, and faith also found positively and significantly related to level of happiness of senior citizens. In addition, financial, fear, and future were significantly associated with older persons.

Four factors out of seven factors have been found significantly influence the happiness of senior citizens before the pandemic. Hence, of the ten dimensions of happiness during the pandemic, future, faith, and faculty are the predictors of senior citizens of barangay Nagbalon.

### ***Nagbalon Solidarity Program Planning Workshop***

A personal contribution of two hundred thousand pesos handed over by the Marilao

Mayor. Also, a two hundred thousand pesos municipal grant was handed last February 2022. As such, the need to set up the organization for this fund to be used in a manner that is consistent with governance transparency, accountability, efficiency, effectiveness, inclusiveness, and the rest of the principle of public administration in the 21st century latched to the achievement of the UN Sustainable Development Goals. To ensure that abundance principles of public administration is made, the Department of Public Administration (DPA) of the College of Social Science and Philosophy (CSSP) of the Bulacan State University (BulSU) served as a collaborative partner to use of the contribution of the personal fund of the Marilao Mayor and other funding which also obtained for Barangay Nagbalon solidarity program. The systems and procedures were set up so that principles are translated into actions then. The municipal government has verbally agreed on the use of their environment office in Nagbalon to be used as a facility to produce high value goods. However, the facility still needs to have a reliable and predictable supply of utilities, that is, power and water. Assuming that the utilities are in place, the mobilization of the equipment, tools and gadgets can be made. These include the following: Kitchen related equipment: Six (6) stainless steel tables with dimensions of 5 feet by 3 feet. Two (2) are for raw material preparation, two (2) for production and another two (2) for finished goods. Two (2) stainless steel kitchen cabinet, with dimension of 5 feet tall, 3 feet wide and 2 feet depth. One (1) for storage of stainless-steel kitchen gadgets. Another one (1) for small raw materials storage such as salt, pepper, bay leaves, olive oil and coconut oil, as well as products that are for research and development. Two (2) stainless steel sink. One for raw material washing. Another for washing of kitchen utensils. Two (2) high grade pressure cooker or retort. Four (4) large woks and cooking pans. Two (2) home kitchen pressure cooker. At least two (2) sets of stainless-steel knives (from small to big ones, around 5 pieces per set), ladders (around 3 pieces), spoon and fork (around 2 sets), plates (about a dozen), measuring cups and saucers (about a dozen per set). Cleaning kits like mops, squeegee, scrapper, and

portable pressurized water dispenser. Plastic sealer for caps of bottles o Conference table and 5 (five) chairs – one set, all stainless steel. White board with dimension of five feet width and three feet height (plus two feet stand). Starting inventory for product research and development: Olive oil, around 5 gallons, Coconut cooking oil, around 4 cans, Tomato sauce, Filipino style, around ten (10) kilos ,Bottles with caps, around four (4) hundred pieces, Labels and plastic sealers, Bay leaf, around 2 kilos, Salt of high grade quality (not sea salt), ground, around five kilos, Round peppers, around five (5) kilos o Picked cucumber and carrots, fresh as needed, Moreover, a need to convene a core group in the form of a management council at the barangay level was done. The council has two sets of skills and competencies. First, there are the business enterprise skills and competencies. There are two who have been identified. Second, there are the need for skills and competencies on education and training directed at the workers and supervisors of the social enterprise. To this end, there are two educationalists who are identified. There is a need to understand the poverty dynamics in the barangay. Towards this end, a list of the ten families who have been experiencing the severest extent of poverty have been identified by the barangay chairman, as advised by the Mother Leader. The researcher documented the stories of the ten families who are the poorest of the poor in the barangay. This documentation is necessary to establish the baseline on the poverty level, depth, and severity.

### ***Needs and Challenges Identified***

These are the lack of economic activity, the frequent flooding linked to the tidal cycle made worst by sea level rise due to climate change, and population ageing. To address these concerns, the Nagbalon Solidarity Program was conceptualized with the Bulacan State University providing the technical support in such areas as research, food related product development and standardization, among other things. The whole endeavor is aligned to the UN Sustainable Development Goal with those on no poverty, no hunger and those on the partnership goals where there is the involvement of

the state university extension services to support challenges in the community. According to Barangay Chairman, Barangay Nagbalon involvement in addressing the problems included the provision of the grant by the municipality for the purchase of the land where an economic enterprise will be set up this year 2022. The funding for the building is now being mobilized. The economic enterprise was proposed related to the fisheries given that the area is still predominantly fishponds. The mayor expressed his support to the economic enterprise with commitment of 400,000 pesos for the food processing equipment. Also, he showed the video of his flood control initiatives which will address the tidal flooding concerns. As to the ageing of Nagbalon, a town level survey be undertaken.

