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A characteristic-based sorting tool for SLP beneficiaries

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A Characteristic-Based Sorting Tool for SLP Beneficiaries

Celia M. Reyes and Arkin A. Arboneda



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A Characteristic-Based Sorting Tool for SLP Beneficiaries

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PHILIPPINE INSTITUTE FOR DEVELOPMENT STUDIES

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Abstract

The Sustainable Livelihood Program (SLP) is one of the social protection programs of the Department of Social Welfare and Development (DSWD) that aims to provide livelihood opportunities to its targeted beneficiaries. The program offers two tracks of assistance, employment facilitation and microenterprise development. This study aims to develop a characteristics-based sorting tool that assesses the best suited track for a participant using personal and background information, personality and characteristics of the community. This offers a more systematic way of assessing and doing track selection vis-à-vis the current system letting the participants choose based primarily on their preferences. Logit estimations were performed using a survey of 2015 SLP beneficiaries to estimate the probability of success for each track using individual and community variables.

Keywords: Department of Social Welfare and Development (DSWD), Sustainable Livelihood Program (SLP), employment facilitation, microenterprise development, sorting tool

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A characteristic-based sorting tool for SLP beneficiaries

*Celia M. Reyes and Arkin A. Arboneda**

1. Introduction

The Sustainable Livelihood Program (SLP) of the Department of Social Welfare and Development (DSWD) is a community-based capacity-building program established in 2011 that aims to provide livelihood assistance to improve the participants' level of economic sufficiency. Target participants of the program are beneficiaries of the *Pantawid Pamilya* program, non-*Pantawid* households identified as poor families based on the *Listahanan* or the National Household Targeting System for Poverty Reduction (NHTS-PR), poor families with certificate of indigency from the LGU, and families identified as part of a vulnerable group (e.g. PWDs, out-of-school youths, disaster-affected).

SLP is implemented through a two-track program. Employment facilitation (EF) track prepares its participants to be qualified and ready to enter employment. Interventions include skills training to acquire or improve their employable skills, raising awareness to gain knowledge and access to job opportunities, and assistance in preparing and processing documents for job applications. Microenterprise development (MD) track, on the other hand, prepares its participants to establish and manage a new microenterprise or enhance their existing microenterprises. Interventions include entrepreneurial skills trainings, assistance in gaining knowledge and access to probable suppliers and clients, and other needed preparations for enterprise management, such as asset acquisition and business planning.

Intended participants are sorted into these tracks based entirely on their preference, by signing a letter of intent indicating their participation to the program and their preferred track. Since the program's onset in 2011 to May 2016, SLP has served a total of 1,279,572 families. MD track remains to be dominant across the years, comprising 84.0% of the total families served.

Table 1. Number of families served by SLP, by year and track

SLP Track	2011	2012	2013	2014	2015	2016*	Total
MD	44,628	93,025	178,190	316,964	380,068	61,545	1,074,420
EF	2,029	2,528	13,758	26,362	127,539	32,936	205,152
Total	46,657	95,553	191,948	343,326	507,607	94,481	1,279,572

Source: DSWD. Briefer on the Sustainable Livelihood Program, 2016

* As of May 2016

Success indicators, as defined in the End of Program Outcome (EOP) stated in the 2015 SLP Monitoring Sub-Manual, measures the proportion of participants engaged in quality livelihoods or jobs. A successful MD beneficiary must be involved in an active microenterprise for the past 3 months and is at least break even. Successful EF beneficiary, on the other hand, must have a regular or permanent job and have worked for at least 4 months during the past 6 months, or is currently working and have worked for at least 3 consecutive months.

This paper examines the indicators of livelihood success of previous SLP participants. Using this findings, this study intends to create a sorting tool that will identify the best suited track in which a participant has a greater chance of success based on his/her background and

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characteristics vis-à-vis the current system of track selection based on the individual's preference.

The paper is organized as follows: Section 2 presents an overview of the SLP program and discusses studies that assess characteristics of employees and microenterprise owners; Sections 3 and 4 present the methodology of the study and the profile of SLP beneficiaries, and; Section 5 discusses the process of creating and interpreting the results of the sorting tool.

2. Review of Related Literature

2.1. Overview of the SLP program¹

The Sustainable Livelihood Program (SLP) is one of the social protection programs of the Department of Social Welfare and Development (DSWD) that supports poor and vulnerable families in attaining economic sufficiency. The program provides livelihood opportunities in the form of employment or microenterprise to targeted beneficiaries. The goal of economic sufficiency is defined by the program as improvements in the participants' employable skills, employment opportunities, income, social security and access to financial institutions. The program aims to achieve these improvements by providing the following assistance: financial support, capacity building activities and skills training, and assistance to job seekers.

Several indicators have been developed by the DSWD to assess the goals of the SLP program. The intermediate outcomes of the program are measured in terms of the number of SLP participants with employment (for EF), or those who have or involved in an active microenterprise (for MD). The end of program outcomes, on the other hand, are measured in terms of the percentage of SLP participants who are involved in a microenterprise with ongoing business operations for the past 3 months and is at least break even. For EF, the indicators are in terms of percentage of SLP participants with: (1) regular or permanent employment, (2) employment for at least 4 months during the past 6 months, and (3) current employment and have worked for at least 3 consecutive months.

On the pursuit of providing the most appropriate and effective interventions in order to achieve the intended outcome of the program, SLP continues to innovate and develop new methods and strategies to respond to a variety of poverty context and situations (2015 SLP Field Operations Manual). As of the 2015 SLP FOM, there are six main stages of implementation, namely: (1) area identification, (2) participant identification, (3) project identification, (4) project review and approval, (5) project implementation, and (6) monitoring and evaluation. These stages were designed to ensure that all necessary interventions will be carried out and that each participant of the program will reach the target of attaining a certain level of economic sufficiency based on the four economic sufficiency indicators of the Social Welfare and Development Indicators (SWDI), namely: (1) employable skills, (2) employment, (3) income, and (4) social security and access to financial institutions.

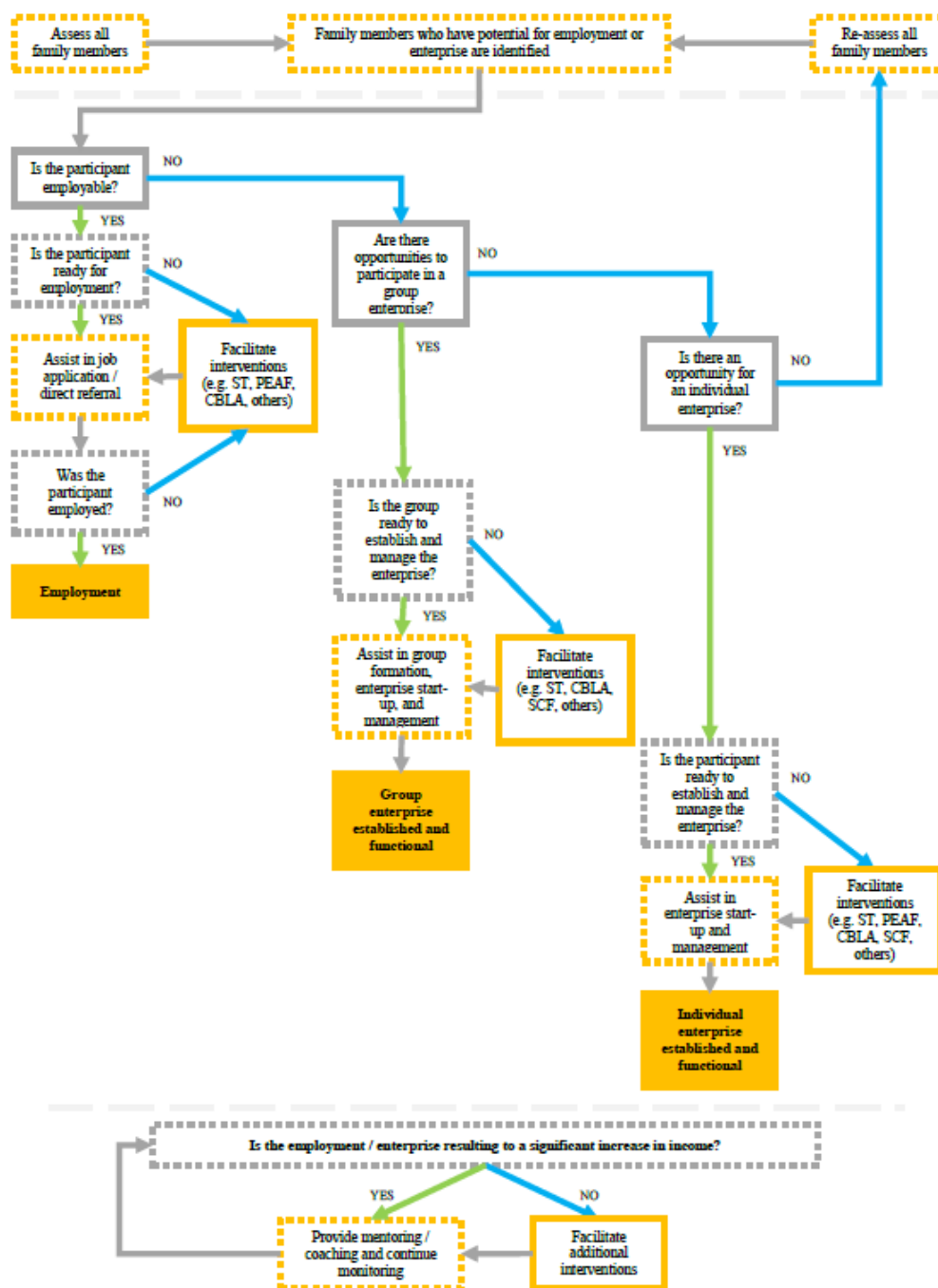
During the first three stages, market opportunities and existing/potential resources were mapped out to identify priority areas, probable participants, and priority projects. Priority areas are identified based on existing opportunities and on the resources and capabilities of probable participants in the area. Target participants are Pantawid Pamilya families, non-Pantawid

¹ Based on the 2015 Sustainable Livelihood Program (SLP) Field Operations Manual (FOM).

families identified as poor in the Listahanan database and other poor families identified by a proxy means test administered by DSWD. Priority projects, on the other hand, are selected based on viability and sustainability given several factors such as resources and proximity to the intended market.

