

# Digitized Scoreboard: Its Use in the Implementation of Conditional Cash Transfer Program in One Province in the Philippines

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## Abstract

Conditional Cash Transfer Program is an effective way of the government to eradicate poverty. Philippines is one of the many developing countries implementing it since 2007 and named it as Pantawid Pamilyang Pilipino Program or 4Ps. The Department of Social Welfare and Development is the implementing and facilitating unit of the government which monitors the program. Recording, updating and managing the household beneficiaries and their activities were conducted by staff implementers on each municipality then data will be collected for consolidation in the provincial level. Everything was encoded manually in a spreadsheet application and carried out every month for reporting. With the increasing number of beneficiaries, challenges such as difficulty in monitoring beneficiaries' performance and consolidation of reports were repeatedly observed by the unit. This study focuses on the development of a digitized scoreboard for recording, updating and monitoring household beneficiaries. Consolidation of reports from municipal level up to provincial level is featured significantly. For the methodology, the researcher used the agile model to systematically design and develop the system. Then, training was conducted to assess the knowledge of target end-users with regards to managing and accessing the system. In addition, usability testing was administered to determine the usefulness, ease of use and learnability of the developed digitized scoreboard. Both the training and testing procedure were participated by 107 staff implementers in the province of Laguna and officers from regional office. The training evaluation result yield an overall mean of 3.84 which is interpreted as "Best". This means that the target end-users of the digitized scoreboard were pleased and appreciative on the content, methodologies, management team and presentation aid used during the training. Clearly, staff implementers were able to learn how to access, manage and manipulate the developed digitized scoreboard. Furthermore, testing results revealed that with the design and structure of the developed digitized scoreboard, staff implementers were able to record and update the information and conditionalities, monitor status, consolidate reports of household beneficiaries of Pantawid Program with ease of use, effectively, satisfactorily and with minimal supervision from technical experts. Thus, the developed digitized scoreboard is a useful system for the implementing unit of the government and an innovative way to do the tasks of each staff implementers in managing and monitoring the conditional cash transfer program household beneficiaries.

**Keywords**— Conditional cash transfer program, Department of Social Welfare and Development Staff Implementers, Digitized Scoreboard, Pantawid Pamilyang Pilipino Program

## I. INTRODUCTION

Conditional Cash Transfer (CCT) Program is considered to be as one of the effective programs of the government in terms of poverty

reduction and social protection strategies. It is one of the many ways of improving the way of life of people through cash grants. Every country implementing this type of program

claimed that it lifted the lives of millions of people [1].

The Philippines is one of the countries implementing the CCT program since 2007. Under the Republic Act No. 11310 [2], the program was named as Pantawid Pamilyang Pilipino Program or 4Ps. It is a national poverty reduction strategy and a human capital investment program that provides conditional cash transfer to poor households for a maximum period of seven years, to improve the health, nutrition and education aspect of their lives. Eligible beneficiaries are farmers, fisher-folks, homeless families, and indigenous people, those in the informal sector, those in geographically isolated areas and those in areas with no electricity. The conditional cash transfer will be given under the following scheme: P300 per month for a child in kindergarten and elementary school for a maximum of ten months per year; P500 per month for ten months for a child enrolled in junior high; P700 per month for ten months for every child enrolled in senior high school and a health and nutrition grant of P750.00 per month for 12 months per year. Pantawid Pamilyang Pilipino Program is facilitated by the Department of Social Welfare and Development (DSWD) office and considered as the Philippine government's poverty reduction and social protection strategy [3] [4].

Secretary of DSWD-Rolando Jose Bautista reported that since 2007, the Philippine government expanded the CCT program and as of November 2019 the program already reached a total of 20 million Filipinos belonging to 4 million households [5].

