POLITEKNIK UNGKU OMAR

e-FASTER FILTER AND PREVIEW PLATFORM (e-FFPP) FOR DATA AND DOCUMENT MANAGEMENT SYSTEM

MUHD. KHIDIR IRHAM BIN MOHD KHAIRUL

(01BCT21F3028)

CIVIL ENGINEERING DEPARTMENT

SESSION II 2023/2024

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A report submitted in partial fulfilment of the requirements for the award of the degree in Bachelor of Civil Engineering Technology with honours.

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DECLARATION OF ORIGINAL AND OWNERSHIP

e-FASTER FILTER AND PREVIEW PLATFORM (e-FFPP) FOR DATA AND DOCUMENT MANAGEMENT SYSTEM

1. I, **MUHD.KHIDIR IRHAM BIN MOHD KHAIRUL (IC No: 001222-12-1153)**, am a student of the **Bachelor of Civil Engineering Technology at Politeknik Ungku Omar**, located at **Jalan Raja Musa Mahadi, 31400 Ipoh, Perak.**

2. I acknowledge that 'The above project' and the intellectual property contained therein are the work of my original work/invention without taking or imitating any intellectual property from any other party.

3. I agree to transfer ownership of the intellectual property of the 'Project' to the Politeknik Ungku Omar to meet the requirements for the award of the **Bachelor of Civil Engineering Technology** to me.

Made and truly acknowledged by the said.

a) MUHD. KHIDIR IRHAM
BIN MOHD KHAIRUL .....
(IC No: 001222–12–1153) MUHD. KHIDIR IRHAM

In front of me, PN. NORAZIAH BINTI HAMID

As project supervisor on date: ....

PN. NORAZIAH BINTI HAMID

APPRECIATION

In the name of Allah SWT, most gracious, most merciful, peace and blessing be upon prophet Muhammad SAW, his family and his friend selected. Firstly, I want to offer my deepest gratitude must be towards Allah because of His grace and His guidance; I can enable complete this report “e-Faster Filter and Preview Platform for Data and Document Management System (e-FFPP)”

I convey my sincere gratitude to my academic supervisor **Pn. Noraziah Binti Hamid**, without her kind direction and proper guidance this study would have been a little success. In every phase of the project her supervision and guidance shaped this report to be complete perfectly.

Next, thank you to my family mostly my parents, **Mohd Khairul Osungki@Abdullah,** and **Junaidah Binti Shariff Endon** because never missed to give me a support. They always encouraged me and prayed for me throughout the time of my research. This thesis is heartily dedicated to them.

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ABSTRACT

This study navigates the confluence of the Penang South Reclamation (PSR) and the Penang South Island Project (PSI), aptly named Silicon Island. Addressing the challenges faced by local fishermen impacted by the project's reclamation activities, it delves into the Social Impact Management Plan (SIMP). The existing document management system encounters inefficiencies, particularly in the timely disbursement of aid, due to its lack of functionalities such as document preview before downloading and precise filtering. To address these shortcomings, this study aims to develop the e-Faster Filter and Preview Platform (e-FFPP) using Adalo software, a low-code tool that enables the creation of digital e-forms aligned with corporate Environmental, Social, and Governance (ESG) objectives. Through a survey distributed via Google Forms, data was collected to assess the current system's constraints and the effectiveness of the new platform. The results showed a significant preference for the e-FFPP, with more than 80% of respondents agreeing that it is a systematic and efficient solution. The Paired T-Test revealed a difference in mean effectiveness of 2.49, indicating a very high agreement on the platform's efficacy. The e-FFPP's development not only addresses the inefficiencies of the current system but also ensures smoother execution of the SIMP, ultimately benefiting the affected fishing community. The integration of automated workflows through Adalo software enhances data accessibility and accuracy, aligning with the principles of the fourth industrial revolution (IR 4.0) and the Internet of Things (IoT). This study concludes that the e-FFPP is a highly effective tool for data and document management, significantly improving the speed and reliability of aid distribution to impacted fishermen.

