

## SK WebbyApp: Community Organizer within Angeles City

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### Abstract

Officers of the Sangguniang Kabataan are responsible for a wide range of tasks, including developing programs to promote members' moral, spiritual moral, and physical development, delivering annual end-of-term reports on projects and activities to the Sangguniang Barangay, and collaborating with the Presidential Council for Youths (PCYA) and other National Government Agencies (NGAs) concerned with the implementation of youth development projects and programs at the national level. The purpose of this study is to address how Sangguniang Kabataan leaders can show and promote their tasks, activities, and announcements. Also, how the youth can participate in their barangay's.

This study aims to create a simple web application that can provide features like Messaging module, Like and Comment features and Posting wall for the Sangguniang Kabataan officials. The developed system was evaluated by the three IT experts, eight SK officials and 27 citizens based on ISO 25010. The researchers provided the questionnaire through Google Forms and Printed Form to evaluate and collect data about the system's Functional Suitability, Performance Efficiency, Compatibility, Usability, and Reliability. Based on the results, it was concluded that SK WebbyApp is a system that can help the Sangguniang Kabataan Officials to promote and gather their participants in every program. SK WebbyApp is an appropriate way to connect the SK officers to their constituents. It can assist the young people, on what are the Sangguniang Kabataan can provide for them and how they can get in touch to their young leaders.

**Keywords:** *Athleticism, Academic Self Efficacy, Community Based*

## INTRODUCTION

### Background of the Study

The Sangguniang Kabataan (SK) was established in the Philippines as a result of RA 7160. The SK provides a forum for young leaders to exercise their accountability, fairness, and transparency while carrying out their responsibilities and performing their activities as servants of the adolescent community (Enopiquez, 2019).

The officers of the Sangguniang Kabataan have a variety of responsibilities, including developing programs to promote the members' moral, spiritual, moral, and physical development, delivering annual end-of-term reports on projects and activities to the Sangguniang Barangay, working with the Presidential Council for Youths (PCYA) and other National Government Agencies (NGAs) concerned with the implementation of youth development projects

and programs at the national level, and attending seminars.

Nowadays, SK is only known for appearing in pageants and leagues. Other sectors covered by SK such as linggo ng kabataan, health, education, cultural, etc. are not being noticed. Social media platforms like Facebook are not enough to know them. Often posted on their Facebook pages are their activities or programs that have already taken place. To better recognize SK, the web application is a great help to them through posting of announcements of their projects and programs.

### Statement of the Problem

This research has concern regarding how SK Leaders can better show and promote their tasks, activities, and announcements through web application. Also, how young people can participate actively in their barangay. To clarify,

the proponents aim to solve the following problem:

1. Their activities are not visible to others and some are not familiar with what Sangguniang Kabataan can provide to the young people of the community.
2. Absence of participants during activity.
3. Unable to communicate consistently with SK leaders.

### Objectives of the Study

This research is focused on creating web apps. A web app will be created where information can be provided about the tasks, activities, and announcements to be done by the SK leaders. The proponents will accomplish this aim by meeting the following objectives:

1. To create a posting module for Sangguniang Kabataan in Angeles City. To create Where Sanggunian ng Kabataan Members in Angeles City can post their line up activities, Events or Announcements about their project.
2. To develop a system where the youth can register to join or participate where they can get an update in their barangay to status update.
3. To create an application that allows a communication channel between Sangguniang Kabataan to their constituents.

### Scope of the Study

This study is to focus on providing a web app for tasks, activities, and announcements for SK Officers in Angeles City. It is focused on what the content of the website is.

1. **Log In and Sign-Up Module** - User's need to make their account so they can have access to the system. They need to fill up the information that is required, so they can easily recognize if they are users or Sangguniang Kabataan officers.

