



# PPIM Sabah's admin performance: Smartphone App development for Indonesian students

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ARTICLE INFO	ABSTRACT
<p><b>Article history</b>            Received: 2024-03-14            Revised: 2024-05-11            Accepted: 2024-05-24            Published</p> <p><b>Keywords</b>            Administrative performance            Efficiency            Effectiveness            PPIM Sabah            Smartphone app</p>	<p><i>Persatuan Pelajar Indonesia Malaysia (PPIM) is a Malaysian Indonesian Students Association in Sabah, an organization that associates with Indonesian students studying at campuses in Sabah, Malaysia. Due to the lack of supporting human resources, technological support is needed to assist the activities and work of management in order to improve organizational services and administration. For this reason, we provide a solution through community service. This service seeks to create a smartphone application called "PPIM Sabah" to Enhance Administrative Performance." PPIM Sabah encounters challenges such as inefficiency in administrative procedures, obstacles in data accessibility, and inadequate utilization of technology for administrative duties. In order to tackle these issues, we suggest creating a smartphone application that will aid PPIM Sabah in effectively maintaining member information, coordinating and advertising events, and monitoring financial matters with greater efficiency. The suggested system encompasses crucial functionalities, including membership administration, event coordination, and financial oversight. The application is anticipated to enhance the efficiency and efficacy of PPIM Sabah's administration, diminish the time and exertion needed to perform administrative activities, and enhance the quality of services supplied to members. The proposed activity plan encompasses a comprehensive series of steps, including needs analysis, application design, development, testing, implementation, and evaluation. A group of computer science and software development specialists will collaborate closely with PPIM Sabah at every phase of the development process. By integrating this smartphone application, the PPIM Sabah's administrative efficiency can be greatly enhanced, resulting in concrete advantages for the organization and its members.</i></p>
<p><b>Kata Kunci</b>            Aplikasi ponsel cerdas            Efektivitas            Efisiensi            Kinerja administrasi            PPIM Sabah</p>	<p><b>Kinerja Admin PPIM Sabah: Pengembangan Aplikasi Smartphone untuk Pelajar Indonesia.</b>            Pengabdian ini bertujuan untuk membuat aplikasi smartphone yang disebut "PPIM Sabah" untuk Meningkatkan Kinerja Administrasi." PPIM Sabah menghadapi tantangan seperti ketidakefisienan dalam prosedur administrasi, hambatan dalam aksesibilitas data, dan pemanfaatan teknologi yang tidak memadai untuk tugas-tugas administrasi. Untuk mengatasi masalah ini, kami menyarankan untuk membuat aplikasi ponsel pintar yang akan membantu PPIM Sabah dalam mengelola informasi anggota secara efektif, mengkoordinasikan dan mengiklankan acara, dan memantau masalah keuangan dengan lebih efisien. Sistem yang diusulkan mencakup fungsi-fungsi penting, termasuk administrasi keanggotaan, koordinasi acara, dan pengawasan keuangan. Aplikasi ini diantisipasi untuk meningkatkan efisiensi dan efektivitas administrasi PPIM Sabah, mengurangi waktu dan tenaga yang dibutuhkan untuk melakukan kegiatan administrasi, dan meningkatkan kualitas layanan yang diberikan kepada anggota. Rencana kegiatan yang diusulkan mencakup serangkaian langkah yang komprehensif, termasuk analisis kebutuhan, desain aplikasi, pengembangan, pengujian, implementasi, dan evaluasi. Sekelompok spesialis ilmu komputer dan pengembangan perangkat lunak akan berkolaborasi erat dengan PPIM Sabah di setiap tahap proses pengembangan. Dengan mengintegrasikan aplikasi ponsel pintar ini, efisiensi administrasi PPIM Sabah dapat ditingkatkan, sehingga menghasilkan keuntungan nyata bagi organisasi dan anggotanya.</p>

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## INTRODUCTION

Persatuan Pelajar Indonesia Malaysia (PPIM) is a Malaysian Indonesian Students Association in Sabah, an organization that associates with Indonesian students studying at campuses in Sabah, Malaysia. The organization PPIM Sabah has significant potential in providing accommodation for Indonesian and Malaysian students in Sabah. This potential encompasses a substantial membership, a wide-ranging network, and a variety of activities. Furthermore, PPIM Sabah can enhance the ties between Indonesia and Malaysia, while also fostering international awareness and promoting mutual understanding among students (Anisah et al., 2020; Pratolo et al., 2020).

Nevertheless, despite its considerable promise, PPIM Sabah has various obstacles in effectively overseeing the administration of its organization (Jafrudin & Putra, 2020; Syahrudin, 2020). There are several challenges to this, i.e.: firstly, Lack of efficiency in administrative processes (Bai & Yoon, 2022). PPIM Sabah encounters challenges in executing its administrative procedures. These processes encompass the management of member data, the organization of events, and the recording of money. The inefficiency in administrative operations leads to a significant expenditure of time and effort, as well as an elevated chance of errors and data inaccuracies. Secondly, data access difficulties (Afrianti & Pujiyanto, 2020). PPIM Sabah encounters difficulties in obtaining member data and accessing information about activities. Presently, the data possessed remains fragmented, existing in diverse formats and originating from disparate sources. This poses a challenge to the efficient utilization and accessibility of data, impeding prompt and well-informed decision-making. And thirdly, limited use of technology (Ariffin et al., 2018; Dewi, 2023). PPIM Sabah has a low use of information and communication technologies for administrative operations. Their poor technological literacy and inadequate infrastructure hinder their capacity to fully leverage technology for enhancing administrative efficiency and effectiveness.