ABSTRAK

Kajian ini mengkaji pertemuan antara Penambakan Selatan Pulau Pinang (PSR) dan Projek Pulau Selatan Pulau Pinang (PSI), yang dinamakan sebagai Pulau Silikon. Menangani cabaran yang dihadapi oleh nelayan tempatan yang terjejas oleh aktiviti penambakan projek ini, kajian ini mendalami Pelan Pengurusan Impak Sosial (SIMP). Sistem pengurusan dokumen sedia ada menghadapi ketidakcekapan, terutamanya dalam pengagihan bantuan yang tepat pada masanya, disebabkan oleh kekurangan fungsi seperti pratonton dokumen sebelum memuat turun dan penapisan yang tepat. Untuk mengatasi kelemahan ini, kajian ini bertujuan untuk membangunkan Platform Pratapis dan Pratonton e-Faster (e-FFPP) menggunakan perisian Adalo, alat kod rendah yang membolehkan penciptaan e-borang digital selaras dengan objektif Alam Sekitar, Sosial, dan Tadbir Urus (ESG) korporat. Melalui kaji selidik yang diedarkan melalui Google Forms, data dikumpulkan untuk menilai batasan sistem semasa dan keberkesanan platform baharu ini. Hasilnya menunjukkan keutamaan yang signifikan untuk e-FFPP, dengan lebih daripada 80% responden bersetuju bahawa ia adalah penyelesaian yang sistematik dan efisien. Ujian-T Berpasangan menunjukkan perbezaan dalam keberkesanan purata sebanyak 2.49, menunjukkan persetujuan yang sangat tinggi terhadap keberkesanan platform ini. Pembangunan e-FFPP bukan sahaja menangani ketidakcekapan sistem semasa tetapi juga memastikan pelaksanaan SIMP yang lebih lancar, akhirnya memberi manfaat kepada komuniti nelayan yang terjejas. Integrasi aliran kerja automatik melalui perisian Adalo meningkatkan kebolehcapaian dan ketepatan data, selaras dengan prinsip revolusi industri keempat (IR 4.0) dan Internet Benda (IoT). Kajian ini menyimpulkan bahawa e-FFPP adalah alat yang sangat berkesan untuk pengurusan data dan dokumen, secara signifikan meningkatkan kelajuan dan kebolehpercayaan pengagihan bantuan kepada nelayan yang terjejas.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Global Silicon Island initiatives, representing the convergence of technological progress, urban expansion, and economic advancement, significantly contribute to the transformation of the international economic landscape. Notable examples include Silicon Valley in California, which functions as a hub for the digital economy, drawing worldwide investments and facilitating innovative developments in technology and entrepreneurial endeavours. The relationship between Silicon Island and the economy is undeniably strong, contributing significantly to a nation's economic development and enhancing its global competitiveness.

In Southeast Asia, Silicon Island initiatives are essential factors propelling technological progress and economic competitiveness within the region. These projects act as catalysts for innovation, fostering cross-border collaborations and knowledge exchange among nations. The shared technological ecosystem contributes to the overall development of Southeast Asia's digital economy, propelling the region to new heights on the global stage.

Zooming in on Malaysia, Silicon Island projects assume a critical role in advancing the nation's technological landscape and fostering economic diversification (Malaysia Digital Economy Corporation, 2021). The impact of these projects is particularly pronounced, attracting multinational tech This has a multiplier effect on the nation's ability to create jobs and experience economic growth.

As one of the most developed islands in Malaysia, Penang has positioned itself to serve as a centre for technological innovation in the country. Silicon Island projects in Penang significantly contribute to the state's economic growth, with the Gross Domestic Product (GDP) witnessing impressive growth over the years. As of the latest available data, Penang's GDP stands at MYR 97.5 billion (Department of Statistics Malaysia, 2023).