For the track selection, identified participants who have potential for employment or enterprise will be gathered and given an orientation on the program and the proposed projects for their barangay. At the end of the orientation, the participants who are willing to pursue with the program will be asked their preferred track (EF or MD) and choose or suggest a project/enterprise that they want to join.

Figure 1. Intervention identification decision tree



Source: 2015 Sustainable Livelihood Program (SLP) Field Operations Manual (FOM)

Interventions of the program are provided in four modalities: skills training (ST), pre-employment assistance fund (PEAF), cash for building livelihood assets (CBLA) and seed capital fund (SCF). The skills training modality allots PHP 20,000 per participant for financing the core training. This modality can be availed by both EF and MD beneficiaries. Meanwhile, the PEAF is a cash support in acquiring prerequisite requirements for job hunting. This is exclusive for EF beneficiaries amounting to at most PHP 5,000 per participant. On the other hand, both CBLA and SCF modalities were exclusive for MD beneficiaries. The CBLA is a program that encourages short-term and labor intensive projects that can offer employment opportunities for other poor families, while the SCF is a capacity grant amounting to at most PHP 10,000. The grant is intended to support the establishment of a community-based credit and savings facility and to provide start-up or additional financial capital for those who wish to engage in other income-generating projects. Upon the approval of the 2017 Field Operations Manual, the skills training grant will be reduced to PHP 15,000 per participant, while the SCF grant will be increased to PHP 15,000. A map on the provision of these modalities is shown on Figure 1.

2.2. Characteristics of employees and microenterprise owners

Entrepreneurship and employment are the two main components of the DSWD-SLP program. Literature suggests several factors that affect both entrepreneurial and employment attitudes. These include education, economic factors, culture, technological development, and psychological and sociocultural factors. All factors are important in the development of an entrepreneurial or employable attitude. However, psychological and sociocultural factors are difficult to quantify.

De Mel, McKenzie and Woodruff (2010), conducted a survey of business owners and wage workers in July 2007 and measured entrepreneurial personality using a series of questions developed by various industrial psychologists. Aspects of entrepreneurial personality being measured were personal motivation in work and life, power motivation and internal locus of control, polychronicity, impulsiveness, organization and optimism. These questions were statements on one's personality wherein the responses were coded on a scale of one to five, with one indicating "strongly disagree" and five "strongly agree".

Table 2. Entrepreneurial psychology survey questions

Achievement	It is important for me to do whatever I'm doing as well as I can even if it isn't popular with people around me.
	Part of my enjoyment in doing things is improving my past performance.
	When a group I belong to plans an activity, I would rather direct it myself than just help out and have someone else organize it.
	I try harder when I'm in competition with other people.
	It is important to me to perform better than others on a task.
Work centrality	The most important thing that happens in life involves work.
Tenacity	I can think of many times when I persisted with work when others quit.
	I continue to work on hard projects even when others oppose me.
Locus of control	It is difficult to know who my real friends are.
	I never try anything that I am not sure of.
	A person can get rich by taking risks.*
Power motivation	I enjoy planning things and deciding what other people should do.
	I find satisfaction in having influence over others.
	I like to have a lot of control over the events around me.

Impulsiveness	I plan tasks carefully.*
	I make up my mind quickly.
	I save regularly.*
Passion for work	I look forward to returning to my work when I am away from work.
Polychronicity	I like to juggle several activities at the same time.
	I would rather complete an entire project every day than complete parts of several projects.*
	I believe it is best to complete one task before beginning another.*
Organized person	My family and friends would say I am a very organized person.
Optimism	In uncertain times I usually expect the best.
	If something can go wrong for me, it will.*
	I'm always optimistic about my future.
	I hardly ever expect things to go my way.*
	I rarely count on good things happening to me.*
	Overall I expect more good things to happen to me than bad.

Source: De Mel, McKenzie and Woodruff (2010)

*Scales for these questions were reversed.

Responses on each question within a group were added to generate a score for that trait. Higher scores mean that the respondent possesses the said trait. Logistic regressions were performed to distinguish own account workers from microenterprise owners and wage workers. Findings of the study showed that own account workers are less competitive, have greater sense of control, less organized and more optimistic than microenterprise workers. Wage workers, on the other hand, were found to be more organized, less optimistic and have less desire to be in control compare to own account workers. Also, wage workers have higher scores on work centrality and were more motivated by achievement than own account workers.

Using a household survey in Argentina, Auguste and Bricker (2016) uses factor scores on how positive or negative a respondent feel on different statements on one's personality. Five factors were retained by the authors to measure entrepreneurship intentions. These factors were composed of the questions as described in Table 3, and were defined by the authors as: (1) outgoing attitude, (2) flexibility desire, (3) risk aversion, (4) social intelligence, and (5) effort. Higher scores on these factors mean that the individual has a more outgoing attitude, more desire for flexibility, more risk averse, more social avert, more willing to do high effort in work, respectively.

Table 3. Entrepreneurship intention statements and results of factor analysis

Statements	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Being my own boss		✓			
Having flexibility with hours/holiday		✓			
Having the opportunities of earning more income		✓			
Doing what I like		✓			
Create jobs					
Not having a steady income every month			✓		
Having to cope with business risks			✓		
Having to work more than 9 hours a day					✓
Having to be proactive	✓				
Having people whose work and income depends on me	✓				

Learn about activities of a business or organization	✓				
Having to manage multiple activities of a company or organization	✓				
Having to go out and sell products or services	✓			✓	
Having to negotiate with others	✓			✓	

Source: Auguste and Bricker (2016)

Findings of the study showed that individuals with entrepreneurial intent have high desire for flexibility and have a more outgoing attitude. Also, they have lower scores on risk aversion and social intelligence. Moreover, a higher percentage of them are willing to do high effort to obtain their goals (i.e. willing to work for more than 9 hours per day). The same results, but with different weights, were also observed for entrepreneurs.

These results were used in a probit model of factors that affect the entrepreneurial intent and the entrepreneurship choice of individuals. For entrepreneurship, only two of the generated factors were significant: social intelligence and effort. For entrepreneurial intent, significant factors were risk aversion, flexibility and having an outgoing attitude. This results suggests that intent and actuality are driven by different forces. That is, the factors that make an individual interested in becoming an entrepreneur are not the same as what really makes an individual an entrepreneur.

3. Methodology

The study uses an individual-level survey data set containing information on sample SLP beneficiaries and their employment or enterprises. Structured paper questionnaires were administered by the DSWD-SLP Monitoring Program Development Officers (MPDOs) of sample municipalities through face-to-face interviews with the respondents. Paper questionnaires were then encoded in CSPro through a series of encoding trainings conducted in Cebu, Davao and Quezon City.

3.1. Survey Questionnaire

The survey questionnaire is composed of 4 parts: participant background, SLP participation, personality traits, and impact of SLP.

Part 1 gathers the following information: (1) personal information such as name, sex, civil status, date of birth, address, and contact number, (2) educational attainment before and after the receipt of SLP assistance, (3) previous training, work and business experiences, (4) employment status before and after the receipt of SLP assistance, (5) exposure to business, (6) household assets, and (7) access to financial services.

Part 2 contains information on the following: (1) type of SLP assistance received, (2) details on the SLP-assisted employment for EF-track beneficiaries, (3) status of individual/group business setup/expanded through SLP.

Part 3 contains two groups of questions on personality traits. The first group is composed of 28 questions lifted from De Mel, McKenzie and Woodruff's study on measuring entrepreneurial

personality. The second group consists of 14 statements lifted from Auguste and Bricker’s study on measuring entrepreneurship intentions. Responses for each statement were coded on a scale of one to six, with one indicating “strongly disagree” and six “strongly agree”.

Lastly, Part 4 asks the personal assessment of each respondent on the impact of SLP to their standard of living.

3.2. Sampling frame

The 2015 SLP Database is an administrative record of individuals who received SLP assistance in 2015. This is created through the consolidation of regional accomplishment records. However, all regions but Region IX and ARMM were included in the database—there are no 2015 accomplishment records obtained from ARMM while the 2015 accomplishment record of Region IX does not indicate whether an individual received MD or EF assistance.

The 2015 SLP Database is composed of 485,083 individual beneficiaries with complete records². However, 38,708 records with no indicator on the beneficiary’s track assignment were dropped since this information is essential for defining the sample frame and in performing the model estimation. Also, 9,602 beneficiaries who received both types of assistance were excluded in the sampling frame in order to simplify and focus the data analysis, which is to identify the characteristics that distinguish EF and MD track beneficiaries from each other.