Upon analyzing this circumstance, it becomes evident that PPIM Sabah possesses significant potential but is confronted with various administrative issues that require resolution. Hence, we suggest the creation of a mobile application that might assist in addressing these obstacles and enhancing the overall administrative efficiency of PPIM Sabah.

After conducting a thorough examination of the situation, we have identified multiple administrative challenges encountered by PPIM Sabah (Kusdarini & Bagas, 2020; Dewi, 2023). There are several issues to this, i.e.: the first of all is a lack of efficiency and accuracy in managing member data (Abdullah et al., 2019). PPIM Sabah encounters challenges in effectively handling member data. The manual data input procedure and the restricted integrated system led to errors and inaccuracies in the data. Consequently, there have been challenges in overseeing membership, generating precise reports, and providing the necessary data for making informed decisions. The second is a limitation in event arrangement (Gad-Elrab, 2021). PPIM Sabah encountered difficulties in coordinating its events. The process of planning, organizing, and promoting events is still carried out using traditional methods and without the use of automation. The absence of efficient technologies poses challenges in managing schedules, monitoring member engagement, and obtaining feedback from event participants. And finally, constraints in financial recordkeeping (Syahrudin, 2020). PPIM Sabah encounters challenges in accurately documenting and monitoring the financial aspects of the organization. The manual recording technique introduces intricacy in documenting revenue and expenditures, as well as generating precise financial statements. Lack of clarity in financial recordkeeping might impede the transparency and accountability in the administration of organizational funds.

Given these challenges, we are confident that the implementation of our proposed smartphone application will serve as a viable remedy. This program aims to enhance the efficiency of PPIM Sabah in managing member data, organizing events in a structured manner, and maintaining accurate financial records. This application is anticipated to greatly enhance the administrative performance of PPIM Sabah, resulting in substantial advantages for the organization and its members.

The creation and execution of a mobile application for PPIM Sabah not only tackles the administrative difficulties encountered by the organization but also corresponds with the Sustainable Development Goals (SDGs), specifically SDG 4: Quality Education and SDG 9: Industry, Innovation, and Infrastructure. The proposed mobile application aims to enhance the quality of educational experiences for Indonesian and Malaysian students in Sabah by enhancing administrative efficiency and providing greater access to information (Ike et al., 2020; Setiawan et al., 2022). This action directly supports SDG 4 by guaranteeing inclusive and fair access to high-quality education and fostering opportunities for lifelong learning for everyone (Goal 4: Ensure Inclusive and Equitable Quality Education and Promote Lifelong Opportunities for All — SDG Indicators, 2023). Furthermore, the application utilizes contemporary technology to optimize operations and enhance data management, aligning with SDG 9 (Fourie, 2022). This objective highlights the significance of constructing durable infrastructure, advancing inclusive and sustainable industrialization, and nurturing innovation (Infrastructure Development, 2019; WorldSupporter | Goal 9: Industry, Innovation, and Infrastructure, 2021). Implementing these technological solutions can enhance the efficiency and creativity of PPIM Sabah, therefore promoting wider sustainable development goals and cultivating a more interconnected and knowledgeable student community (Importance of Technology Trends in Education, 2021; UNESCO, 2023).

## METHOD

The approach to addressing the challenges encountered by the Malaysian Indonesian Student Association (PPIM) Sabah would be tailored to the specific traits and qualities of the organization. The subsequent text provides a comprehensive elucidation of the sequential phases or procedures involved in executing the proposed solution:

### For Partners Engaged in a Productive Economy and Leading to a Productive Economy

#### a. Problems in the Field of Administration:

- **Problem Analysis:** Perform a comprehensive examination of issues about partner production, encompassing limitations in administrative procedures, enhancement of efficiency, quality of information, and utilization of technology (Apriliana & Suryani, 2019; Pramatha & Mimba, 2020).
- **Solution Planning:** Developing suitable solutions through thorough problem analysis, which may involve leveraging cutting-edge technology, providing training on application usage, or creating novel features.
- **Solution Implementation:** Execute a premeditated resolution, such as the incorporation of novel technologies, the adoption of streamlined production techniques, or the facilitation of skills development for collaborators.
- **Evaluation and Monitoring:** Assess the deployed solutions, gauge their efficacy, and closely observe any alterations in partner production processes.

#### b. Problems in the Field of Management:

- **Problem Analysis:** Examine the management issues encountered by partners, such as the absence of a proficient management system, disorganized planning, or unsuitable decision-making (Kurniasanti et al., 2022).
- **Solution Planning:** Designing suitable strategies to address the problem, such as creating a comprehensive management system, providing management training, or implementing efficient planning techniques.
- **Solution Implementation:** Execute a premeditated resolution, such as deploying a new management system, delivering management training to partners, or forming a proficient management team.
- **Evaluation and Monitoring:** Assess the effectiveness of implemented solutions, quantify the impact on partner management, and oversee the long-term viability of implemented solutions.

### For Economically/Socially Unproductive Partners

Partners who do not contribute economically or socially will have the solutions implemented to address their specific difficulties according to the unique aspects of each situation. Several typical measures you can implement involve:

- **Problem Analysis:** Perform a comprehensive examination of the challenges encountered by partners, including but not limited to membership administration services, events, and financing (Sutawidjaya & Nawangsari, 2020).
- **Solution Planning:** Developing tailored solutions for unique concerns, such as offering membership, event, and financial management services.
- **Solution Implementation:** Execute premeditated solutions, such as the construction of smartphone applications, management of memberships, organization of events, and administration of financial services.
- **Evaluation and Monitoring:** Assess the effectiveness of implemented solutions, quantify their impact and success, and oversee the long-term viability of programs in the field.