### ***Collaboration, and co-creation through Barangay Solidarity Program***

To do the collaboration, and co-creation, the extensive publications on Common Pool Resource (CPR) of Elinor Ostrom were implemented with the eight principles of governing the commons: 1) Clearly defined (clear definition of the contents of the common pool resource and effective exclusion of external unentitled parties); 2)The appropriation and provision of common resources that are adapted to local conditions; 3)Collective-choice arrangements that allow most resource appropriators to participate in the decision-making process; 4) Effective monitoring by monitors who are part of or accountable to the appropriators; 5) A scale of graduated sanctions for resource appropriators who violate community rules; 6) Mechanisms of conflict resolution that are cheap and of easy access; 7) Self-determination of the community recognized by higher-level authorities; and; 8) In the case of larger common-pool resources, organization in the form of multiple layers of nested enterprises, with small local CPRs at the base level.

The theories and principles of CPR was used to set up community-based enterprises involving the Senior Citizens, youth and WAP. The enterprise used solar energy system and is enabled by the digital platform. The incubation of the enterprise was done in the barangay with

the construction of a facility where there is a pilot food product development and enterprise center. The funding for the building for Nagbalon Solidarity Center is already secured given the confirmation from the Barangay Chairman. The building has solar energy

system with net metering mechanism, and this is not part of the building construction. The scale up was undertaken with financing from impact investment capital. In summary, the Theory of Change is presented as follows (Figure 2):

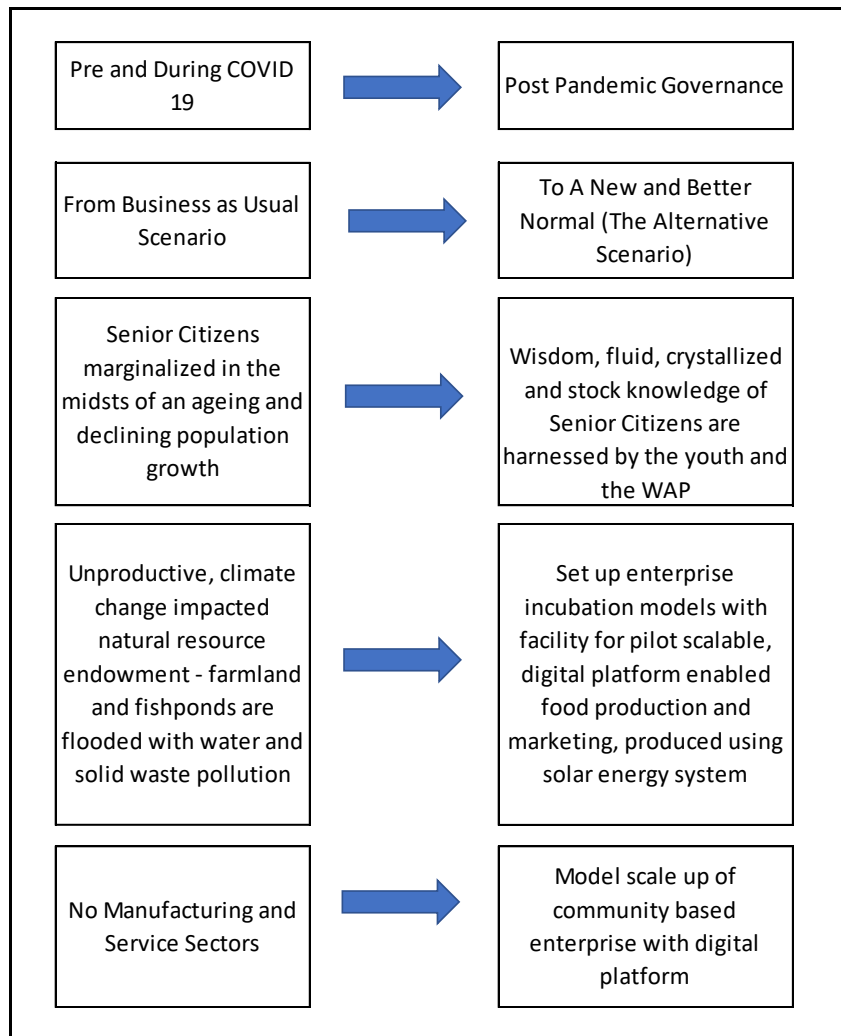


Figure 2. Theory of Change

This Theory of Change needs technical support from the Bulacan State University, led by the College of Social Science and Philosophy, specifically the Department of Public Administration. The support is in the following challenges: 1) Guidance on post pandemic governance at the barangay directed at the attainment of the SDG. This is in the form of periodic support on research and studies to establish data related to the different variables and their relationships, differences, and the effects of interventions therein; 2) The policy support to

the barangay on the aspect of operational cost and the revenue generation given the set-up of the facility for the community-based enterprises. The Nagbalon Solidarity Center has the food pilot testing which include cold storage and small kitchen equipment. Both incur power consumption. The solar energy system to be installed have net metering mechanism to enable the reduction in the cost of power and thereby minimize the impact on the barangay expenditures. Given this enterprise nature of the program, there is a need to come up with the fiscal

support where a profit venture can be realized with the use of capital which may have been sourced from the private capital market; 3) The revisiting of the relief program given that the barangay has the capacity to produce fresh, hot, nutritious, safe, and clean meals that can be distributed during disaster and flooding events. This entails benefits of lower cost yet nutrition rich food and as such, there is the potential savings out of purchasing finished goods such as uncooked meals from canned goods and noodle packs; 4) Support in the standard testing related to food products such as bacterial and microbial test, shelf-life analysis, and nutrient analysis; 5) Set up of the digital platform to enable the business enterprise to be managed even in remote, home-based settings. This also

entails a barangay-based programming and application development network complementing the social media platform and; 6) Enterprise management, shifting the mindset of the youth and the working age population from the mind set of employment to that of business.