Table 4. Composition of the 2015 SLP Database

Received EF assistance	109,521
Received MD assistance	327,252
Received both EF and MD assistance	9,602
No indication on the type of assistance received	38,708
Total	485,083

Source: DSWD 2015 SLP Database

In addition to these conditions, LGUs must satisfy three criteria for them to be included in the sampling frame: (1) it must have at least ten 2015 SLP beneficiaries, (2) it must have at least three EF-track beneficiaries, and (3) at least one MPDO is assigned to it. These criteria were imposed to gather enough data for the EF track and to make the workload as field enumerators become manageable for the MPDOs.³

Satisfying these criteria were 682 LGUs with a total of 336,620 individual beneficiaries. This constitutes the sampling frame for this study.

3.3. Sampling design

The survey adopted a single-stage stratified sampling design in selecting the sampling units, which are beneficiaries of SLP in 2015. Using proportional allocation⁴, 500 LGUs were drawn from the sampling frame. A sample size of 5000 were equally divided into the 500 selected municipalities or cities (i.e. 10 individuals per LGU).

² Records with incomplete details, i.e. no first name or last name (131) and no indicated address (9,128), and duplicates (5,702) were dropped.

³ The average shares of MD and EF track beneficiaries across LGUs are 75.55% and 24.45%, respectively.

⁴ The probability of selection was proportional to the population of SLP beneficiaries of the LGUs within each region.

Using sample size determination for a finite population with unknown variance, the estimated minimum required sample is 2,396. Since the field enumerators (i.e. MPDOs) were expected to interview ten respondents per LGU, the sample size of 5000 is about twice of the calculated minimum sample size. This is to account for the possible non-responses and to ensure that there will be enough sample for the EF track.

Individual beneficiaries by LGU and track were sorted alphabetically using their last names. Ten individuals per LGU were drawn using simple random sampling such that all individuals per LGU and track will have an equal chance of being selection. The selected individuals in this stage will comprise the original list of respondents.

Another round of simple random sampling was also performed to select 20 beneficiaries per LGU. These individuals will comprise the list of replacements in cases were the original respondents does not want to be interviewed, cannot be interviewed because he/she is not available, temporarily away, on vacation, or not at home after three individual visits or cannot be located anymore. Also, the replacement must belong in the same track as the original respondent.

3.4. Survey sampling results

The survey was conducted by the MPDOs of the selected cities/municipalities on October to November 2017. Afterwards, the collected data were encoded by the MPDOs during the data encoding trainings conducted by PIDS. Consolidated data from the three conducted data encoding trainings was composed of 5,051 records. The excess to 5,000 was due to the encoding of respondents who were non-recipients of SLP assistance in 2015, and thus, did not proceed with the interview.

All encoded data were examined and cleaned by the project research team. It was found out during the data cleaning procedure that sections on training, business and work experience have the most missing values. These sections were vital in the analysis of comparing the EF and MD beneficiaries. Therefore, callbacks were conducted via phone calls by a team of data cleaning assistants in order to complete the missing sections and to validate erroneous or ambiguous responses.

After the callbacks, all records were filtered to retain respondents that have received SLP assistance in 2015 and have non-missing values on required variables. After removing records of respondents who (1) were non-recipients of SLP assistance in 2015, (2) have erroneous or missing [start] dates of SLP-assisted employment for EF or SLP-funded business for MD, and (3) have missing values on key variables, a total of 1,182 respondents were retained as the final sample size.

3.5. Other data sources

To complement the individual-level data gathered in the survey, the project team used the 2015 Cities and Municipalities Competitiveness Index (CMCI), which is a municipal-level data compiled by the National Competitiveness Council.

Table 5. Indicators in the 2015 Cities and Municipalities Competitiveness Index

Economic dynamism	Government efficiency	Infrastructure
Local economy size	Capacity of health services	Road network
Local economy growth	Capacity of schools	Distance to ports
Jobs	Police to population	Accommodations
Cost of living	Business registration efficiency	Availability of utilities
Cost of doing business	Investment promotion	Infrastructure investment
Financial institutions	Compliance to national directives	Connection to ICT
Productivity	LGU tax	Transportation
Business groups	Transparency	Health
	Economic governance	Education
	LGU awards	ATM

Source: National Competitiveness Council

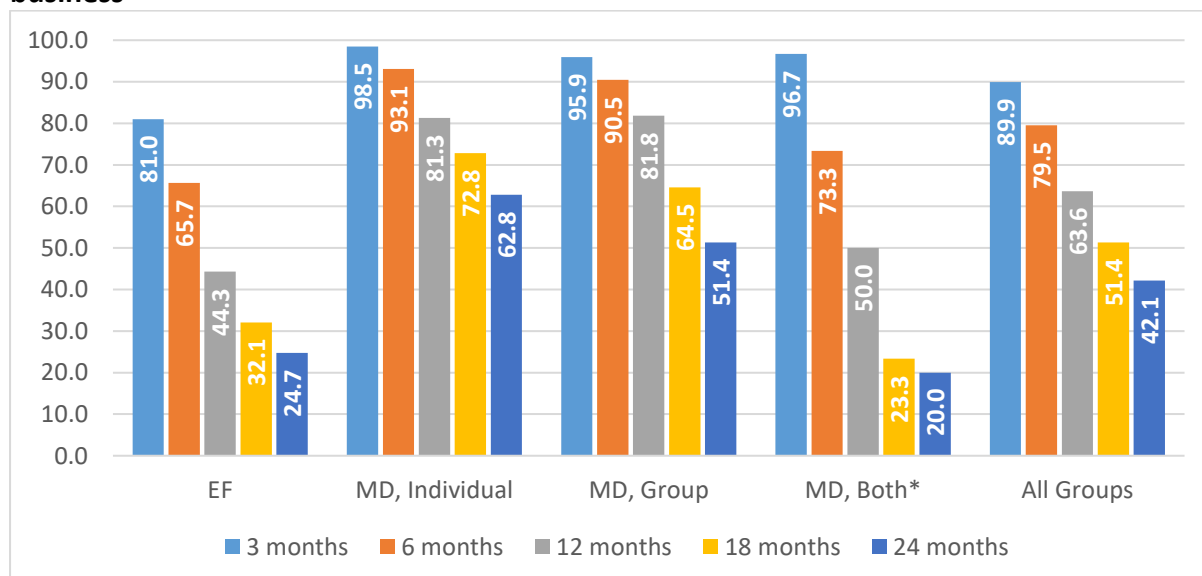
The CMCI is an annual ranking of participating cities and municipalities based on overall competitiveness score, which is the sum of scores on three main pillars of productivity. These pillars are economic dynamism, government efficiency, and infrastructure. Scores on each pillar are based on several sub-indicators, as listed in Table 5.

3.6. Definition of success

Based on the SLP Monitoring Sub-Manual, successful MD beneficiaries have a business operating for at least 3 months and is at least break even. Successful EF beneficiaries, on the other hand, have a permanent employment, have worked for at least 4 months during the past 6 months, or are currently employed for at least 3 consecutive months.

In response to these definitions, the life span of the indicated SLP-funded business and the length of total employment since the receipt of SLP assistance were considered in defining a successful beneficiary. An adjustable cutoff – 3, 6, 12, 18 and 24 months – were defined wherein those who exceed the cutoff were deemed to be successful.

Figure 2. Success rate of SLP beneficiaries by number of months with employment/in SLP business



Source of basic data: Survey of 2015 SLP beneficiaries, October 2017

*Successful MD (both) are those with both successful individual and group businesses; otherwise, unsuccessful.

Success rates, as expected, decrease as the cutoff increases. Overall, 89.9% of the respondents have employment or have the SLP-funded business operating for at least 3 months, 79.5% for at least 6 months, 63.6% for at least 12 months, 51.4% for at least 18 months, and 42.1% for at least 24 months. Generally, EF beneficiaries have lower success rates compared to their MD counterparts. This reflects difficulties in retaining employment compared to operating a business.

Considering the definition of success defined in the SLP Sub-Monitoring Manual, the cut-off of 6 months is chosen by the project team as the determinant of success for both EF and MD beneficiaries. For MD, this cutoff compensates the condition of business operations being break even. It is assumed by the project team that the business is at least break even since it operates beyond the 3-month criteria of SLP. For EF, the 6-month cutoff is greater than the SLP criteria and it also reflects the typical length of employment contracts.

3.7. Statistical analysis

Descriptive analysis was used in profiling and examining the difference between respondents of different tracks and success status. Section 5 of this paper focuses on the key findings of the survey and the profile of respondents. Respondents' profile includes topics on the age, educational attainment, previous training/work/business experiences, type of business setup/expanded through SLP (for MD), and type, class and nature of employment acquired through SLP (for EF).

Scores on first set of personality traits questions lifted from de Mel, McKenzie and Woodruff (2010) are generated by aspect of personality similar to what was done in the literature. However, instead of summing up the scores per trait, the project team opted to create dummy variables to indicate whether the respondent agrees to each statement or not. That is, the dummy will have a value of 1 if the respondent indicated a response of 4 (somewhat agree) to 6 (strongly agree); otherwise, 0. The scores for each aspect of personality are generated by counting the statements within each aspect in which the participant agreed to (i.e. adding the dummy variables per aspect).

On the other hand, similar to the process of Auguste and Bricker (2016), factor analysis was done on the second set of personality traits questions. Two separate factor analyses were performed for EF and MD track beneficiaries. This is to take into account differences in personality of [successful] employees and entrepreneurs.

Factor analysis for both EF and MD retained six factors. However, only four were retained since the project team does not find a clear interpretation on the last two factors. Factor 1, consists of statements that defines an outgoing attitude – being proactive, having to negotiate or sell products or services, or to learn and manage business activities. Factor 2 contains statements that describe the willingness of a person to take risks and put oneself in unfamiliar circumstances. Factors 3 and 4 have only one high loading statement reflecting flexibility and risk taking behavior, respectively.