### Partner Participation in Program Implementation

The involvement of partners is crucial in the execution of the program. Partners will participate in all stages of the process, including problem analysis, solution planning, execution, and evaluation. Partner participation encompasses active involvement in decision-making processes, engagement in field operations, as well as the gathering of data and provision of feedback regarding the success of the program. By actively involving partners, the program can enhance its relevance, sustainability, and empower partners to overcome the challenges they encounter.

### Evaluation of Program Implementation and Program Sustainability in the Field

Once the Community Service Program activities have concluded, an assessment is conducted to evaluate the program's implementation and its long-term viability in the field. Evaluation is conducted by the measurement of the impact of implemented solutions, analysis of the success in reaching established objectives, and identification of potential for further advancement. The evaluation also includes partners in providing input on the program's sustainability, the problems encountered, and the necessary measures to ensure its long-term viability.

Furthermore, to guarantee the long-term viability of the program in the field, the following actions will be implemented:

- **Monitoring:** Program monitoring is conducted once implementation is finished. This monitoring encompasses the assessment of attained outcomes, a gathering of data regarding program utilization and beneficiaries, and tracking of community changes.
- **Partner Engagement:** Partners will remain engaged in the program review and development process. Partners will offer feedback, critiques, and recommendations to enhance and advance the project. Through active

engagement with partners, the program can be continuously adjusted to accommodate the evolving demands and dynamics of the area.

- **Related Party Involvement:** Stakeholders, including local governments, appropriate institutions, and local communities, shall remain engaged in the program to guarantee its long-term viability and endurance. Engaging in collaboration with relevant stakeholders will facilitate the acquisition of the required resources, institutional backing, and consistent policy implementation.
- **Capacity Building:** Throughout the program's implementation, there will be a significant emphasis on enhancing the capabilities of partners and communities. Partners and communities will undergo training, education, and knowledge transfer to enhance their capacity to sustain the program and adapt to future challenges.

By conducting a comprehensive assessment and implementing strategic measures to promote sustainability, the program can guarantee that the solutions provided will consistently yield enduring advantages for both partners and the communities they serve. Program assessment and sustainability will serve as the foundation for improved program development in the future and can be adjusted to meet the evolving needs and changes in the field.

### Partner Location

The PPIM Sabah Secretariat is situated at International Residence College 10c – 30, Universiti Malaysia Sabah (UMS), which is located at Lorong Raja Udang 1C, Kota Kinabalu, Sabah State, Malaysia. Figure 1 depicts the place situated at a distance of 8.2 kilometers from the UMS campus, where the service team leader is conducting the study. The distance from UMS can be covered in a duration of 15 minutes when using a four-wheeled vehicle.

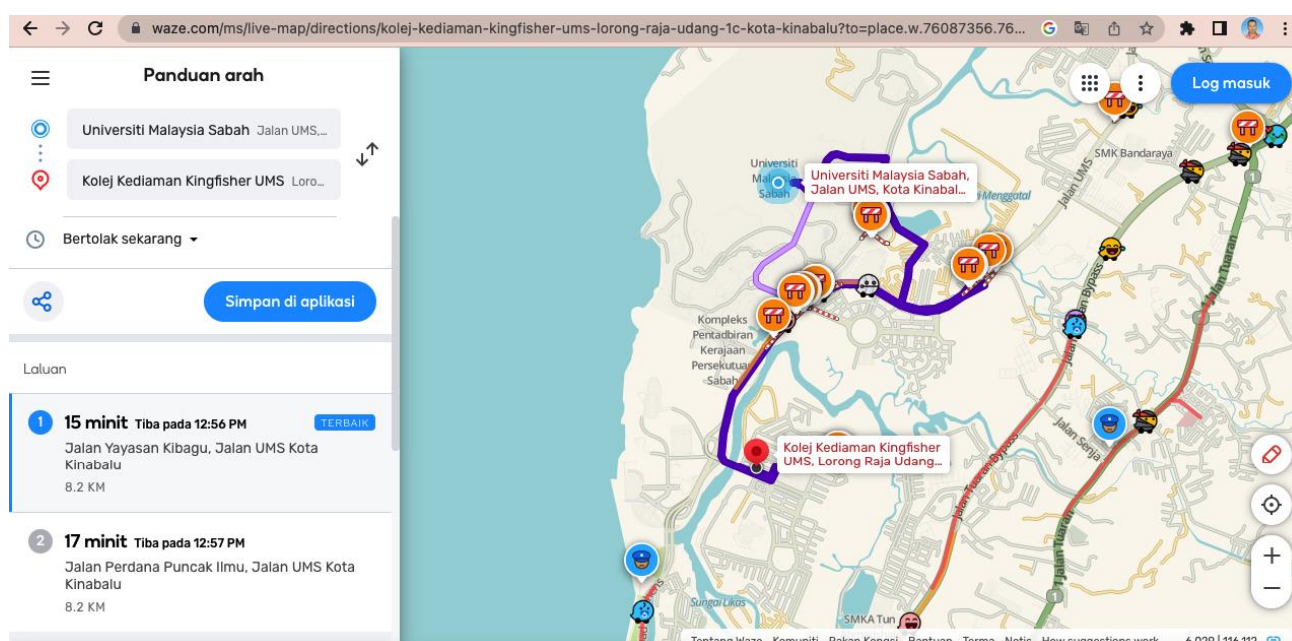


Figure 1. Map of Partner Location

## RESULTS AND DISCUSSION

### Improved Administration Performance Through Application

The creation of a smartphone application by the Indonesian Students Association Malaysia Sabah has the potential to greatly enhance the administrative efficiency of this organization (Ahmadzadegan et al., 2020; Simanjuntak & Nahdi, 2020). This program can decrease reliance on manual administrative procedures that require significant time and effort (Kurniawan, 2019; Ellis & Bredican, 2014). The smartphone application enables the administration of PPIM Sabah to be carried out with greater efficiency and speed (Yasah et al., 2021; Marsofiyati et al., 2020). The organization can utilize this software to conveniently and expeditiously obtain comprehensive information, hence obviating the necessity for manual searches or handling actual documents. Prior studies have demonstrated that smartphone applications can enhance knowledge, attitudes, and behaviors related to their utilization (Alfarsi et al., 2020; Ramezani et al., 2023).