Malaysia is recognized as a developing industrialized nation and has positioned itself among the top 20 global exporters. As of 2022, according to insights from the World Economic Forum, Malaysia holds a prominent position in international trade, securing the 29th rank out of 118 countries in the "Global Enabling Trade Report". The Silicon Island initiative in Penang is poised to further elevate Malaysia's status as a technological powerhouse. Given that the electronics industry is a pivotal component of the Malaysian economy, closely intertwined with other sectors like basic metal production, including iron and steel industries, the strategic development of Silicon Island in Penang is expected to amplify Malaysia's global trade position and reinforce its economic resilience (Department of Statistics Malaysia, 2023).

Bolstering Penang's economic growth hinges significantly on the establishment and enhancement of a robust, modern, and efficient transportation network. As one of the key players in the global export market, Penang's trajectory as a burgeoning technological hub necessitates an infrastructure backbone that supports seamless connectivity and facilitates the movement of goods, services, and talents. The Silicon Island project in Penang aligns with this imperative need, serving as a catalyst for economic expansion. The development of a cutting-edge transportation system is not only a strategic investment but a fundamental requirement to ensure the sustained growth of the region.

Penang's recent growth suggests that infrastructure development is being approached with an eye toward the future. The Penang State Government (2023) has committed to modernizing the state's infrastructure through the ambitious Penang Transport Master Plan, which aims to alter the transportation landscape. This plan, coupled with the Silicon Island project, forms a synergistic partnership crucial for Penang's economic trajectory. A well-integrated and efficient transportation system is integral not only for the convenience of the local population but also for optimizing the

logistics and supply chain processes, which are paramount for the success of Silicon Island ventures.

In tandem, the Silicon Island project and an advanced transportation network are pivotal elements in propelling Penang's GDP to new heights. The Silicon Island initiative enhances the state's global competitiveness in the technology sector, attracting investments and fostering innovation. Simultaneously, an effective transportation system expedites the movement of goods, reduces logistical costs, and enhances overall economic efficiency. Both components are symbiotically intertwined, presenting a compelling argument that the development of Silicon Island and a state-of-the-art transportation network is not just a strategic move but an imperative step for Penang's sustained growth and economic prosperity. Silicon Island projects have far-reaching implications globally, regionally, and nationally. In the context of Penang, these projects have positioned the island as a technological powerhouse, contributing significantly to its economic growth and advancing the digital landscape.

Moreover, one noteworthy Silicon Island project in Penang is the Penang South Island Project, owned by Kerajaan Negeri Pulau Pinang (BPEN). Managed through a joint venture between Penang Infrastructure Corporation and SRS Consortium Sdn Bhd, this project has led to the formation of Silicon Island Development Sdn Bhd (SID) as the project developer. SID has further appointed SRS TC Sdn Bhd as the Project Turnkey Contractor, and subsequently, Gamuda Engineering Sdn Bhd serves as the Project Main Contractor. The progress of the Penang South Island Project is critical in expanding Penang's technological footprint and fostering sustainable economic development, showcasing the island's commitment to remaining at the forefront of technological and economic advancements.

The Penang South Island Project involves the creation of a Silicon Island, a venture that indirectly involves the local fishermen. This is due to the fact that the reclamation or establishment of a new island will impact marine life in the area, consequently affecting fishing activities. The authorities responsible for managing this project have taken this into consideration and proposed a solution to address the arising issues. The proposed solution involves the establishment of a Social Impact Management Plan (SIMP). SIMP is a comprehensive plan designed to address the challenges arising from the project, with a specific focus on the fishermen located in

the southern part of Penang who are directly affected by the Silicon Island project. The implementation of SIMP falls under the responsibility of Silicon Island Development Sdn Bhd (SID). Within SID, a dedicated department, known as the Approval Management and Land Delivery Department (AMLD) has been assigned to ensure the smooth and effective execution of SIMP.

The impact of the Penang South Island Project extends beyond economic realms, reaching into the traditional livelihoods of the local fishing communities. The project is poised to bring about transformative changes to the lives of fishermen, introducing challenges and opportunities. As Penang continues its march toward becoming a technological powerhouse, the fishermen who have long relied on the sea for their sustenance face the potential displacement and alterations to their way of life. It becomes imperative for the Stakeholders involved in the Silicon Island initiatives to implement sustainable development strategies that mitigate the adverse effects on the fishing communities and ensure a just transition. The Stakeholder who involves in this Project as show in Table 1.1 below.