Table 6. Factor analysis results for EF and MD*

Statements	EF	MD
Factor 1		
Learn about activities of a business or organization	0.6708	0.5504
Having the opportunities of earning more income	0.6177	0.4723
Having to be proactive	0.5965	0.4572
Having to go out and sell products or services	0.5798	0.5378
Create jobs	0.5542	0.5072
Having to negotiate with others	0.5419	0.5228
Factor 2		
Having people whose work and income depends on me	0.4458	0.3333
Being my own boss	0.3759	0.3681
Having to cope with business risks	0.3377	0.2664
Factor 3		
Doing what I like	0.3891	-0.2555
Factor 4		
Not having a steady income every month	0.2630	0.2676

Source: Authors' calculations

*Contains statements that have high loadings within each factor

Another set of factor analysis were performed to generate indices. Each run consists only of the statements listed in Table 6. Indices per factor and track are obtained by predicting the first factor. The indices were built such that a higher value means that the individual possesses the identified traits.

For interpretation purposes, these indices were then converted back to the original scale (one to six, where one indicating “strongly disagree” and six “strongly agree”) using the formula provided by Starkweather (2012). This uses the factor loadings as weights for the weighted mean and weighted standard deviation of the original data. Rescaled scores were then calculated as the sum of the weighted mean of the original data and the product of the standardized factor score and the weighted standard deviation of the original data.

Logit estimation is also conducted to assess the probability of being successful in each of the tracks offered by SLP – EF and MD. However, the MD group is further divided into two groups composed of MD beneficiaries with individual enterprises and those with group enterprises. Those with both individual and group enterprises were included in both estimations for the MD track. This is to assess whether there is a difference in the characteristics of a beneficiary for he/she to become successful when he/she established an individual or group enterprise. Therefore, three logit estimation were conducted for each identified group: EF, MD (individual), and MD (group).

Table 7. Disaggregation of the sample for estimation and testing

SLP Track	n	%	Estimation	Testing
EF	542	45.9	459	83
MD, Individual	390	33.0	330	60
MD, Group	220	18.6	186	34
MD, Both	30	2.5	25	5
Total	1,182	100.0	1,000	182

Source: Authors' calculations

The final sample size of 1,182 is also divided into two subsets. The first subset is composed of 1,000 respondents while the second subset is composed of the remaining 182 respondents. These subsets are proportional to the composition of the original 1,182 records in terms of the SLP track of the respondents. The first subset will be used for the logit estimation, while the second subset will be used to check the validity of the estimated model.

4. SLP PDOs Service Delivery

Selected Implementing Program Development Officers (IPDOs) were provided with a questionnaire on the current track selection practices being implemented in their respective areas of assignment. This is to understand how the SLP processes, particularly the beneficiary targeting and track selection, are operationalized in their respective localities. The selected IPDOs were assigned in the participating LGUs for the DSWD-PIDS-3ie Study on the Sustainable Livelihood Program⁵. A total of 49 IPDOs from Regions II, III, VII, VIII, XII and NCR were involved in this process.

4.1. Pre-implementation stage

The SLP project cycle usually starts in the identification of priority areas and participants. In identifying project areas, IPDOs gather local data and information, such as the city/municipal profile and its Annual Investment Plan (AIP), and the number of Pantawid beneficiaries in the city/municipality. Using a Barangay Ranking Matrix (BRM), IPDOs rank barangays based on the following data: (1) number of *Pantawid* families, (2) number of self-sufficient families, (3) number of subsistence families, and (4) priority opportunities for the city/municipality. IPDOs will then meet with the LGU of the identified priority barangays to present an overview of the SLP process, and to possibly secure their support in the conduct of SLP activities through an MOU or other agreements. Consultations will also be made with the City/Municipality Social Welfare Development Officer (C/MSWDO) and *Pantawid* Parent Leaders to identify eligible participants within the barangay.

The second phase of the pre-implementation stage is the conduct of an initial SLP assembly. The assembly provides the identified participants an overview and basic orientation about the program and its implementation process. During this phase, attendees who are interested to pursue with the program are required to accomplish the Participant Qualification Assessment Form (PQAF), which identifies a recommended SLP track based on his/her profile. Results of the PQAF, however, are only used to determine whether the participant is eligible to continue to the program (i.e. must be recommended to either or both tracks). Eligible participants but are non-*Pantawid* are validated through name matching in the NHTS or *Listahanan* database. For those who are not in the *Listahanan*, the IPDOs conduct the SLP means test to identify whether the participant is eligible to continue in the program.

4.2. Social preparation stage

IPDOs will invite all eligible participants to a second SLP assembly. During this stage, the participants are informed about the results of the PQAF, name matching and means test processes. Moreover, the IPDOs present the result of their Sustainable Livelihood Analysis (SLA) with the participants for vetting and finalization. The SLA, which was done based on

⁵ The DSWD-PIDS-3ie Study on the Sustainable Livelihood Program is an Impact Evaluation study of the SLP. The study aims to evaluate the impact of the proposed two program modifications – better beneficiary sorting process using the sorting tool, and the exclusive use of Public Employment Service Offices (PESO) in the employment facilitation of EF beneficiaries.

collected data during the project area identification phase, includes an enlistment of Community Economic Activities (CEA), livelihood SWOT analysis, and identified market opportunities through the Livelihood Asset and Market Map (LAMM).

Participants who are interested to continue with SLP will then undergo a Basic Livelihood Training (BLT), which consists of Micro-Enterprise Development Training (MEDT) and Basic Employment Skills Training (BEST). These capacity building activities aims to help the participants in acquiring knowledge and skills that can be applied in managing an enterprise or in job applications. A post-training assessment will be undertaken to assess the participants on whether they can continue with the program.

All participants who passed the BLT and decided to continue in the program will then sign a Letter of Intent (LOI) indicating which track they have chosen to pursue. Meanwhile, those who decided to withdraw in the program shall sign a waiver form, while those who did not pass the post-training assessment will be given another chance, subject to reassessment. Participants who choose the MD track will proceed to the SLP Formation phase, wherein they will undergo Leadership Training and Organization Building. EF participants, on the other hand, will be issued a Certificate of Eligibility to receive grants from DSWD, and will then proceed to project proposal development.

4.3. Deviations from the implementation guidelines

Majority of the selected IPDOs consider the conduct of the initial SLP assembly as the first stage in SLP implementation. Out of the 49 IPDOs, only 29 have mentioned an activity related to project area and participant identification stage.

During the initial assembly phase, 77.6% mentioned that they assess the participants' qualifications and/or administer the PQAF, 61.2% perform desk analysis of the PQAF, 38.8% do name matching of non-*Pantawid* participants to the *Listahanan*, while 20.4% do the SLP means test for participants not listed in the *Listahanan*. These percentages are based on what the participants wrote or indicated in the questionnaire. While there are low percentages in some steps, all IPDOs mentioned that they conduct an initial SLP assembly; however, not all have specified the steps that they undergo during this stage.

Interestingly, while the guidelines specify the use of PQAF in assessing the participants' qualifications, some IPDOs also conduct background investigations to further assess eligibility participants. Moreover, there are IPDOs who also conduct name matching with other line agencies such as the DA, BFAR and LGU lists. These additions to the process, according to them, provide more information that can be used for a more thorough assessment of the participants' eligibility.

Most of the deviations to the implementation guidelines happen during the social preparation stage. The most common of them is the sequence of activities executed during this stage. For instance, there are 4 IPDOs who administer the LOI as early as during the conduct of the second assembly. Based on the chosen track specified in the LOI, the participants will then undergo the track-specific training during the BLT (i.e. MEDT for MD participants, BEST for EF participants).

Around 26.5% of the IPDOs, majority of which were from Region XII, conduct pre-training assessment before the conduct of BLT. This addition to the guidelines, according to them,

provides an initial assessment of their current experience and capacities related to managing and enterprise or job application. This information helps these IPDO in conducting tailored trainings during the BLT.

Although there is a guideline issued by DSWD-SLP, these observations imply that there are modifications in the process being implemented by IPDOs in the cities/municipalities. One of the reasons for these deviations is that IPDOs listed only in the questionnaire the general steps in SLP implementation. This suggests that either the IPDOs infer when they mentioned the main stages that they perform the specific tasks under each stage, or they simply do not do the steps that they did not mention. The latter implies that there are no clear instructions given to the IPDOs beside the issued interim guidelines. A step-by-step checklist might be helpful in making the implementation process uniform across the cities/municipalities.

5. Key findings from the survey

The survey covered a total of 1,182 respondents – 542 of which were beneficiaries under the EF track, while the remaining 640 were under the MD track. Out of the 640 MD beneficiaries, 390 established or expanded an individual enterprise, 220 have group enterprise, and 30 engaged in both individual and group businesses. Given the definition of success described in Section 3, 79.5% of the respondents either have an operating SLP-assisted enterprise or any employment for at least 6 months.

Table 8. Distribution of 2015 SLP beneficiaries, by SLP track and success status

SLP Track	Total	Successful		Unsuccessful	
		n	%	n	%
Employment Facilitation (EF)	542	356	65.7	186	34.3
Microenterprise Development (MD), Individual	390	363	93.1	27	6.9
Microenterprise Development (MD), Group	220	199	90.5	21	9.5
Microenterprise Development (MD), Both*	30	22	73.3	8	26.7
Individual business	30	28	93.3	2	6.7
Group business	30	23	76.7	7	23.3
Total	1,182	940	79.5	242	20.5

Source of basic data: Survey of 2015 SLP beneficiaries, October 2017

*For the succeeding tables and discussions, successful MD (both) are respondents with both successful individual and group businesses; otherwise, unsuccessful.