### PPIM Sabah Application Development Process

The creation of a smartphone application for PPIM Sabah can encompass multiple stages or procedures. Before proceeding, it is essential to conduct a comprehensive examination of the administrative necessities and criteria of the organization (Kurniawan, 2019; Razak et al., 2021). This research aims to discover precise features and functionality that must be incorporated into the mobile application.

Subsequently, the development team is required to create and implement the application by the specified requirements. Developers should take into account elements such as ease of use, ability to handle increased workload, and protection against unauthorized access while developing software. In addition, it is imperative to carry out user testing and collect feedback to ascertain that the application adequately fulfills the requirements of PPIM Sabah members. Furthermore, apps must be seamlessly incorporated into current information systems and databases to guarantee efficient data transmission and ease of access.

### Membership Management Features

The initial proposal involved creating a smartphone application specifically tailored to aid in the organization and handling of PPIM Sabah member data. This program aims to streamline the process of registering new members, updating member information, and keeping track of membership history (*Shrka Apps Development, 2022*)(*Membership Management System, 2021*). This application aims to develop a real-time membership management system that is comprehensive and up-to-date (*Membership Management System for Association, Societies, Clubs, Non Profits, NGOs, 2022; Membership Management System- Streamline All Communication!, 2021*). This will streamline member management and ensure precise member data for informed decision-making.

The purpose of the application interface is to offer a user-friendly and effective user experience in handling member data (*Educational Institutions: Access Management System For School - TruMe, 2019; Membership Management Software and CRM for Organizations, 2023*). Figure 2 (a) displays a member list interface that offers a comprehensive overview of all registered members, enabling users to conveniently access fundamental details about each member. Figure 2(b) depicts a member search interface that enables expedited searches based on specific criteria, while Figure 2 (c) illustrates a data edit interface that permits users to promptly and accurately change member information.

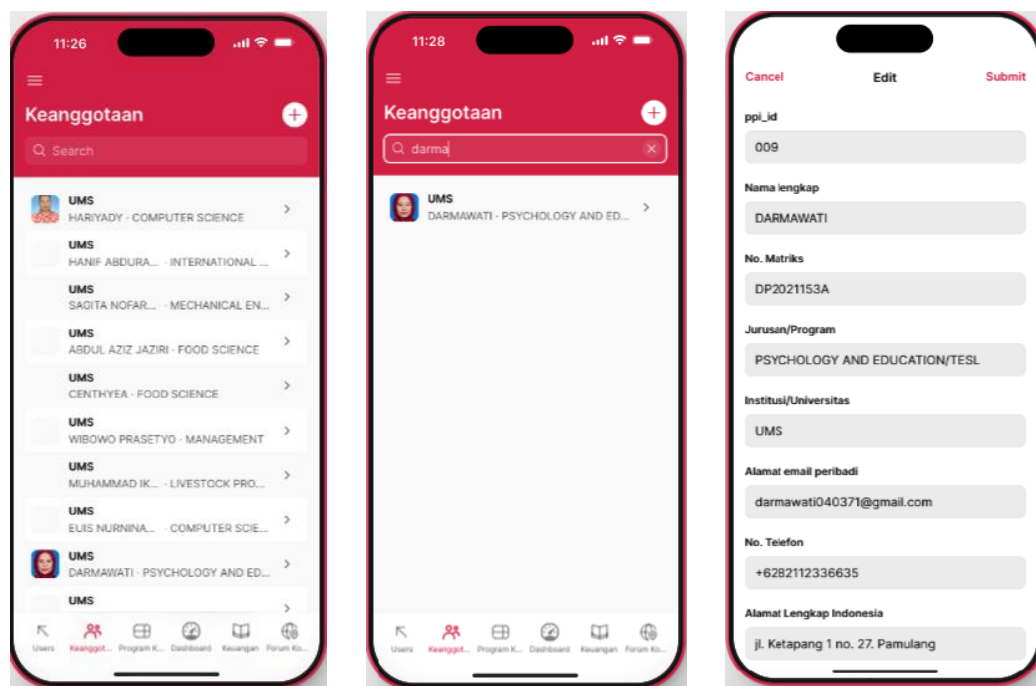
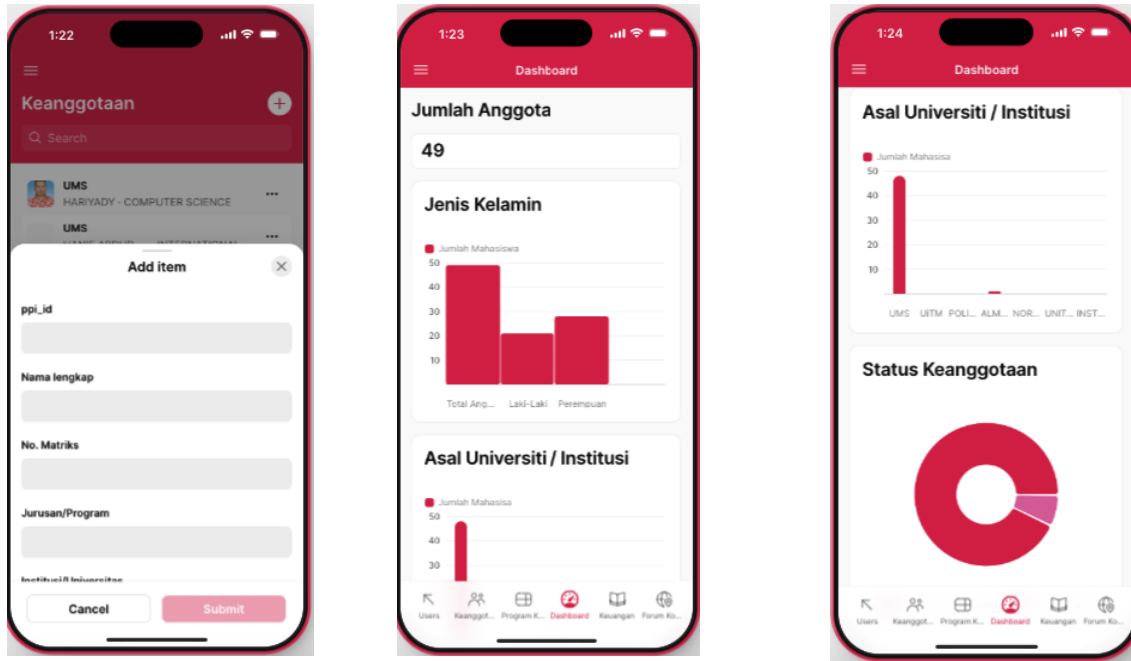