### Happiness of Senior Citizens and the SDGs

The use of happiness and the UN SDG for the youth sector is meant to define the areas of cooperation, collaboration, co-creation and learning together in the spirit of solidarity. However, countering ageism is an even more essential tasks to overcome the discrimination and marginalization of older persons as presented in Figure 3.

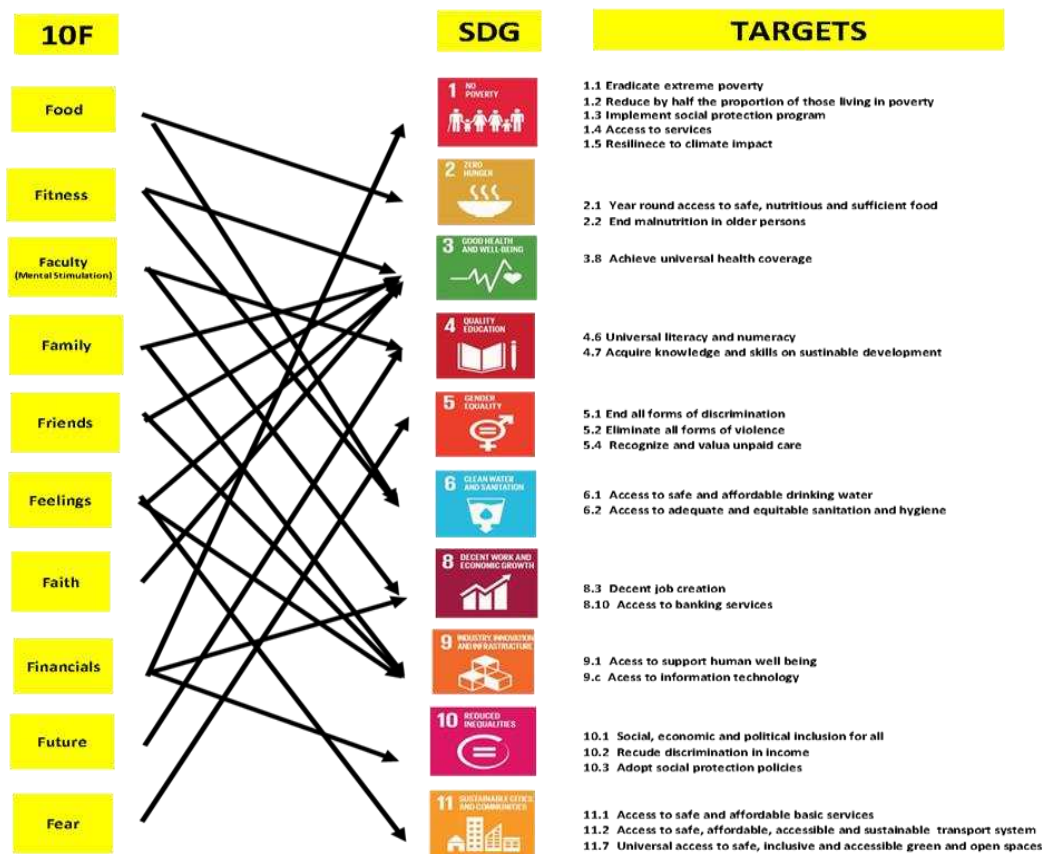


Figure 3. Relationship between the SDG and the happiness of Senior Citizens

Data from the World Happiness Report and the UN SDG report indicate a high level of positive and significant correlation. This Barangay Solidarity Program positively contribute to this field of study with village governance as the

level of focus with the context of an ageing society whose natural resource base is unproductive given the severe impact of climate change with flooding from sea level rise.

There are efforts at the global and national level to localize the SDGs. In the Philippines, the Department of Interior and Local Government (DILG) has a Joint Memorandum Circular date 2018 with the National Economic and Development Authority (NEDA) on the localization of the UN SDG. The circular does not include the barangay. This local initiative contributes to this gap in the efforts on sustainable development.

## Conclusion and Recommendations

Significant correlation exists between ten dimensions and happiness of senior citizens. Faith and Future have significantly influenced the happiness of senior citizens during the pandemic. Faculty was significantly predictor of both before and during the pandemic. For take-aways, stakeholders' collaboration, co-production, and knowledge co-creation should be realized to meet the challenges on what the people feel, need, get involved in their resilient bright future, and capacity building. And future researchers may consider government organizations as co-leadership, co-organizers of every barangay success for ageing society, pandemic crisis, climate change, and economic enterprises at individual and social levels for sustainable development goals of local governance.

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