The implementation of CCT program follows several phases. Registration and verification of beneficiaries are the initial phases. Staff implementers are the ones who go to the field and meet the verified beneficiaries of each barangay or municipality face to face. All the beneficiaries are obligated to attend and participate in the conditionalities set by the program [6]. It comprises of monitoring the health of each beneficiary including pre and post-natal services for pregnant, 85%

attendance to school for 3 to 18 years old and attendance in family development session (FDS) [7]. Aside from all the types of grants received by the beneficiaries, the mode and period of payment, complaints such as payment-related issues and reduced grants are also monitored. Failure to comply with the conditionalities would be the bases of adjustment or even suspension of the cash grants. Each beneficiary together with his / her family members who are part of the program, their activities and performance are checked by the staff implementers using the designed worksheet and saving it is the way to record and monitor the status of each household beneficiary. The provincial office will then collect all reports obtained from each municipality called scoreboard consolidation [8].

The national government has this good intention and initiative towards the poverty alleviation through the 4Ps. However, because of the expansion and rapid pace of the program, there are various challenges and concerns when it comes to the process of recording and monitoring the household beneficiaries' activities. In the Province of Laguna, as of June 9, 2021 [9] there were 44, 642 active 4Ps beneficiaries within the 5 cities and 25 municipalities supported and monitored by the program, nonidentification of supposed beneficiaries, lack of data updating, tracking mechanism, storage and security were just several issues that need improvement for public integrity and managing resources [10]. Also, staff implementers from the said province mentioned that augmenting the way they do the process is advantageous and not only beneficial to them and even more to DSWD. Furthermore, adopting to a more augmented way to facilitate the process would not be difficult since most of the implementers are in competent age and knowledgeable in computer operations as assessed by the researcher in 2018 [11].

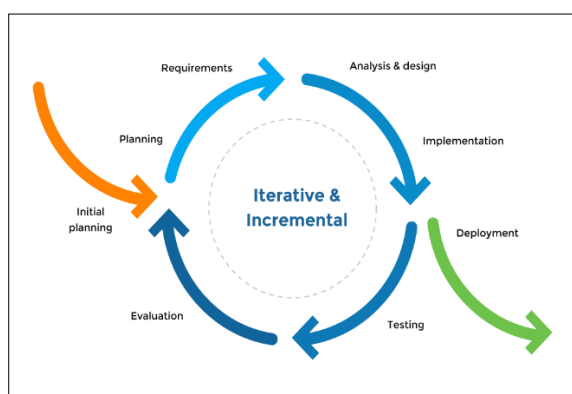
This research focuses on the development of digitized scoreboard for Philippines' Conditional Cash Transfer Program with the aim to manage and monitor record of all the

household beneficiaries' information, conditionalities, activities and their performance. Consolidation of the scoreboard through dashboard, statistics and pertinent reports are essentially incorporated in the system. In this context, using a digitized scoreboard would give the facilitating body of the program a more effective and efficient ways to monitor all the beneficiaries.

## II. MATERIALS AND METHODS

The researcher based its design and development approaches using the agile methodology specifically the iterative and incremental development model. The agile model is a combination of both iterative and incremental model by breaking a product into components where on each cycle or iteration, a working model of a component is delivered. The model produces ongoing releases (iterative), each time adding small changes to the previous release (iterative). During each iteration, as the product is being built, it is also tested to ensure that at the end of the iteration the product is shippable. The Agile model emphasizes collaboration, as the customers, developers and testers work together throughout the project [12].

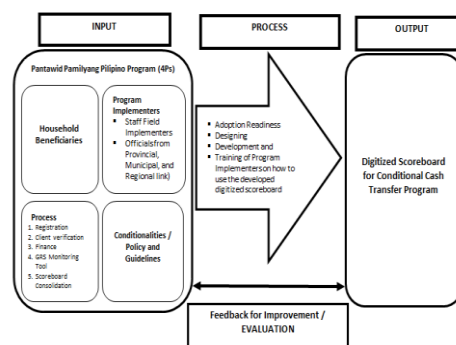
Bhavz Kakarla (2019) stated that there are several phases in the system design and development process [13] as shown in the Fig. 1



**Figure 1.** Agile Methodology

As shown in the Fig. 1, the first phase is the requirements phase. During this phase, the researcher was able to assess the process on how the conditional cash transfer program for household beneficiaries are being carried out, strengths and opportunities such as the level of

knowledge of staff implementers in computer operations and resources available. Assessment result can be illustrated in the Input-Process-Output (IPO) Model in Fig. 2.