The success rates for the EF and MD tracks are at 65.7% and 91.3%, respectively. Among the MD track, beneficiaries who established individual businesses have higher success rates at 93.1% compared to those with group businesses at 90.5%. The same is also true for MD beneficiaries with both individual and group businesses at 93.3% and 76.7%, respectively.

5.1 Profile of respondents

Generally, MD beneficiaries are older than EF beneficiaries. In terms of success status, younger beneficiaries for EF and MD (individual) tracks, while older beneficiaries for MD (group and both) tend to be more successful. This reflects that younger beneficiaries are more employable while more mature beneficiaries (with more experiences) tend to be successful in business.

Table 9. Average age of 2015 SLP beneficiaries, by SLP track and success status

SLP Track	Successful	Unsuccessful	Total
EF	37.1	42.1	38.8
MD, Individual business	44.2	48.9	44.5
MD, Group business	46.2	39.1	45.6
MD, Both	44.6	41.3	43.7
Total	41.9	42.6	42.1

Source of basic data: Survey of 2015 SLP beneficiaries, October 2017

On the average, SLP beneficiaries have of 8.4 years of formal schooling or around 2nd to 3rd year high school level. Successful beneficiaries have higher years of formal schooling at around 7.5-9 years (high school level), with EF beneficiaries having the highest average at 8.9 years.

Table 10. Average years of formal schooling of 2015 SLP beneficiaries, by SLP track and success status

SLP Track	Successful	Unsuccessful	Total
EF	8.9	8.0	8.6
MD, Individual business	8.1	7.5	8.1
MD, Group business	8.5	7.9	8.4
MD, Both	7.7	7.3	7.6
Total	8.5	7.9	8.4

Source of basic data: Survey of 2015 SLP beneficiaries, October 2017

In terms of track selection, majority of the respondents chose the track they were currently in, at 83.8% for EF and 94.2% for MD. This results conflicts with the process that the participant chose the track that they will pursue.

Table 11. Proportion of 2015 SLP beneficiaries by SLP track and track of choice

SLP Track	Same choice of track	Difference choice of track
EF	83.8	16.2
MD	94.2	5.8
Total	89.4	10.6

Source of basic data: Survey of 2015 SLP beneficiaries, October 2017

Success rates of those who chose the same track as they were in are relatively higher than those who chose a different track. This means that choice, which can be a proxy for the individual's own assessment of his/her characteristics and capabilities, is a very important factor to consider in selecting the SLP track for the beneficiary.

Table 12. Proportion of 2015 SLP beneficiaries by SLP track, track of choice, and success status

SLP Track	Same choice of track		Difference choice of track	
	Successful	Unsuccessful	Successful	Unsuccessful
EF	66.7	33.3	60.2	39.8
MD	91.4	8.6	89.2	10.8
Total	80.8	19.2	68.8	31.2

Source of basic data: Survey of 2015 SLP beneficiaries, October 2017

There is a significantly small percentage of respondents who have previous training at 11.3%, while around half of the respondents have previous work or business experience at 45.3% and 58.5%, respectively. Previous training/work/business experience refers to any trainings attended, jobs, or businesses established before the receipt of SLP assistance.

Table 13. Proportion of 2015 SLP beneficiaries with previous training, work and business experience, by SLP track

SLP Track	n	With previous training	With previous work	With previous business
EF	542	10.0	26.9	57.0
MD, Individual	390	11.3	60.0	66.9
MD, Group	220	15.9	62.7	45.9
MD, Both	30	3.3	60.0	70.0
Total	1,182	11.3	45.3	58.5

Source of basic data: Survey of 2015 SLP beneficiaries, October 2017

Previous trainings attended by SLP beneficiaries are mostly technical-vocational or social awareness trainings. Among the common technical-vocational trainings are agricultural and fisheries sector skills, which are usually on farm and livestock production, and health, social and other community development sector skills, such as first aid and disaster training, and training for security guards, among others.

Table 14. Proportion of 2015 SLP beneficiaries, by SLP track and type of previous trainings attended

SLP Track	Tech-Voc	Business	Interpersonal	Awareness	Others
EF	50.0	5.6	20.4	35.2	9.3
MD, Individual	54.5	6.8	34.1	31.8	4.5
MD, Group	48.6	17.1	28.6	31.4	14.3
MD, Both	0.0	0.0	100.0	0.0	0.0
Total	50.7	9.0	27.6	32.8	9.0

Source of basic data: Survey of 2015 SLP beneficiaries, October 2017

Success rates of each SLP track with previous training/work/business experience are at 84.3%, 85.6% and 78.8%, respectively. For the EF track, 73.3% of those with previous work experience were successful, while 93.5% of MD beneficiaries with previous business experience were successful.

Table 15. Proportion of 2015 SLP beneficiaries with previous training, work and business experience, by SLP track and success status

SLP Track	With previous training		With previous work		With previous business	
	Successful	Unsuccessful	Successful	Unsuccessful	Successful	Unsuccessful
EF	66.7	33.3	73.3	26.7	60.5	39.5
MD, Individual	97.7	2.3	91.9	8.1	95.4	4.6
MD, Group	94.3	5.7	89.9	10.1	92.1	7.9
MD, Both	100.0	0.0	72.2	27.8	76.2	23.8
Total	84.3	15.7	85.6	14.4	78.8	21.2

Source of basic data: Survey of 2015 SLP beneficiaries, October 2017

5.2. Livelihood of MD beneficiaries

Majority of businesses, whether individual or group, setup or expanded through SLP operated for 24 months or more, having an average lifespan of 22.6 and 20.0 months, respectively.

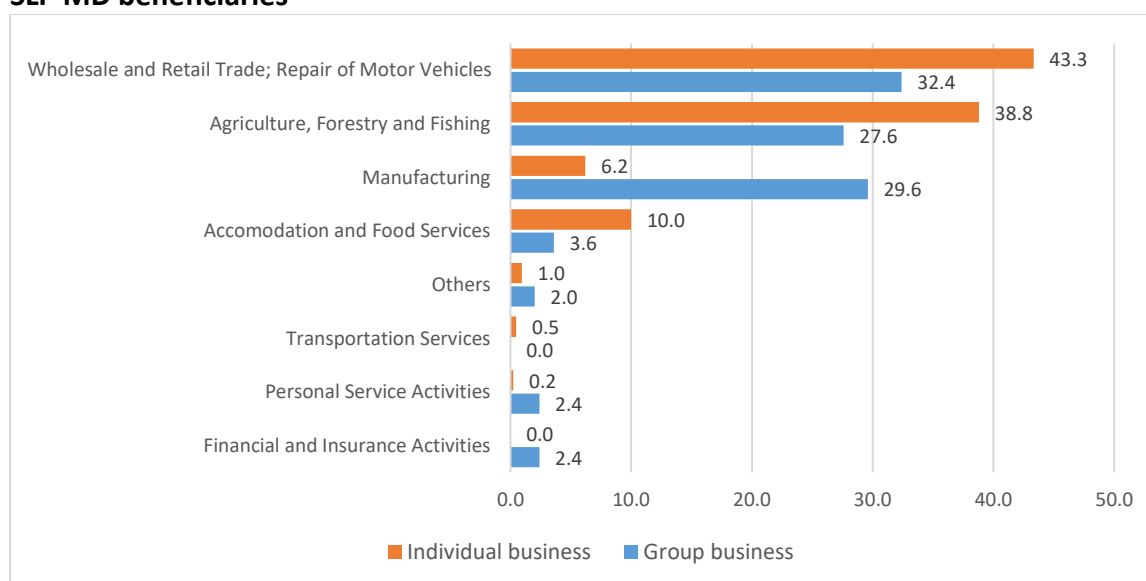
Table 16. Lifespan of SLP-assisted business setup/expanded by 2015 SLP MD beneficiaries, by type of business

Life span of SLP-funded business	Individual business, %	Group business, %
0 to < 3 months	1.4	4.0
3 to < 6 months	5.5	7.2
6 to < 12 months	11.4	10.4
12 to < 18 months	8.8	18.4
18 to < 24 months	10.7	12.0
24 months or more	62.1	48.0

Source of basic data: Survey of 2015 SLP beneficiaries, October 2017

Wholesale and retail trade-related businesses were commonly setup or expanded by MD beneficiaries, regardless of whether it is an individual or group enterprise, at 43.3% and 32.4%, respectively. Another common type of SLP-assisted businesses is agricultural in nature. These types of business are typically easy to setup and does not need specialized trainings. It is also important to note that manufacturing businesses are usually setup as a group business. Manufacturing enterprise usually requires a variety of skills, which can easily be satisfied by a group compared to an individual.

Figure 3. Types of SLP-assisted individual and group business setup or expanded by 2015 SLP MD beneficiaries



Source of basic data: Survey of 2015 SLP beneficiaries, October 2017

Livestock/poultry production, sari-sari stores, and retail selling of food comprise 57.6% of MD beneficiaries who setup or expanded an individual enterprise. Average lifespan of these businesses exceeds 20 months, which explains the high success rate of MD (individual) beneficiaries at 93.1%. Other common individual enterprises are crop production, food stands or food carts, and other retail trade business.