Figure 2. Data edit interface that permits users to promptly and accurately change member information  
(a) Member list interface (b) Member search interface (c) Data edit interface

Furthermore, Figure 3(a) illustrates a data addition interface that simplifies the process of adding new members to the system. Figure 3(b) presents a graphical representation of member data, specifically the number of members and their gender. Figure 3(c), on the other hand, offers a graphical representation of the institutional origin and membership status of the members. These visualizations offer valuable insights to users, allowing them to gain a deeper understanding of member profiles. The software is specifically developed to enhance the efficiency of membership management with its straightforward interface and robust data analysis capabilities.

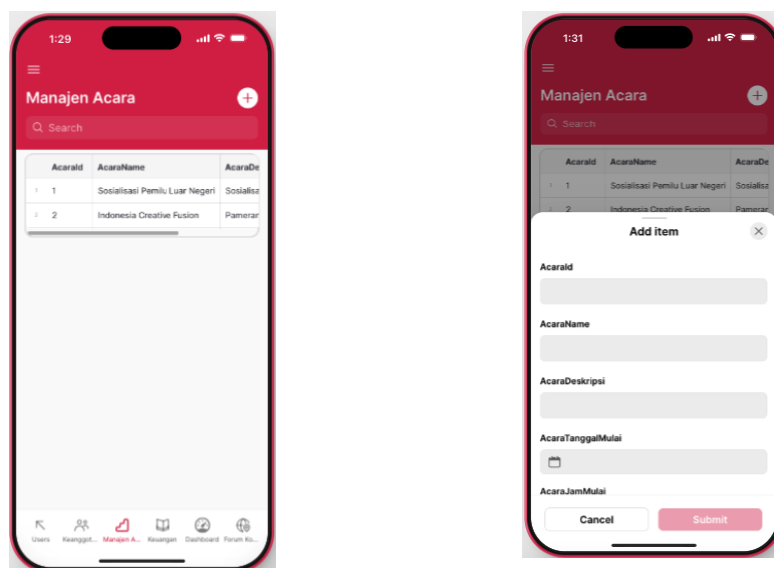


(a) Data append interface (b) Graph interface of number of members and gender (c) Graphical interface of institution origin and membership status

**Event Management Features**

A potential approach is creating a smartphone application specifically designed to oversee and coordinate events organized by PPIM Sabah. This application will facilitate the management of event schedules, the registration of guests, and the dissemination of notifications to members regarding impending events (*Event Management Software Development Company, 2023*). This application aims to develop a highly effective event management system that can track member involvement, monitor event success, and gather feedback from attendees.

The application interface depicted in Figure 4 (a) is designed to provide users with the convenience of accessing, modifying, and searching event data. The interface offers a meticulously arranged display, enabling visitors to effortlessly observe the roster of current events and retrieve comprehensive information about each event. Furthermore, the search function enables users to locate events by specific criteria, hence enhancing accessibility and efficiency in retrieving the desired information. Figure 4 (b) depicts the event data addition interface, which enables users to swiftly and precisely add new events to the system. By integrating these capabilities, the software is specifically developed to enhance event management with greater effectiveness and efficiency.



(a) Event data view, edit and search interface (b) Event data append interface



### Financial Recording Features

A potential solution is creating a smartphone application specifically designed to document and monitor the financial activities of PPIM Sabah. This program will facilitate the process of documenting earnings and expenditures, generating organized financial reports, and sending alerts about the financial condition of the organization. This program aims to develop a precise and transparent financial recording system, facilitating efficient financial management and informed decision-making.

The application interface depicted in Figure 5 (a) is designed to offer a user-friendly and organized user experience for the management of financial data. This interface offers users a convenient and quick way to access, modify, and search financial data. The search function enables users to retrieve financial data by applying particular criteria, while the edit function facilitates the prompt and precise modification of financial information. Furthermore, Figure 5 (b) depicts a financial data addition interface that has been specifically created to enhance the ease with which users can input new financial data into the system. By including these elements, the program seeks to enhance transparency and efficiency in the organization's financial management.