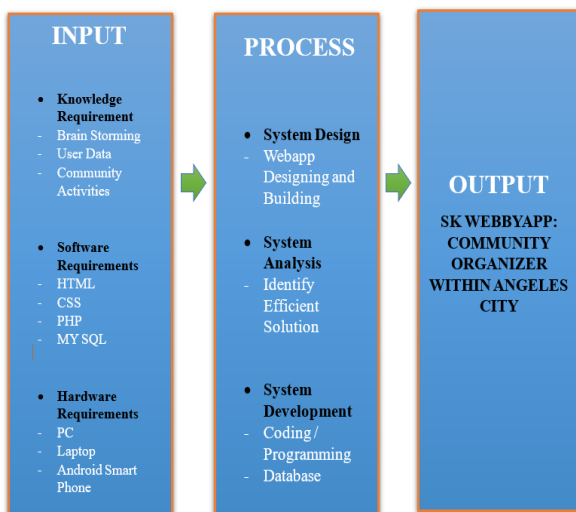
2. **User Rights and Agreement Module** – In this module the user who will sign up in the web application, they need to read and agree to the privacy policy in using the system.
  3. **Admin Module** - An admin panel acts as a user-friendly control interface for controlling many components of your online application, such as managing and arranging content, tracking website statistics, controlling accounts for users, and performing other duties.
  4. **Posting Module** - Included in this module are the tasks, activities, and announcement that will be posted by the admins, which are the SK leaders.
  5. **Registration Module** - This module includes the registration module if the SK leaders have tasks and activities that require registration.
  6. **Contact Us Module** - A Contact Us page gives information about our new WebApp to current community members and SK officials. A solid Contact Us section includes a phone number as well as access to social media sites.
  7. **Notification Module** - If the SK leaders announce or publish new tasks and/or activities on the system, this module will alert the user. Notify users when someone follows/unfollows them, when they like or comment on their posts, and when they publish an update.
  8. **Message Module** - The Message module is at the heart of the communication stack. It facilitates interaction among individuals in the community and SK leaders.
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## Delimitations of the Study

The study is limited to the following:

1. The researcher suppressing the study in the signing up that cannot be connected using social media accounts.
2. The system will not include the Group Chat and Conference call in the research paper.

**Figure 1**  
*Conceptual Framework*



## Significance of the Study

**To the Sanggunian ng Kabataan officers.** Sanggunian ng Kabataan officers will benefit from this study because they can easily connect to their constituents. With the use of the system, they can easily interact with the community and they can simply identify the participants they need.

**To the community.** Through this system, community members can effortlessly join and cooperate to the event that Sanggunian ng Kabataan officers organize. They also have the advantage to keep updated and notified whenever there is an event per barangay.

**To the researcher.** The researcher will gain from this system as well, since they will have a better knowledge of what the system is all about.

**To the future researchers.** Future researchers may improve and broaden the systems and capstone even further.

## Definition of Terms

1. **SK** - Sangguniang Kabataan is a youth council that represents the youth in each barangay. SK is the main focus of this capstone. This is to improve their communication with the youth and members of the barangay.
2. **Federation** - a collection of organizations, countries, regions, and so on that have come together to create a larger organization or government. Federation is the group of Sk leaders who lead different barangays.
3. **Web app** - A web application (also known as a web app) is software that can be accessed using a web browser. Users with an active network connection can access web applications over the World Wide Web. The web app will provide the foundation for a system that SK leaders may utilize to disseminate information and engage youths.
4. **Feeds** - a summary of several but connected data sets presented in a way that makes the linked information more understandable. Data visualization includes dashboards. In the dashboard you can see various information that will be posted by the SK leaders.
5. **Database** - is a structured collection of information, or data, generally recorded electronically in a computer system. The database will act as a repository for the information of users who log into the system, as well as the attached information of the SK, such as announcements and so on.
6. **MySQL** - it is used to store data on the internet server. The system may also be used for data analysis, storage, and Big Data.

7. **Visual Studio Code** - is a simpler code editor that supports development tasks such as debugging, task execution, and version control. It seeks to give only the tools a developer requires for a speedy code-build-debug cycle, leaving complex processes to more effective tools.

## METHODOLOGY

This chapter discusses the strategies and approaches that the researchers applied to carry out the study's aims in a methodical manner. This chapter also covers research design, system development methodology, participants, procedure, data analysis, and design implementation methods.

### Research Design

This part of the research explained the procedures and methods that are used in the paper to demonstrate the things needed to start the problem and formulate the objectives.

To address the data collection strategy and how they are implemented, the researchers used a descriptive research design that seeks information to characterize a phenomena, scenario, or demographic in a methodical manner. It specifically assists in answering the what, where, how, when, as well as questions about the research challenge as opposed to the why. (Voxco, 2021)

The goal of quantitative research is to test hypotheses and provide research questions by gathering and analyzing numerical data. This research often has a large sample size and relies on statistical analysis to draw conclusions about a community from the information gathered. To acquire quantitative data, this is done by surveys, experiments, or other structured data collection techniques (Hassan, 2023).

## Systems Development Methodology

**Figure 2**  
*System Development*



**Plan** - Since the system contains personal information about the user, the researchers must plan accordingly. To avoid conflict, the researchers must gather and provide as much information about their system as possible before implementing it. All information must be approved by the owner.