Table 17. Types of SLP-assisted individual businesses and average months of operation

Types of SLP-funded individual businesses	%	Average months
Wholesale and Retail Trade; Repair of Motor Vehicles	43.3	22.7
Retail Selling in Sari-Sari Stores	18.3	22.6
Retail Selling of Food	14.3	25.6
Other Wholesale/Retail Trade	5.0	23.6
Retail Selling of Textiles, Clothing and Footwear	2.9	16.9
Rice Wholesale/Retail Trade	1.9	15.1
Retail Selling of Appliances, Furniture, Arts and Handicrafts	0.5	2.0
Maintenance and Repair of Motor Vehicles and Parts	0.5	15.5
Agriculture, Forestry and Fishing	38.8	22.1
Livestock/Poultry Production	25.0	21.9
Crop Production	9.3	24.3
Fishing and Aquaculture	2.9	22.9
Vermiculture	1.2	9.4
Farm Support Activities	0.5	19.5
Accommodation and Food Services	10.0	19.4
Food Stand/Cart	8.3	18.9
Canteen/Carinderia	1.7	21.9
Manufacturing	6.2	28.9
Food Processing or Preservation	2.4	27.5
Manufacture of Wood Products, Furniture, Arts and Handicrafts	1.9	29.6
Manufacture of Apparel, Textiles, Leather and Related Products	1.4	30.0
Manufacture of Transport Equipment	0.2	34.0
Repair and Installation of Equipment	0.2	25.0
Transportation Services	0.5	28.5
Taxi, AUV, Jeepney, Tricycle, Pedicab Operation	0.2	34.0
Vehicle-for-Hire Services	0.2	23.0
Personal Service Activities	0.2	26.0
Wellness Services	0.2	26.0
Others	1.0	26.8
Total	100.0	22.6

Source of basic data: Survey of 2015 SLP beneficiaries, October 2017

Group businesses, on the other hand, are mostly livestock/poultry production (16.0%), food processing or preservation (12.8%), or retail selling in sari-sari stores (10.8%). Average lifespan of group business setup or expanded through SLP is at 20.0 months, which is lower than the 22.6-month average of SLP-assisted individual businesses.

Table 18. Types of SLP-assisted group businesses and average months of operation

Types of SLP-funded group businesses	%	Average months
Wholesale and Retail Trade; Repair of Motor Vehicles	32.4	20.9
Retail Selling in Sari-Sari Stores	10.8	22.3
Rice Wholesale/Retail Trade	9.6	18.8
Other Wholesale/Retail Trade	8.4	24.6
Retail Selling of Food	2.8	13.7
Retail Selling of Textiles, Clothing and Footwear	0.8	12.0
Manufacturing	29.6	19.5

Food Processing or Preservation	12.8	18.3
Manufacture of Apparel, Textiles, Leather and Related Products	6.8	21.9
Manufacture of Wood Products, Furniture, Arts and Handicrafts	6.4	18.5
Manufacture of Construction, Rubber, Plastic and Related Products	2.4	24.8
Manufacture of Other Products	1.2	13.0
Agriculture, Forestry and Fishing	27.6	18.7
Livestock/Poultry Production	16.0	21.2
Crop Production	8.4	15.5
Farm Support Activities	2.4	14.3
Fishing and Aquaculture	0.4	8.0
Vermiculture	0.4	24.0
Accommodation and Food Services	3.6	22.6
Canteen/Carindaria	3.2	24.3
Food Stand/Cart	0.4	9.0
Financial and Insurance Activities	2.4	18.7
Money Lending	2.0	15.8
Pawnshop Operations	0.4	33.0
Personal Service Activities	2.4	27.0
Water Refilling Station	2.4	27.0
Others	2.0	19.2
Total	100.0	20.0

Source of basic data: Survey of 2015 SLP beneficiaries, October 2017

5.3. Employment of EF beneficiaries

A high percentage of SLP-assisted employment lasted from 6-12 months or 24 months or more at 21.5% and 24.7%, respectively. Average months employed in SLP-assisted job is 12.1 months. Moreover, the average months of employment since the start of the SLP-assisted job is at 13.1 months. This means that many did not find other employment opportunities after the receipt of SLP assistance in 2015.

Table 19. Duration of employment in SLP-assisted job and total employment experience since the onset of SLP assistance

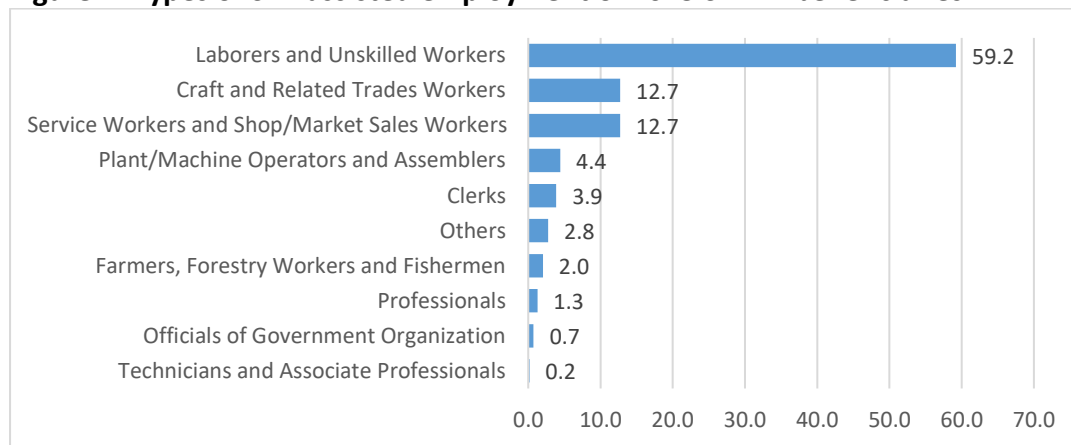
Duration of employment	SLP-assisted job	Any employment since SLP job
0 to < 3 months	20.7	19.0
3 to < 6 months	19.0	15.3
6 to < 12 months	21.0	21.4
12 to < 18 months	10.3	12.2
18 to < 24 months	6.5	7.4
24 months or more	22.5	24.7

Source of basic data: Survey of 2015 SLP beneficiaries, October 2017

Most of SLP-assisted employment fall under the laborers and unskilled workers category (59.2%) followed by craft and related trades workers (12.7%) and service workers and sales workers (12.7%). Specifically, majority of SLP-assisted employment were laborers (unspecified), at 28.5%, which, on the average, were only employed for 6.4 months. Other common employment acquired through the SLP are mining and construction laborers (e.g. road

maintenance workers), refuse workers (e.g. street cleaners and sweepers), and building frame and related trades workers (e.g. masons, carpenters).

Figure 4. Types of SLP-assisted employment of 2015 SLP EF beneficiaries



Source of basic data: Survey of 2015 SLP beneficiaries, October 2017

Table 20. Types of SLP-assisted employment and average months employed

Types of SLP-assisted employment	%	Average months
Laborers and Unskilled Workers	59.2	10.0
Laborers, Unspecified	28.6	6.4
Mining and Construction Laborers	17.9	13.0
Refuse Workers	4.6	11.0
Domestic, Hotel and Office Cleaners and Helpers	3.1	20.4
Agricultural, Forestry and Fishery Laborers	3.0	12.1
Manufacturing Laborers	1.8	12.1
Other Elementary Workers	0.2	35.0
Service Workers and Shop/Market Sales Workers	12.7	18.3
Sales Workers	3.3	18.1
Protective Services Workers	2.8	14.5
Personal Care Workers in Health Services	1.7	22.2
Cashiers and Ticket Clerks	1.5	19.8
Waiters and Bartenders	1.1	15.7
Hairdressers, Beauticians and Related Workers	0.9	22.2
Child Care Workers and Teachers' Aides	0.9	16.6
Other Sales Workers	0.6	23.7
Craft and Related Trades Workers	12.7	12.7
Building Frame and Related Trades Workers	4.6	16.2
Sheet and Structural Metal Workers, Molders and Welders, and Related Workers	3.9	10.7
Garment and Related Trades Workers	2.0	4.1
Food Processing and Related Trades Workers	0.6	29.3
Machinery Mechanics and Repairers	0.6	9.3
Blacksmiths, Toolmakers and Related Trades Workers	0.4	5.0
Electrical Equipment Installers and Repairers	0.4	16.5
Building Finishers and Related Trades Workers	0.2	34.0
Painters, Building Structure Cleaners and Related Trades Workers	0.2	7.0
Plant/Machine Operators and Assemblers	4.4	12.0

Stationary Plant and Machine Operators	2.6	10.6
Assemblers	1.7	12.8
Locomotive Engine Drivers and Related Workers	0.2	26.0
Clerks	3.9	20.4
General Office Clerks	1.5	31.0
Client Information Workers	1.3	10.3
Clerks, Unspecified	1.1	18.2
Farmers, Forestry Workers and Fishermen	2.0	11.5
Plant Farmers and Other Plant Growers	1.1	12.8
Forestry and Related Workers	0.7	4.0
Fishermen	0.2	33.0
Professionals	1.3	14.0
Teaching Professionals	1.1	15.8
Finance Professionals	0.2	3.0
Officials of government organization, corporate executives, managers/proprietors, supervisors	0.7	9.0
Technicians and Associate Professionals	0.2	8.0
Artistic, Cultural and Culinary Associate Professionals	0.2	8.0
Others	2.8	14.9
Total	100.0	12.1

Source of basic data: Survey of 2015 SLP beneficiaries, October 2017

Moreover, majority of SLP-assisted employment are in the public sector. Common employers mentioned by the EF beneficiaries include the Department of Public Works and Highways (DPWH), DSWD through its Kapit-Bisig Laban sa Kahirapan-Comprehensive and Integrated Delivery of Social Services (Kalahi-CIDSS)⁶ and CBLA programs, and provincial and local governments.