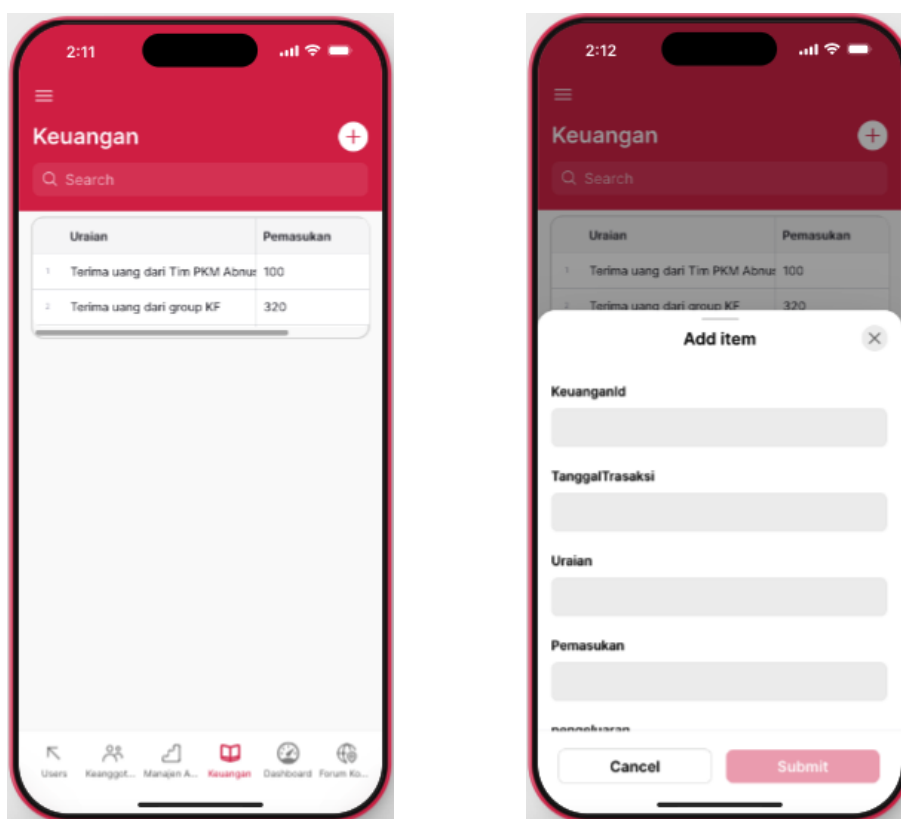


Figure 5. Financial data interface

(a) View, edit and search financial data interface

(b) Financial data addition interface

### PPIM Smartphone Application Technology Discussion

The creation of a mobile application for PPIM Sabah will require a methodical approach to ensure its efficacy in enhancing administrative performance. Administrators and city planners must actively participate in the decision-making process for the creation of these mobile applications. Hence, engaging customers in the first phases of app development and soliciting their feedback and input, will guarantee that the app fulfils their requirements and resolves any concerns they might have. To commence the creation of this mobile application, it is necessary to establish a group comprising application developers, administrators from PPIM Sabah, and IT specialists. The team will be tasked with undertaking a comprehensive examination of the organization's administrative operations, pinpointing areas that can be enhanced through the use of mobile applications, and formulating meticulous strategies for application development.

After the analysis and planning process has been finished, the development team can move forward with the task of designing and constructing the mobile application. They must take into account aspects such as the intended audience, the design of the user interface, and the need for functioning. In addition, they had to take into account the distinct requirements and inclinations of PPIM Sabah members to develop a user-friendly and intuitive application. It is crucial to include functionalities that facilitate convenient access to information and services, such as event schedules, forms for registering as a member, regular news updates, and communication platforms like chat or messaging systems. Furthermore, mobile applications must be meticulously crafted to deliver a smooth and uninterrupted user experience

across a wide range of platforms and devices, guaranteeing compatibility with diverse operating systems like iOS and Android.

Following the completion of the development process, it is essential to conduct comprehensive testing to detect and address any problems or technical concerns. During this phase, it is important to actively seek user feedback and input to ensure that the application operates as planned and fulfills the requirements of PPIM Sabah members. Aside from the technical requirements of development and testing, it is crucial to address the legal and security implications associated with apps.

This involves creating privacy policies and terms of use papers to safeguard user data and guarantee adherence to applicable laws and regulations. Furthermore, it is imperative to provide password protection for applications to thwart unauthorized access and safeguard confidential data. To guarantee the security and dependability of the application, it is necessary to establish a verification mechanism. This process entails assessing the security needs of an application, choosing suitable testing tools, and ascertaining if the application complies with the organization's criteria for deployment on mobile devices. To construct mobile applications for administrative purposes of PPIM Sabah, it is essential to engage in meticulous planning, prioritize user-centric design, conduct comprehensive testing, and ensure compliance with security and regulatory requirements.

The creation and utilization of a mobile application for PPIM Sabah also offers the chance to address SDGs associated with technology and advancement. One potential area of impact is SDG 9: Industry, Innovation, and Infrastructure. By utilizing technology to simplify administrative procedures and enhance effectiveness, PPIM Sabah can contribute to the progress of industry and infrastructure in the region. Furthermore, implementing secure data practices aligns with SDG 16: Peace, Justice, and Strong Institutions as it encourages responsible use of technology for the organization's benefit. Additionally, when taking into account the environmental factors, employing a smartphone app has the potential to support SDG 13: Climate Action. This is achieved through reducing reliance on manual paperwork and physical storage space, which in turn helps minimize the organization's environmental impact by lowering paper consumption and decreasing energy usage for maintaining physical records. Embracing digital solutions like this aligns with global initiatives aimed at addressing climate change and advocating for sustainable practices.