**Design** - The researchers can use HTML, CSS, PHP, and other Programming Languages for the design of their system. We need to make sure that the system is simple to use and appealing to the users.

**Develop** - The researchers proceed with caution in developing the system.

**Test** - Before releasing the system to its intended users, the researchers must thoroughly test it and identify any flaws or failures.

**Release** - When the system is operational and functional, the researchers may release it to their target users for evaluation and to determine if it can satisfy their users.

**Feedback** - After releasing it to their users, researchers must take all feedback seriously in order to fix any errors or bugs and improve their system.

### Participants

Respondents for this study will include Sanggunian ng Kabataan Officers and Community Citizens in order to acquire the essential information. Probability Sampling was utilized as a sampling technique. Probability

Sampling is a technique widely used in quantitative research, refined for quantitative research aimed at testing hypotheses and drawing conclusions about the population. (Nikolopoulou, K. 2023).

The researchers observed a total population of 25 participants. This research required a sample size of 25 participants. Then, for better reliability of findings, the researchers increased the respondents' scope by adding 10 Community Citizen. Also, this research required the participation of three (3) IT experts to evaluate the WebbApp as software and to validate the WebbApp contents as a potential introductory for the youth or their community citizens. The total sample size was computed at 35 respondents.

### Procedure

This section covers the research instruments utilized to support data gathering. The following instruments and techniques discussed below were used:

A product quality evaluation system is built around the quality model. The quality model specifies which quality attributes will be used when assessing the qualities of a software application.

ISO 25010, also known as “Systems and Software Engineering – Systems and Software Quality Requirements and Evaluation (SQuaRE) – System and Software Quality Models,” the degree to which a system fulfils the stated and implicit demands of its many stakeholders, and hence produces value, is defined as its quality. The demands of those stakeholders (functionality, performance, security, and maintainability, for example) are precisely what are reflected in the quality model, which divides the product's quality into characteristics and sub-characteristics. (25010)

### 1. ISO 25010 Evaluation Tool for Participants

ISO 25010 (See Appendix B) is used as a criterion for evaluation. It consists of the characteristics and sub-characteristics of a system from the user's perspective, which are as follows:

- A. Functional Suitability** - Evaluate if SK WebbyApp set of functions covers all the specified tasks and objectives, provides the correct results, and the functions facilitate the accomplishment of tasks and objectives.
  - B. Performance Efficiency** - Evaluate if SK WebbyApp response and processing times meet requirements when performing its functions.
  - C. Compatibility** - Evaluate if SK WebbyApp can perform well to its function without experiencing any difficulties.
  - D. Usability** – Evaluate if SK WebbyApp can be used by specified users to achieve specified goals of learning the use of the system in a specified context of use. Moreover, if SK WebbyApp has the attributes that make it easy to operate and control.
  - E. Reliability** – Evaluate if SK WebbyApp provides reliable outputs and information. Simple random sampling. Researchers employed a simple random selection of Sanggunian ng Kabataan officials and community residents. Every Sanggunian ng Kabataan officer and community member in the barangay may be given a number here. There will be Sanggunian ng Kabataan officials and residents of the community chosen. In this case, the sample is picked at random from the town's population and the Sanggunian ng Kabataan barangay authority, and each has an equal chance of being gathered.
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## 2. ISO 25010 Evaluation Tool for IT Experts

ISO 25010 (See Appendix C) is used as a criterion for evaluation consisting of characteristics and sub-characteristics of a system from the IT expert's perspectives which are as follows:

- A. Functional Suitability** - The degree to which functions cover and facilitate all specified tasks and their objectives and the degree to which a system provides the correct results with needed precision. Its sub characteristics include Functional Completeness, Functional Correctness, and Functional Appropriateness.
- B. Performance Efficiency** - The degree to which the processing and response time with the resources meets the requirements and the degree of the limits when meeting the requirements. Its sub-characteristics include Time Behavior, Resource Utilization, and Capacity.
- C. Compatibility** – The degree to which two systems, products, or components can share a common environment and resources or SK WebbyApp.
- D. Usability** – The degree to which the users can recognize that SK WebbyApp is appropriate for their needs, protects them from errors, and is visually pleasing. It is also the degree to which SK WebbyApp has a range of characteristics that make it easy to operate and use for specified goals. Its sub-characteristics include Appropriateness, Recognizability, Learnability, Operability, User Error Protection, User Interface Aesthetics, and Accessibility,
- E. Reliability** – The degree to which SK WebbyApp operates as intended despite faults and is operational and accessible. It is also the degree to which SK WebbyApp can recover its data. Its sub-

characteristics include Maturity, Availability, Fault Tolerance, and Recoverability.