Table 21. Class of work of SLP-assisted employment, by success status

Class of work	%	Successful	Unsuccessful
Worked for government/-controlled corporations	61.6	59.3	40.7
Worked for private establishment	33.4	75.7	24.3
Worked for private household	3.7	80.0	20.0
Worked with pay in own family-operated farm/business	0.6	100.0	0.
Unspecified	0.7	50.0	50.0
Total	100.0	-	-

Most of the SLP-assisted employment are classified as short-term, seasonal or casual (79.9%). This is because public employment offered by the program through its partnership with the different national government agencies (NGAs) are on a short term basis or have a job order status only. For instance, EF track participants employed in the DPWH are hired for 6 months on a job order status under the department's Trabahong Lansangan Program⁷. Aside from DPWH, the Department of Environment and Natural Resources (DENR) and the Department of Agriculture (DA) have also partnered with DSWD for the employment of EF track participants, under the National Greening Program (NGP and the CBLA program, respectively.

⁶ Kalahi-CIDSS is one of the poverty alleviation programs of the DSWD which uses a community-driven development approach to empower barangays and communities in order to achieve improved access to services and to participate in a more inclusive local planning, budgeting and implementation.

⁷ The Trabahong Lansangan Program of the DPWH consists of public works and infrastructure projects. The partnership between the DSWD and DPWH allots 40% of the required number of workers of the program to the EF track participants. EF beneficiaries, under this program, receives above-minimum wage salaries funded by DSWD.

Table 22. Nature of employment of SLP-assisted employment, by success status

Nature of employment	%	Successful	Unsuccessful
Short-term, seasonal or casual	79.9	66.7	33.3
Permanent	7.0	68.4	31.6
Worked for different employer from week to week basis	1.1	83.3	16.7
Unspecified	12.0	55.4	44.6
Total	100.0	-	-

Source of basic data: Survey of 2015 SLP beneficiaries, October 2017

6. Development of a characteristics-based sorting tool

The sorting tool computes the participant's probability of success in each of the SLP track (i.e. EF, MD-Individual business, MD-Group business) given his/her personal and background information, and personality traits. Computations on the success probabilities are based on the results of the logit estimations.

6.1. Logit estimation results

Logit estimation is performed on the subset of 1,000 respondents composed of three groups of beneficiaries (i.e. EF, MD with individual business, and MD with group business), with the dependent variable as a dummy of the success status (1-successful, 0-unsuccessful) using the cutoff of 6 months. The independent variables vary by group to account for factors that affect employment vis-à-vis entrepreneurship. The remaining subset of 182 is used to test the predictive power of the estimated model.

6.1.1. Microenterprise Development beneficiaries with individual enterprise

Independent variables used for the MD individual group include personal information (i.e. age, educational attainment, and previous business and training experiences), track of choice of the respondent, scores on various personality traits, and selected community-level variables from the CMCI.

Table 23. Logit estimation results for MD-track beneficiaries with individual enterprise

	Coefficient	Std. Error
Age*	-0.0490258	0.0260609
Years of formal education	0.0500257	0.0837204
SLP chosen track is MD**	1.557729	0.7950918
With previous business experience***	1.393539	0.4680743
With previous training experience	1.14822	1.066922
Trait: Factor 1	-0.5660742	0.4249494
Trait: Factor 2	0.2448441	0.2690386
Trait: Factor 3	0.0959763	0.2424423
Trait: Factor 4**	0.2953162	0.1499063
Cost of Doing Business index*	-0.7643483	0.4122604
Financial Institutions index	0.1429751	0.4484681
Business Registration Efficiency index	0.2202806	0.3332636
Infrastructure index	0.2208187	0.1469309
_cons	2.962759	2.647518

Source: Authors' calculations

Note: Significant at *** 0.01, ** 0.05, * 0.10 level.

Results show that age and previous business experience significantly contribute to the probability of success of a respondent in case he/she wants to participate in the MD track and establish an individual enterprise. In addition, participants in municipalities with lower costs of doing business and risk takers (factor 4) are more likely to be successful entrepreneurs.

Table 24. Goodness-of-fit tests for logit estimation on MD individual beneficiaries

Model prediction	Actual success status					
	Estimation			Testing		
	Successful	Unsuccessful	Total	Successful	Unsuccessful	Total
Successful	330	22	352	59	5	64
Unsuccessful	1	2	3	1	0	1
Total	331	24	355	60	5	65
Correctly classified	93.52%			90.77%		

Source: Authors' calculations

The estimated model for MD individual group correctly classified 93.5% of the 355 MD (individual) respondents used for estimation, and has correctly predicted 90.8% out of 65 MD (individual) respondents used for testing.

6.1.2. Microenterprise Development beneficiaries with group enterprise

Independent variables used for the MD group beneficiaries include personal information (i.e. age, educational attainment, and previous business and training experiences), a dummy variable on whether the respondent have a household member or relative with business, scores on various personality traits, and selected community-level variables from the CMCI.

Table 25. Logit estimation results for MD-track beneficiaries with group enterprise

	Coefficient	Std. Error
Age***	0.0755107	0.024959
Years of formal education	0.0301445	0.085025
With previous business experience	0.1932237	0.484327
With previous training experience	0.8991352	0.85453
Business exposure, relatives	0.6663358	0.511477
Trait: Factor 1	0.1699817	0.367656
Trait: Factor 2	-0.3234797	0.330736
Trait: Factor 3	-0.1777927	0.246054
Trait: Factor 4	0.0270712	0.152204
Cost of Doing Business index*	-0.7042748	0.397498
Government Efficiency index	0.09108	0.069573
Infrastructure index	0.2775623	0.17793
_cons	-1.489976	2.300995

Source: Authors' calculations

Note: Significant at *** 0.01, ** 0.05, * 0.10 level.

Similar to the result on individual enterprise, age significantly contributes to the probability of success of a respondent with entrepreneurial intent and wants to establish a group enterprise.

Also, participants in municipalities with lower costs of doing business) are more likely to be successful entrepreneurs.

It is also interesting to note that none of the traits were significant in the estimation. This reflects that a success of a group enterprise does not depend on the personality of an individual member. Significant factors to this might be the group members' skills and capacity to learn. However, these factors were not asked in the survey questionnaire.

Table 26. Goodness-of-fit tests for logit estimation on MD group beneficiaries

Model prediction	Actual success status					
	Estimation			Testing		
	Successful	Unsuccessful	Total	Successful	Unsuccessful	Total
Successful	184	23	207	36	2	38
Unsuccessful	1	3	4	1	0	1
Total	185	26	211	37	2	39
Correctly classified	88.63%			92.31%		

Source: Authors' calculations

The estimated model for MD group correctly classified 88.6% of the 211 MD (group) respondents used for estimation, and has correctly predicted 92.3% out of 39 MD (group) respondents used for testing.

6.1.3. Employment Facilitation beneficiaries

Independent variables used for the EF group include personal information (i.e. age, location, educational status, previous work experience, and current employment status), track of choice of the respondent, scores on various personality traits, and selected community-level variables from the CMCI.

Table 27. Logit estimation results for EF-track beneficiaries

	Coefficient	Std. Error
Age***	-0.0294042	0.0097958
Urban/Rural Classification**	0.8598693	0.3449419
At least HS graduate***	0.8755308	0.2307236
SLP chosen track is EF	0.4524555	0.2868993
With previous work experience	0.3836749	0.2687558
Currently employed**	0.5826375	0.2415409
Trait: Achievement score*	0.1928157	0.1048111
Trait: Locus of Control score**	-0.2872821	0.145933
Trait: Polychronicity	-0.1740848	0.1779912
Trait: Passion for Work score	0.2322658	0.3553253
Trait: Work Centrality score	0.3370543	0.3408012
Trait: Factor 1	-0.2481224	0.1794315
Trait: Factor 2	-0.0654498	0.1537027
Trait: Factor 3	0.0160889	0.1100429
Trait: Factor 4	-0.0944142	0.0722705
Local Economy Growth index	0.9847192	0.8493489
Jobs index	0.0139102	0.0832696
Government Efficiency index	0.0112189	0.0312905

Infrastructure index	0.0738633	0.0575159
_cons	0.8565637	1.04321

Source: Authors' calculations

Note: Significant at *** 0.01, ** 0.05, * 0.10 level.

As expected, age, location and educational attainment of a participant significantly contributes to the probability of success of a respondent that wants to pursue the EF track. Current employment status, defined as having a job or business within the past week before the receipt assistance from SLP, is also significant. Younger individuals are highly employable compared to the older ones. Also, employers generally prefer individuals with higher level of education. Location, on the other hand, generally reflects the availability of jobs in the area.

For the traits, only achievement and internal locus of control were significant in the estimation. This means that a participant with high desire to do well, high sense of competitiveness, or unwillingness to take risks will have a higher probability of being a successful EF beneficiary.

Table 28. Goodness-of-fit tests for logit estimation on EF beneficiaries

Model prediction	Actual success status					
	Estimation			Testing		
	Successful	Unsuccessful	Total	Successful	Unsuccessful	Total
Successful	270	88	358	45	22	67
Unsuccessful	34	67	101	7	9	16
Total	304	155	459	52	31	83
Correctly classified	73.42%			65.06%		

Source: Authors' calculations

The estimated model for employment facilitation correctly classified 73.4% of the 459 EF respondents used for estimation, and has correctly predicted 65.1% out of 83 EF respondents used for testing.