## CONCLUSION

When developing smartphone applications for PPIM Sabah, it is crucial to prioritize the partners' requirements for administration and the system's capacity to offer pertinent advice. Furthermore, the development of this application must also take into account the crucial topic of data security. Prototype approaches have been employed in the creation of smartphone applications for PPIM Sabah. These methods involve phases such as requirements analysis, converting data into user-friendly formats, and evaluating and enhancing applications as necessary. The objective is to guarantee the fulfillment of all partner requirements. Furthermore, it is crucial to uphold the security of highly confidential data when utilizing this smartphone application.

By implementing steps to secure information assets, the use of the PPIM Sabah application can guarantee the security of sensitive data. Conducting tests on the security elements of an application is crucial to ensure the elimination of any weaknesses and the effective safeguarding of user data. Furthermore, it is imperative to engage in a comprehensive discussion and elucidate the security protocols that have been incorporated throughout the creation of this application. Additionally, it is crucial to gain formal consent from users through consent documents, ensuring the safe use of their data by PPIM Sabah. Consistently implementing security measures and conducting evaluations are crucial for addressing technology advancements and emerging security concerns in the future.

When aiming to enhance administrative performance through the utilization of the PPIM Sabah smartphone application, it is advisable to take into account the following tips for future reference: 1. Establish integration between the application and relevant information systems to ensure coherence and eliminate data redundancy. 2. Create a notification and reminder system to guarantee that crucial administrative chores are neither overlooked nor delayed. 3. Integrate monitoring and reporting functionalities for administrative processes to enable real-time performance monitoring and supervision by management. 4. Implement budgeting and financial management functionalities to enhance transparency and accountability in the financial management of the organization. 5. Deploy a robust encryption system to safeguard sensitive user data from the risks of unauthorized disclosure or tampering. To effectively assess and enhance the application, it is crucial to consistently gather feedback from users and carefully consider the suggestions provided to enhance the PPIM Sabah application's relevance and ability to effectively meet user requirements.

## REFERENCES

- Abdullah, A. L., Yusof, Z. M., & Mokhtar, U. A. (2019). Factors influencing the implementation of electronic records and information management. *Records Management Journal*, 30(1), 81–99. <https://doi.org/10.1108/rmj-10-2018-0043>
- Afrianti, F., & Pujiyanto, P. (2020). *Obstacles of the Implementation of the Healthy Indonesia Program with Family Approach (PIS-PK)*. <https://doi.org/10.2991/ahsr.k.200612.026>



- Ahmadzadegan, M. H., Izadyar, M., Deilami, H. A., Banu, S., & Ghorbani, H. R. (2020). Detailed Study on the Features of Mobile Applications. *2020 International Conference on Electronics and Sustainable Communication Systems (ICESC)*. <https://doi.org/10.1109/icesc48915.2020.9155780>
- Alfarsi, G., Jabbar, J., Tawafak, R. M., Iqbal, S., Alsidiri, A., Alsinani, M., & Sulaiman, H. (2020). *Mobile application system supported BUC students services and learning*. *IJIM*, 14(9). <https://doi.org/10.3991/ijim.v14i09.12053>
- Anisah, A., Haryono, B. S., & Mindarti, L. I. (2020). Kualitas pelayanan administrasi akademik di perguruan tinggi (Studi pada Fakultas Ilmu Administrasi Universitas Brawijaya). *JIAIP : Jurnal Ilmiah Administrasi Publik*, 6(2), 213–218. <https://doi.org/10.21776/ub.jiap.2020.006.02.7>
- Apriliana, A. F., & Suryani, E. (2019). Gap analysis of IT governance in supporting integration of organizational universities (Case study: University of General Achmad Yani Yogyakarta). *Aptech Proceeding International Seminar on Applied Technology, Science & Arts: Development of Green Agro-Industry to Support Human Life Sustainability*, 0(5), 396. <https://doi.org/10.12962/j23546026.y2019i5.6374>
- Ariffin, H. L. B. T., Lynn, B. Y. H., Shukery, N. B. M., Rahiman, N. B. A., Mahmud, S. H., & Raslim, F. M. (2018). Innovative procurement adoption for industrialised building system (IBS) PROJECTS. *International Journal of Engineering & Technology*, 7(2.29), 887. <https://doi.org/10.14419/ijet.v7i2.29.14277>
- Bai, R., & Yoon, M. (2022). Research on the construction of administrative teams in universities under the background of the new normal. *Journal of Higher Education Research*, 3(2), 220. <https://doi.org/10.32629/jher.v3i2.787>
- Dewi, D. C. (2023). Implementasi Peraturan Bupati Nomor 30 tahun 2019 tentang road map reformasi birokrasi pemerintah Kabupaten Ponorogo tahun 2019–2021 di Dinas Komunikasi Informatika Dan Statistik Kabupaten Ponorogo. *Jl P*, 10(2), 57–61. <https://doi.org/10.33061/jp.v10i2.5903>
- Educational Institutions: Access Management System For School - truMe*. (2019). <https://www.trume.in/solutions/educational-institutions/>
- Ellis, D. J., & Bredican, J. (2014). Smartphone applications - Idea sourcing, and app development: Implications for firms. *South African Journal of Economic and Management Sciences*, 17(3), 232–248. <https://doi.org/10.4102/sajems.v17i3.492>
- Event Management Software Development Company*. (2023). <https://keyua.org/meeting-and-event-software-development/>
- Fourie, A. N. (2022). *SDG 9: build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation*. <https://doi.org/10.1017/9781108769631.011>
- Gad-Elrab, A. A. A. (2021). Modern business intelligence: Big data analytics and artificial intelligence for creating the data-driven value. In *IntechOpen eBooks*. <https://doi.org/10.5772/intechopen.97374>
- Goal 4: Ensure inclusive and equitable quality education and promote lifelong opportunities for all — SDG Indicators*. (2023). <https://unstats.un.org/sdgs/report/2016/goal-04>
- Ike, J. O., Ariyo, S. O., & Olaitan, O. O. (2020). *Investigating the effect of mobile apps on student's motivation and achievement in motor vehicle mechanic work*. <https://doi.org/10.47631/mejress.v1i2.94>
- Importance of Technology Trends in Education*. (2021). <https://vsiinternational.in/technology-trends/>
- Infrastructure Development*. (2019). <https://www.afdb.org/en/knowledge/publications/tracking-africa's-progress-in-figures/infrastructure-development>
- Jafrudin, J., & Putra, Y. H. (2020). Innovation development of web-based dormitory information system at boarding school SMA Terpadu Krida Nusantara. *IOP Conference Series: Materials Science and Engineering*, 879(1), 12041. <https://doi.org/10.1088/1757-899x/879/1/012041>
- Kurniasanti, E., Lutfillah, N. Q., & Muwidha, M. (2022). Identifikasi kendala dengan kolaborasi theory of constraints dan supply chain management. *Jurnal Pajak Dan Keuangan Negara*, 3(2), 220–235. <https://doi.org/10.31092/jpkn.v3i2.1227>
- Kurniawan, B. (2019). Use of Smartapps for administrative service based paperless system. *IOP Conference Series: Materials Science and Engineering*, 662(2), 22059. <https://doi.org/10.1088/1757-899x/662/2/022059>
- Kusdarini, & Bagas, Y. (2020). *Analysis of optimization of delegation authority to implementation of one-stop integrated services to DPMPSTP Padang City*. <https://doi.org/10.2991/aebmr.k.200305.215>
- Marsufiyati, S. P., Zain, N., Eryanto, H., & Usman, O. (2020). Measuring the level of community desire to use GWJ application in office activities. *Management Science Letters*, 1251–1258. <https://doi.org/10.5267/j.msl.2019.11.033>
- Membership Management Software and CRM for Organizations*. (2023). <https://www.synapseindia.com/membership-management-software.html>
- Membership Management System*. (2021). <http://millennia.in/membership-management/>