- F. Security** – The extent to which a system or WebApp safeguards data and information to ensure that people or other system or WebApp have access to it suitable to their kinds and degrees of permission.
- G. Maintainability** – The degree to which SK WebbyApp can be used in building more assets, modified, and tested, whether the criteria have been met or be diagnosed with deficiencies or causes of failure. Its sub characteristics include Modularity, Reusability, Analyzability, Modifiability, and Testability.
- H. Portability** - The ease at which a system, good, or component may be moved from one software, hardware, or another functional or consumption environment to others.

## Data Analysis

The researchers observed a total population of 25 participants. This research required a sample size of 25 participants. Then, for better reliability of findings, the researchers increased the respondents' scope by adding 10 Community Citizen Also, this research required the participation of three (3) IT experts to evaluate the WebbApp as software and to validate the WebbApp contents as a potential introductory for the youth or their community citizens. The total sample size was computed at 35 respondents.

The respondents were given the ISO25010 Evaluation Tool as a questionnaire. The ISO25010 consists of questions about Functional Suitability, Performance Efficiency, Usability, Compatibility and Reliability, and Maintainability. The participants chose from 1-5 to rate each characteristic of the WebApp

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The Likert scale is a type of rating scale that is used to assess views, attitudes, or activities. It is made up of an observation or a question, accompanied by up to seven answers. Respondents select the choice that best expresses their feelings about the point of view or topic. (Bhandari, 2023).

**Table 1**  
*Five-point Likert Rating Scale*

Numerical Rating	Description
5	Excellent
4	Very Good
3	Good
2	Fair
1	Poor

Table 1 shows the metrics of the respondents' replies to each item on the questionnaire. Each numerical grade, which ranges from Excellent to Poor, has a different connotation.

**Table 2**  
*Scale for Interpreting the Evaluation Result*

Numerical Rating	Description
4.20 – 5.00	Excellent
3.40 – 4.19	Very Good
2.60 – 3.39	Good
1.80 – 2.59	Fair
1.00 – 1.79	Poor

Table 2 shows the scale for interpreting the respondents' evaluation findings. To evaluate the total findings, a weighted average has been used to distill the statistical evaluation of the questionnaire replies. It is used to generalize the understanding of their responses.

The formula for computing the weighted mean is as follows:

$$\text{Mean: } \bar{x} = \frac{\sum fx}{N}$$

Where:

$\bar{x}$  = Mean

x = Number of respondents

f = Weight given by each respondent

## Design and Implementation

### *Logical Specifications*

This section includes diagrams showcasing the workflow and user interactions with the system.

#### *Flowchart*

A flowchart is a graphical depiction of a process, workflow, or a problem solution. It explains several phases that demonstrate linear growth. (Newman, 2023). The flowchart of SK WebbyApp demonstrates the flow from creating files to coding and saving the file (See Appendix A).

#### *Use Case Diagram*

a method of condensing information about the system and its users. It also displays all of the relationships across the various system parts. (See Appendix B).

#### *Entity Relationship Diagram*

A technological systems presentation that illustrates connections between individuals, objects, locations, notions, or occurrences. (See Appendix C).

#### *Data Flow Diagram Level 0*

The fundamental view that covers the whole structure or process being analyzed or modeled. Gives a synopsis of the complete system. It depicts the system's key operations, data movement, and data repositories without going into depth about how these processes function within. (See Appendix D).

#### *Data Flow Diagram Level 1*

Gives a more thorough perspective of the structure by subdividing the primary processes defined in Level 0 DFD. On the level 1 DFD, each sub-process is represented as a separate process. Each sub-process flow of data and data storage are also depicted. (See Appendix E).

## Hardware Specifications

The following are the devices and other resources used during the development and implementation of SK WebbyApp.

### Minimum Specifications

Hardware Component	Development Specifications
Processor	Intel® Atom N450
RAM	1GB
HDD	100GB
GPU	Intel Graphics Accelerator 3150
Operating System	Windows & Ultimate

### Recommended Specifications

Hardware Component	Development Specifications
Processor	Intel® Core i3 – 7100T
RAM	4GB (DDR3)
HDD	500GB
GPU	Nvidia GeForce 8800 GT or Radeon HD 3850
Operating System	Windows 10

## RESULTS

This chapter covers the discussions and results of the findings of the study. This chapter consists of the system/application outputs and the evaluation results presented in tabular form and interpreted with ratings.