**Figure 2.** IPO Model

The result of the assessment was the basis for the structure, design, requirements and resource specification and scope of the digitized scoreboard.

After all the requirements were identified, planning and designing the structure as to how the development were executed. Development tools such as Hypertext Preprocessor (PHP) to build web-based system and for managing content, WAMP Server to create database and tables, Sublime Text to write codes, Hypertext Mark-up Language (HTML) and Cascading Style Sheet to construct presentable webpages and MySQL to structurally manage the searching technique were all used to create the entire digitized scoreboard.

As the development of the scoreboard progresses, training on internet technology, database, web development and web-based system management was conducted. This is to prepare them in using the system.

Then, participants were assisted on how to manage and access the system. The scope of the digitized scoreboard was presented and demonstrated to the target end-users who are the staff implementers, then remote access was facilitated as well. Immediately after, they were asked to perform their usual task but this time using the system. The researcher observed the behavior, and noted their feedback while facilitating the training.

Using the LSPU Extension and Training Services Evaluation Form [14], the training regarding the management and how to use the

system was evaluated by the participants. Moreover, usability type of testing focusing on the criteria such as usefulness, ease of use, ease of learning and user satisfaction was administered. Both the training evaluation and usability testing were participated by 107 mostly are staff implementers from the province and few from regional office

Lastly, consultative meetings were arranged to synthesize the outcome of the development, testing and evaluation.

### III. RESULTS AND DISCUSSION

The research project is a significant initiative in implementing the CCT program. The developed digitized scoreboard would be beneficial to the implementing department of the program – Department of Social Welfare and Development and to all the staff implementers in improving the services of the program when it comes to tracking and monitoring the scoreboard of each household beneficiary.

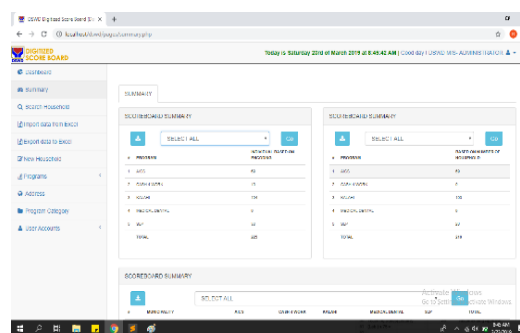


Figure 5. Record Summary Interface

Figure 3, 4 and 5 show the system main features of the developed system. Using the system, staff implementers who are main users in the municipal level can record all the household beneficiaries' information and their conditionalities and in the provincial level, consolidation of data is generated through dashboard or in matrix form and can only be accessed by the provincial link officer.

Furthermore, the development of digitized scoreboard made the staff implementers monitor household beneficiaries' activities and their performances in programs in which they participated. This would greatly help the implementers identify who among the beneficiaries are obediently following the conditionalities and can be evaluated as “can now independent sustain their needs on their own” and can be graduated from the program.