The predictive power of the model for the EF track is fairly low compared to that of the MD track. This might be due to the lack of indicators on the community variables and employer preferences that affect employability of individual. Addition of these variable will likely improve the predictive power of the model.

6.2. SLP sorting tool

The sorting tool gathers a participant's personal and background information, and personality traits. The set-up is similar to a survey questionnaire. It is formatted as a Macro-Enabled Excel file.

The questionnaire consists of three parts: (1) identification and other information, (2) participant background, and (3) personality traits. Part 1 gathers the respondent's personal, household and other information such as sex, date of birth, address and highest grade completed. Part 2 consists of questions on the participant's background and previous training, work and business experience/s. Lastly, Part 3 is composed of a series of statements describing the respondent's personality, which is similar to the list of statements used in the Survey of 2015 SLP beneficiaries.

Figure 5. Interface of the sorting tool

Identification and Other Information

Name: <input style="width: 90%;" type="text" value="DELA CRUZ, JUAN JR., SANTOS"/>		Choice: <input checked="" type="radio"/> Employment Facilitation <input type="radio"/> Microenterprise Development
Sex: <input checked="" type="radio"/> Male <input type="radio"/> Female	Date of Birth: <input style="width: 20px;" type="text" value="01"/> <input style="width: 20px;" type="text" value="01"/> <input style="width: 40px;" type="text" value="1980"/> <small>MM DD YYYY</small>	Civil Status: <input type="radio"/> Single <input type="radio"/> Divorced/Separated <input type="radio"/> Widowed <input checked="" type="radio"/> Married <input type="radio"/> Common Law/Live-in <input type="radio"/> Unknown
Address: <input style="width: 95%;" type="text" value="NCR - National Capital Region"/> <small>Region</small> <input style="width: 95%;" type="text" value="NCR, Fourth District"/> <small>Province</small> <input style="width: 95%;" type="text" value="Pasay City"/> <small>City/Municipality</small> <input style="width: 95%;" type="text" value="Barangay 99"/> <small>Barangay</small> <input style="width: 95%;" type="text" value="BLOCK 9 LOT 99 SAMPAGUITA ST."/> <small>House/Lot Number, Street, Purak Name</small>	Contact Details: <input style="width: 80%;" type="text" value="09XX-XXXXXXX"/> <small>*telephone/mobile numbers, email address</small>	
Highest Grade Completed:		
<input type="radio"/> No Grade Completed <input type="radio"/> Grade 1 <input type="radio"/> Grade 7 (1st Year HS) <input type="radio"/> Technical/Vocational Undergraduate <input type="radio"/> Preschool <input type="radio"/> Grade 2 <input type="radio"/> Grade 8 (2nd Year HS) <input type="radio"/> Technical/Vocational Graduate <input type="radio"/> Grade 3 <input type="radio"/> Grade 9 (3rd Year HS) <input type="radio"/> 1st Year College <input type="radio"/> Grade 4 <input type="radio"/> Grade 10 (4th Year HS) <input type="radio"/> 2nd Year College <input type="radio"/> Grade 5 <input type="radio"/> Grade 11 <input type="radio"/> 3rd Year College <input type="radio"/> Grade 6 <input type="radio"/> Grade 12 <input type="radio"/> 4th Year College or higher <input type="radio"/> Elementary Graduate <input checked="" type="radio"/> High School Graduate <input type="radio"/> College Graduate <input type="radio"/> Post-Graduate (MA, Ph.D.)		

Participant Background

1 Do you currently have a job or business?	<input checked="" type="radio"/> Yes <input type="radio"/> No
2 Did you attend any training from 2013 to present?	<input checked="" type="radio"/> Yes, select all that apply: <input style="width: 150px;" type="text" value="TechVoc - Automotive and land"/> <input type="radio"/> No
3 Do you have any experience in working as an employee from 2013 to present?	<input checked="" type="radio"/> Yes, select all that apply: <input style="width: 150px;" type="text" value="Clerks Laborers and unskilled"/> <input type="radio"/> No
4 Did you engage in any type of business from 2013 to present?	<input checked="" type="radio"/> Yes, select all that apply: <input style="width: 150px;" type="text" value="Manufacturing Transportation"/> <input type="radio"/> No
5 Did any household member or relative operate any business from 2013 to present?	<input type="radio"/> Yes <input checked="" type="radio"/> No
6 Did you know any friend or neighbor who was operating a business from 2013 to present?	<input checked="" type="radio"/> Yes <input type="radio"/> No

Personality Traits

Rate how much you agree or disagree with each statement below:

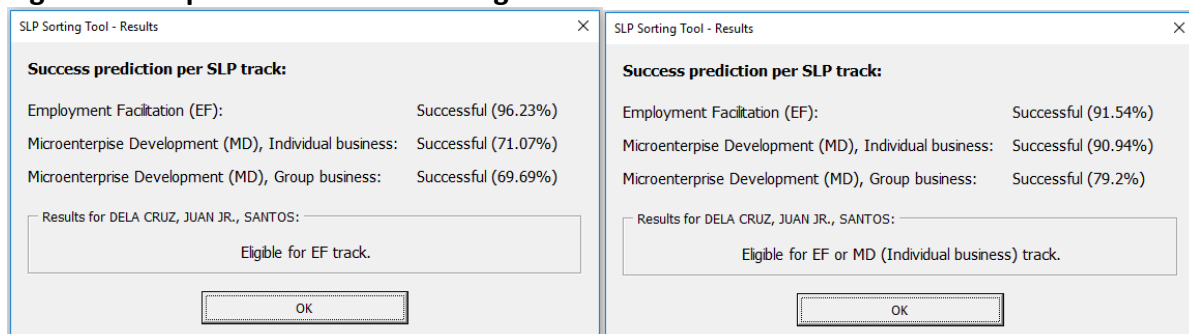
	Disagree strongly	Disagree	Somewhat disagree	Somewhat agree	Agree	Agree strongly
1 A person can get rich by taking risks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
2 Part of my enjoyment in doing things is improving my past performance.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
3 I look forward to returning to my work when I am away from work.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4 When a group I belong to plans an activity, I would rather direct it myself than just help out and have someone organize it.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5 I believe it is best to complete one task before beginning in another.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
6 I would rather complete an entire project every day than complete parts of several projects.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
7 It is difficult to know who my real friends are.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8 It is important to me to perform better than others on a task.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
9 It is important for me to do whatever I'm doing as well as I can even if it isn't popular with people around me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
10 I never try anything I am not sure of.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
11 I try harder when I'm in competition with other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
12 The most important thing that happens in life involves work.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13 I like to juggle several activities at the same time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
14 I like being my own boss.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15 I like to cope with business risks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
16 I like having people whose work and income depends on me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
17 It is alright to not have steady income every month.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18 I want to be able to do what I like.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
19 I like having the opportunities of earning more income.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
20 I like creating jobs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
21 I like to sell products or services to other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
22 I like learning about activities of a business or organization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
23 I like being proactive (i.e. with own initiative).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
24 I like to negotiate with others.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Source: Sustainable Livelihood Program Sorting Tool

6.3. Interpreting the results of the sorting tool

The sorting tool displays the computed probabilities of success in each track and the best suited track for the respondent by clicking the “Calculate” button. The respondent is tagged as “Successful” if the probability of success exceeds 50%. The best suited track for a participant is that one with the highest computed probability of success. Although SLP has only two tracks – EF and MD, the sorting tool also assesses whether the respondent will be more successful if he/she establishes an individual or group enterprise. On either case where the best suited track is MD individual business or group business, the respondent is recommended for the MD track.

Figure 6. Sample results of the sorting tool



Source: Sustainable Livelihood Program Sorting Tool

There will be cases that a participant is eligible for more than one track. This occurs when the probabilities of success of the second (or third) highest track is within 5% difference from the track with the highest success probability.

For the purpose of track selection, participants should be assigned to the best suited track identified by the sorting tool. If the participant is eligible for more than one track, track selection will be based on his/her preference from the identified best suited tracks.

7. Summary and Concluding Remarks

The Sustainable Livelihood Program (SLP) is one of the social protection programs of the Department of Social Welfare and Development (DSWD) that aims to provide livelihood opportunities to its targeted beneficiaries. The program offers two tracks of assistance, employment facilitation (EF) and microenterprise development (MD). The present system lets the participant choose the track of assistance based primarily on their preferences.

A survey of SLP beneficiaries show that among the EF beneficiaries, only 66 percent had jobs of at least 6 months during a two-year period. Moreover, only 44 percent of them managed to have work for at least 12 months over the same two-year period and only 32 percent and 25 percent were employed for at least 18 months and at least 24 months, respectively. The relatively lower success rates for EF could be associated with the employment opportunities in the locality. On the other, the success rates for MD beneficiaries were much higher. The proportion of those whose business operated for at least 6 months and at least 12 months were 93 percent and 81 percent, respectively. Only 73 percent and 63 percent of businesses lasted for at least 18 months and 24 months, respectively. The higher success rates for the MD

beneficiaries could be attributed to the relatively lower skills associated with the types of businesses financed by SLP, which are mainly retail trade and livestock raising.

A characteristics-based sorting tool was developed that assesses the best suited track for a participant using personal and background information, personality and characteristics of the community. This offers a more systematic way of assessing and doing track selection vis-à-vis the current system. Logit estimations were performed using a survey of 2015 SLP beneficiaries to estimate the probability of success for each track using individual and community variables. To facilitate the track selection for the DSWD Program Development Officers (PDOs), an Excel-based data capture system has been developed that can be used during the screening of beneficiaries. This automatically computes for the probability of success for each track and the recommended track is displayed.

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