### 3.1 System / Application Outputs

The following are the system/application outputs of SK WebbyApp with its features—Registration, Edit Account Profile, Notification Feature, Like & Comment, Message Feature, Search Bar, Posting Feature and Unfollow/Follow Feature.

**Figure 3**

*Sample of Registration*

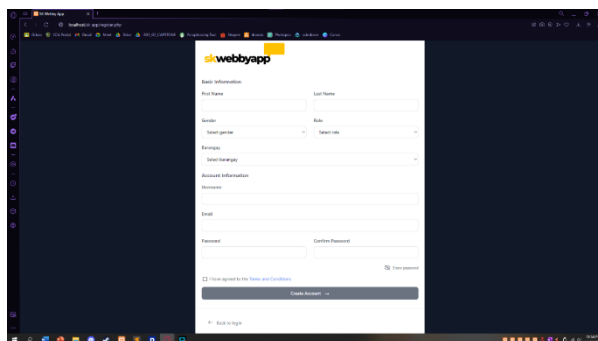


Figure 3. Registration – in registration feature, any user can register as long as they live in Angeles City.

**Figure 4**

*Sample of Edit Account Profile*

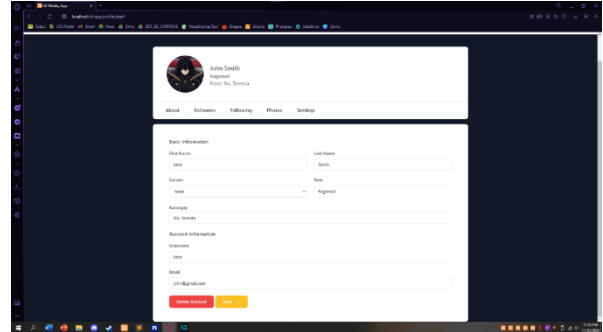


Figure 4. Edit Account Profile – in this feature, users can edit their info in their profile such as upload/change profile picture, first & last name, username & email, and adding a bio. In users' profile, users can also see who they follow and who follow them.

**Figure 5**

*Sample of Notification*

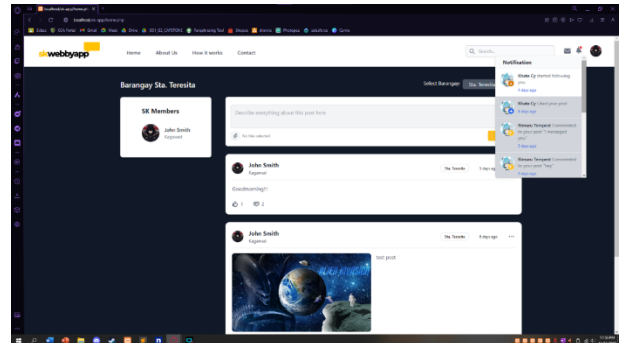


Figure 5. Notification feature – in this feature, users get notified.



**Figure 6**  
*Like & Comment Feature*

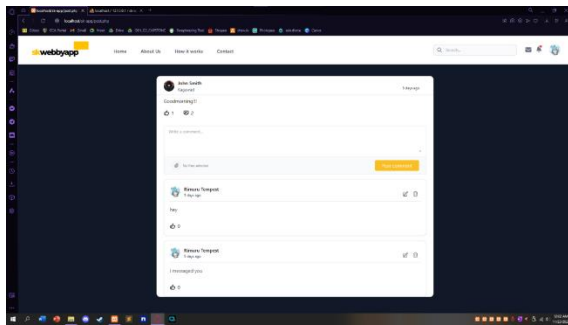


Figure 6. Like & comment feature – in this feature, users can like other post and make a comment about it. They can also edit their post or comment.

**Figure 7**  
*Unfollow/Follow Feature*

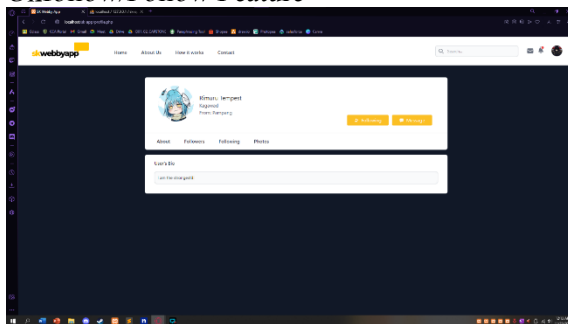


Figure 7. Unfollow/Follow Feature – in this feature, you can follow a user to avoid searching their acc, and also you can unfollow them.