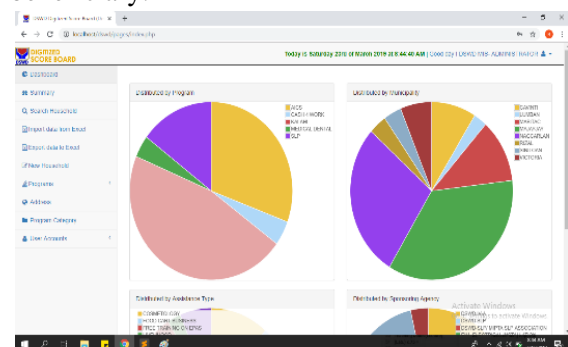


Figure 3. Scoreboard Dashboard

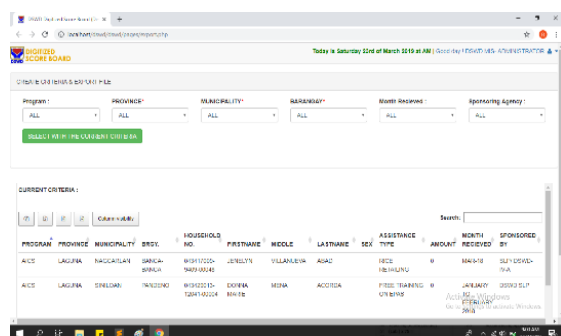


Figure 4. Select Criteria and Export File Interface

Table 1. Training Evaluation Result

Particulars	Mean	Interpretation
a) Meeting of expectations	3.84	Best
b) Attainment of objectives	3.81	Best
c) The training/workshop content	3.84	Best
d) The activities included	3.79	Best
e) Methodologies used	3.79	Best
f) Instructional/Presentation Aids	3.93	Best
g) Resource Persons	3.84	Best
h) Training Management Team	3.84	Best
i) Training Facilities and Services	3.84	Best
<b>Overall Mean</b>	<b>3.84</b>	<b>Best</b>

Table 1 shows the result of the training evaluation. Based on the evaluation, instructional or presentation aid got the highest rating which is 3.93 while meeting of expectations, training content, training management team, facilities and services acquired comparable rating of 3.84. While training contents and methodologies used gained 3.74. All the particulars in the training program acquired an interpretation of “Best” and gained an overall mean of 3.84. This only shows that staff implementers who attended the training learned to use the digitized scoreboard purposefully.

*Table 2. Testing Result*

Criteria	Mean	Interpretation
Usefulness	4.69	Strongly Agree
Ease of Use	4.52	Strongly Agree
Ease of Learning	4.52	Strongly Agree
Satisfaction	4.52	Strongly Agree
<b>Overall Mean</b>	<b>4.56</b>	<b>Strongly Agree</b>

Testing was administered to 107 staff implementers of the Pantawid in the province and regional office. This is to examine the usability and ask the target users if they agree on the performance of the digitized scoreboard focusing on the usefulness, ease of use, ease of learning and user satisfaction.

As a result, Table 2 displays that among the four criteria, usefulness got the highest rating which is 4.69. This shows that the using the digitized scoreboard, staff implementers can accomplish their task conveniently and with more outputs.

On the other hand, the ease of use, learning and user satisfaction gained the same results which is 4.52. Evidently, with the design and structure of the new scoreboard, all the staff implementers strongly agreed that they can now record and monitor all the beneficiaries' information, activities and status easily and with very minimal supervision.

Finally, the developed system yields an overall rating of 4.56. This only means that handling records of Pantawid beneficiaries, monitoring and tracking the conditionalities, updating and consolidating data from all municipalities can now be easily handled and managed. The assigned task to staff implementers can be accomplish effectively, efficiently and satisfactorily. And pertinent reports and scores of household beneficiaries can be generated digitally.

#### **IV. CONCLUSION AND RECOMMENDATION**

Based on the assessment, developed system, and conducted training evaluation and usability testing, the following conclusion and recommendation are derived:

1. The developed digitized scoreboard is a community-based project which is useful to the staff implementers of the Conditional Cash Transfer Program in one province in the Philippines. It is an innovative way to facilitate the process of monitoring household beneficiaries in a manner that is efficient [15];
2. Staff implementers who are the main users were able to manage and access the developed system easily and smoothly. They can accomplish their tasks efficiently [16];
3. Using the developed digitized scoreboard, staff implementers from the province and regional office can record, monitor, consolidate data of household beneficiaries conveniently and effortlessly; and
4. Using the developed digitized scoreboard, updating and managing pertinent records would be prioritized with confidentiality thus promote integrity and security [17].

By adopting by way of deployment and installing in all the municipalities of the province of the Department of Social Welfare and Development is recommended to fully assessed the performance of the developed digitized scoreboard. And even if there is a feature in the developed system where staff

implementers can filter and summarize the performance and activities of each beneficiary, case management and all the components under the social welfare and development indicator can be added to systematically identify who among the beneficiaries are survival, subsistence and self-sufficient.

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