- Membership management system for Association, Societies, Clubs, Non profits, NGOs.* (2022). [https://memberams.com/Membership Management System- Streamline All Communication!](https://memberams.com/Membership-Management-System-Streamline-All-Communication!) (2021). <https://www.cordis.us/membership-management-system>
- Pramartha, C. R. A., & Mimba, N. P. S. H. (2020). Udayana University international student management: A business process reengineering approach. *ComTech*, 11(2), 57–64. <https://doi.org/10.21512/comtech.v11i2.6383>
- Pratolo, S., Sofyani, H., & Anwar, M. (2020). Performance-based budgeting implementation in higher education institutions: Determinants and impact on quality. *Cogent Business & Management*, 7(1), 1786315. <https://doi.org/10.1080/23311975.2020.1786315>
- Ramezani, R., Cao, M. D., Earthperson, A., & Naeim, A. (2023). Developing a smartwatch-based healthcare application: Notes to consider. *Sensors*, 23(15), 6652. <https://doi.org/10.3390/s23156652>
- Razak, M. R. R., Ahmad, J., Munawar, A., Madani, M., & Idhan, A. M. (2021). Effects of ICT Application (Information Communication and Technology) towards the transformation of regional bureaucracy. *IOP Conference Series: Earth and Environmental Science*, 717(1), 12003. <https://doi.org/10.1088/1755-1315/717/1/012003>
- Setiawan, A., Thohir, M., Dea, L. F., Alawiyah, I. T., & Jannah, A. (2022). *Training in making and utilizing mobile learning-based learning media using "Rumah Belajar" Application.* <https://doi.org/10.55927/jpmb.v1i9.2016>
- Shrka Apps Development.* (2022). <https://www.shrka.com/>
- Simanjuntak, M. A. R., & Nahdi, M. (2020). Benefits of the Opex pro application in online project monitoring and evaluation at PT. XYZ. *IOP Conference Series: Materials Science and Engineering*, 852(1), 12015. <https://doi.org/10.1088/1757-899x/852/1/012015>
- Sutawidjaya, A. H., & Nawangsari, L. C. (2020). *integrated project management planning and event management in service industry.* <https://doi.org/10.2991/aebmr.k.200205.012>
- Syahrudin, S. (2020). The influence of communication, training, and organizational culture on employee performance. *Jurnal Organisasi Dan Manajemen*, 16(2), 171–181. <https://doi.org/10.33830/jom.v16i2.782.2020>
- UNESCO. (2023). *Education for sustainable development.* <https://www.unesco.org/en/education/sustainable-development>
- WorldSupporter | Goal 9: Industry, Innovation, and Infrastructure.* (2021). <https://www.worldsupporter.org/en/sdgs/goal-9-industry-innovation-and-infrastructure>
- Yasah, M. F. A., Wallang, M., & Mohamed, A. M. (2021). Determinants of community behaviour towards ICT-oriented applications - Volunteer Smartphone Patrol (VSP) PDRM. *IOP Conference Series: Earth and Environmental Science*, 717(1), 12007. <https://doi.org/10.1088/1755-1315/717/1/012007>