**Figure 8**  
*Sample Message Feature*

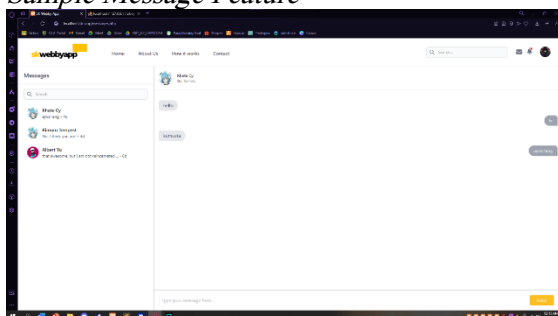


Figure 8. Message feature – in this feature, you can message any user as long as their account in the system is existing.

**Figure 9**  
*Sample Search Bar*

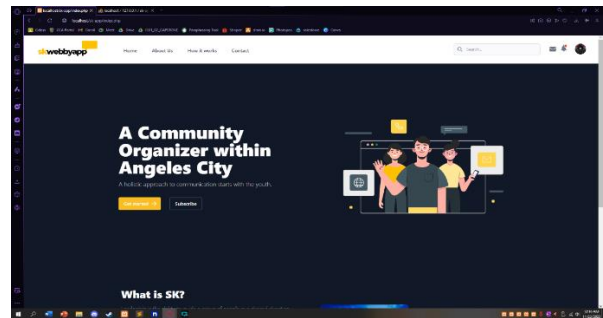


Figure 9. Search bar – in this feature you can search any user's account.

**Figure 10**  
*Sample Posting Feature*

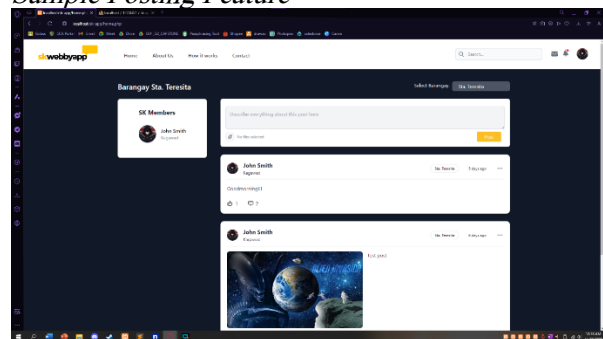


Figure 10. Posting feature – in this feature you can post an update or an announcement. It can be text, photo or both.

## Evaluation Results

The evaluation results are a compilation of the results obtained by assessing the characteristics and sub-characteristics for software quality standards in ISO 25010, also known as "Systems and Software Engineering–Systems and Software Quality Requirements and Evaluation (SQuARE)." The 38 respondents, 35 users and 3 IT Experts for the evaluation were asked to evaluate these criteria according to their personal experience.

**Table 3**  
*Evaluation for the IT Expert*

CRITERIA	MEAN	DESCRIPTIVE RATING
Functional Suitability	4.22	Excellent
Performance Efficiency	4.22	Excellent
Compatibility	4.67	Excellent
Usability	4.56	Excellent
Reliability	4.25	Excellent
Security	4.13	Very Good
Maintainability	4.27	Excellent
Portability	4.67	Excellent
TOTAL	4.37	Excellent

This table summarizes the evaluation results from IT Expert who evaluated SK WebbyApp. The figures indicate the scores of SK WebbyApp's Functional Suitability, Performance Efficiency, Compatibility, Usability, Reliability, Security, Maintainability, and Portability. These criteria are measured by questions that have been selected from each of these criteria, and a descriptive rating for each of them is provided.

Functional suitability was rated 4.22 out of 5, corresponding to an Excellent rating. This means that SK WebbyApp's functions cover and facilitate all specified tasks, their objectives, and the degree to which a system provides the correct results with needed precision.

Performance Efficiency was rated 4.22 out of 5, indicating an excellent rating. This means that SK WebbyApp's processing and response time with the resources meets the requirements and limits when meeting those requirements. This criterion includes sub-characteristics evaluating time behavior, resource utilization, and capacity.

Compatibility was rated 4.67 out of 5, corresponding to an excellent rating. This means that SK WebbyApp's systems, products, or components can share a common environment and resources or exchange information efficiently without detrimental impact on the other.

Usability was rated 4.56 out of 5, corresponding to an excellent rating. This means that SK WebbyApp is appropriate for the needs of its users, can protect them from errors, and is visually pleasing. It also has characteristics that make it easy to operate and use for specified goals. This criterion included sub-characteristics evaluating the IDE's appropriateness and operability as well as user error protection, user interface aesthetics and accessibility.

Reliability was rated 4.25 out of 5, corresponding to an excellent rating. This means that SK WebbyApp operates as intended despite faults, is operational and accessible, and can recover its data. The reliability criteria included sub-characteristics evaluating the IDE's maturity and availability; fault tolerance; and recoverability.

Security was rated 4.13 out of 5, which translates to a very good rating. This means that SK WebbyApp has taken measures to protect your data from unauthorized access. The Security criteria included sub-characteristics evaluating the IDE's Confidentiality, Integrity, Non-repudiation and Accountability.

Maintainability was rated 4.27 out of 5, corresponding to an Excellent rating. This indicates that SK WebbyApp may be used to develop more assets, make modifications, and test if the requirements have been satisfied or identify any flaws or reasons why a failure occurred. Sub-criteria assessing the modularity, reusability, analyzability, modifiability, and testability of the IDE were added in this criterion.

Portability was rated 4.67 out of 5, corresponding to an Excellent rating. This indicates that SK WebbyApp may be successfully and quickly modified for various or dynamic hardware, software, or other operational or consumption conditions. Sub-criteria assessing the IDE's replaceability, adaptability, and install ability were part of the criterion.

Compatibility and Portability got the highest rating with mean of 4.67, followed by Usability with 4.56, Maintainability with 4.27, Reliability

with 4.25, followed by Functional Suitability and Performance Efficiency with a mean of 4.22, and Security with the lowest rating of 4.13.

With an aggregate mean of 4.37 for all evaluation categories, the SK WebbyApp received an Excellent grade, indicating that it satisfies the IT Expert's software quality standards.

**Table 4**  
*Evaluation for the Respondents*

CRITERIA	MEAN	DESCRIPTIVE RATING
Functional Suitability	4.47	Excellent
Performance Efficiency	4.54	Excellent
Compatibility	4.43	Excellent
Usability	4.60	Excellent
Reliability	4.60	Excellent
TOTAL	4.53	Excellent

This table summarizes the evaluation results from the user including the SK Officers and Youth who evaluated SK WebbyApp. The figures indicate the scores of SK WebbyApp's Functional Suitability, Performance Efficiency, Compatibility, Usability and Reliability. These criteria are measured by questions that have been selected from each of these criteria, and a descriptive rating for each of them is provided.

Functional Suitability was rated 4.47 out of 5, corresponding to an Excellent rating. This means that for users, SK WebbyApp set of functions covers all the specified tasks and objectives, provides the correct results, and the functions facilitate the accomplishment of tasks and objectives.

Performance Efficiency was rated 4.54, corresponding to an Excellent rating. This indicates that when executing, SK WebbyApp's response and processing speeds match requirements its functions for users.

Compatibility was rated 4.43, corresponding to an Excellent rating. This means that for users, SK

WebbyApp can perform well to its function without experiencing any difficulties.

Usability was rated 4.60, corresponding to an Excellent rating. This means that for users, SK WebbyApp can be used by specified users to achieve specified goals of learning the use of the system in a specified context of use. Moreover, SK WebbyApp has attributes that make it easy to operate and control.

Reliability was rated 4.60, corresponding to an Excellent rating. This means that for users, SK WebbyApp provides reliable outputs and information.

Usability and Reliability got the highest rating with a mean of 4.60, followed by Performance Efficiency with a mean of 4.54, followed by functional Suitability with a mean of 4.47, and Compatibility with the lowest rating of 4.43.

With an overall mean of 4.53 out of 5, or an Excellent rating, the assessment findings of all the categories combined show that SK WebbyApp satisfied the needs of the user

## DISCUSSION

### Summary of Findings

Based on the evaluation, Sk WebbyApp has been evaluated using the ISO25010. The IT professionals' scores of 4.22 for functional suitability and 4.13 for security, which correspond to an Excellent grade, were the outliers. This demonstrates that the security and appropriateness satisfied the demands of the IT professionals. Its security for user privacy and protection, as well as its performance as a web application, can still be enhanced.

When the evaluation findings were further discussed, it became clear that the IT specialists gave compatibility and portability the highest ratings. However, Usability receives the greatest grade from the barangay's residents. This indicates that Sk WebbyApp as software can

provide the user with a versatile but compatible experience. The SK Federation finds it beneficial to enlighten its constituents as well. Moreover, its users may find it useful.

## Conclusions

The study concludes that the SK WebbyApp is advantageous to both SK officials and citizens. This is due to the fact that SK WebbyApp has shown to be an efficient technique for strengthening the relationship between Sangguniang Kabataan officials and their citizens. Furthermore, based on the data, it has the ability to inform the young in each barangay about the programs that Sangguniang Kabataan can provide by giving capabilities like as posting, messaging, liking, and commenting. Finally, signing up with the system allows residents of the barangay to quickly contact the young leaders.

## Recommendations

The researchers advocate adding extra capabilities to the SK WebbyApp to make it more acceptable for professional work while still being easy to use. SK WebbyApp is primarily focused on citizen convenience, therefore incorporating these characteristics can make it useful to all users:

1. Modern GUI using custom Tkinter
2. Color- coded texts
3. Subscription
4. Control Panel

It is also suggested that in the future, SK WebbyApp would be more available to other operating systems like IOS and Linux, as well as other devices.

## References

- Albertsson, M. (n.d.). *Generating revenue-streams from vehicle connectivity solutions - A case study of Volvo car Corporation*. Home. <https://gupea.ub.gu.se/handle/2077/33374>
- Badri, F., Maulana, R., Khotimah, K., Budiarti, R., & Andhyka, A. (2022, April 30). *Design and build a web app-based conference registration system using the waterfall model*. <https://doi.org/10.33086/atcsj.v4i2.2820>
- Bhandari, P. (2022, October 20). What is a Likert scale? | Guide & examples. *Scribbr*. <https://www.scribbr.com/methodology/likert-scale/#:~:text=A%20Likert%20scale%20is%20a,about%20the%20statement%20or%20question>
- B-health - A framework for mobile and web application for Barangay health center in the municipality of Laguna*. (2021, December 1). IEEE Xplore. <https://ieeexplore.ieee.org/abstract/document/9681470>
- Biscobing, J. (2019, September 11). *What is entity relationship diagram (ERD)? / Definition from TechTarget*. Data Management. [https://www.techtarget.com/searchdatamanagement/definition/entity-relationship-diagram-ERD#:~:text=An%20entity%20relationship%20diagram%20\(ERD,information%20technology%20\(IT\)%20system](https://www.techtarget.com/searchdatamanagement/definition/entity-relationship-diagram-ERD#:~:text=An%20entity%20relationship%20diagram%20(ERD,information%20technology%20(IT)%20system)
- Enopiquez, L., Ramos, R., & Pagkaligawan, T. (2019, January 18). *Sangguniang Kabataan (SK) programs and activities in Banaba west, Batangas city*. Ascendens Asia Publishing Pte. Ltd. (Singapore). <https://ojs.aaresearchindex.com/index.php/AAJMRA/article/view/4348#:~:text=By%20virtue%20of%20RA%207160,servants%20of%20the%20adolescent%20community>
- GreeksforGreeks. (2022, May 17). *Levels in data flow diagrams (DFD)*. GeeksforGeeks. <https://www.geeksforgeeks.org/levels-in-data-flow-diagrams-dfd/>

- Hassan, M. (2022, September 4). *Quantitative research - Methods and analysis - Research method*. Research Method. <https://researchmethod.net/quantitative-research/>
- ISO 2500. (n.d.). *ISO 25010*. ISO 25000 PORTAL. <https://iso25000.com/index.php/en/iso-25000-standards/iso-25010>
- Mata, A., Blancaflor, E., Raymundo, D., & Villaflor, S. (2020, June 18). *MyMuseo / Proceedings of the 2020 2nd International Conference on modern educational technology*. ACM Other conferences. <https://doi.org/10.1145/3401861.3401869>
- Newman, E. (2018, March 2). *What is a flowchart and what are the different types of flowcharts?* Yonyx. <https://corp.yonyx.com/customer-service/what-is-a-flowchart-and-what-are-the-different-types-of-flowcharts/>
- Nikolopoulou, K. (2022, September 6). *What is probability sampling? / Types & examples*. Scribbr. <https://www.scribbr.com/methodology/probability-sampling/>
- One Barangay: A mobile and web Barangay management system*. (2022, December 1). IEEE Xplore. <https://ieeexplore.ieee.org/abstract/document/10071652>
- Thomas, L. (2022, July 6). *Simple random sampling / Definition, steps & examples*. Scribbr. <https://www.scribbr.com/methodology/simple-random-sampling/>
- Voxco. (2021, September 29). *Descriptive research design*. Voxco. <https://www.voxco.com/blog/descriptive-research-design/#:~:text=Descriptive%20research%20design%20is%20a,problem%20rather%20than%20the%20why>
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