Table 1.1: Stakeholders involve in project.

STAKEHOLDER	ROLE
Bahagian Perancang Ekonomi Negeri (BPEN)	As a project owner and representative of one of the organizations responsible for ensuring the country's economy is in good condition,
Penang Infrastructure Corporation (PIC)	This organization is the project delivery partner of the Penang Transport Master Plan (PTMP)
SRS Consortium Sdn Bhd	This company is the project delivery partner of the Penang Transport Master Plan (PTMP)
Silicon Island Development Sdn Bhd (SIDSB)	Act as the project developer
SRS TC Sdn Bhd	Act as the turnkey contractor
Gamuda Engineering Sdn Bhd	Act as the Main contractor

The AMLD is the department at Silicon Island Development Sdn. Bhd. (SIDSB) has responsible for providing packages offered in the SIMP. Among these packages is a book voucher for successful fishermen's children who have achieved a GPA above 3.0 and for those who have successfully entered higher education institutions. To develop these packages, AMLD requires up-to-date and complete data and document. In existing method for document management system all the documents will be obtained through the document platform websites used by three companies simultaneously: SRS Consortium, SIDSB, and SRS TC. Although the platform used is excellent and systematic, as it is utilized by various parties, several issues and weaknesses have arisen.

Based on daily observations and conversations with SIDSB staff, several complaints have been voiced. Among them, it is noted that the existing platform does not provide a detailed file filtering system. Additionally, staff, especially those from SID, find it challenging to select desired document because the existing platform lacks a file preview function before downloading. In short, staff must download files first to view the selected file's content. This can cause confusion and indirectly hinder SIDSB staff, particularly AMLD, from fulfilling their duties within the given timeframe.

1.2 PROBLEM STATEMENT

The current mechanism for distributing social aids to fishermen affected by the Penang Transport Master Plan (PTMP) suffers from significant pending and delays, preventing the timely disbursement of crucial assistance. This delay, in turn, hampers the intended support for affected individuals and communities precisely when they require it the most. The existing process lacks efficiency, adversely affecting the overall effectiveness of the Social Impact Management Plan (SIMP) and impeding its goal of mitigating the adverse effects on the local fishing communities.

The documentation process associated with applying for social aid to support affected fishermen is excessively complex. This complexity poses a significant barrier to the swift and efficient delivery of assistance. Cumbersome document filing procedures hinder the streamlined execution of the SIMP, leading to challenges in

identifying and assisting eligible beneficiaries promptly. Simplifying and streamlining the document filing process is critical for ensuring that aid reaches those in need in a timely and effective manner.

The ongoing disruptions to fishing grounds and livelihoods caused by the PTMP project contribute to an increased economic vulnerability among the fishing community. The delay in aid disbursement exacerbates this vulnerability, creating a pressing need for a solution that facilitates faster and more targeted support. Addressing the economic challenges faced by the affected individuals is crucial for achieving the objectives of the SIMP and ensuring a just transition for the fishing communities impacted by the Silicon Island initiatives.

The absence of an efficient data management system is a critical challenge in the context of the SIMP. The current data management deficits hinder the ability to track and streamline the distribution of social aids effectively. This deficit not only poses a risk of inefficiencies but also increases the likelihood of resource misallocation. Establishing a robust data management system is imperative for enhancing the overall effectiveness of the SIMP and ensuring that aid resources are directed to the right beneficiaries in a timely manner.

The existing document platform used by Silicon Island Development Sdn Bhd (SIDSB), SRS Consortium at Gamuda Berhad, and SRSTC lacks essential features, such as a detailed file filtering system and a file preview function before downloading. These deficiencies in the platform directly impact the efficiency of the Approval Management and Land Delivery Department (AMLD) in fulfilling its duties within the given timeframe. All the documents in existing method for document management system will be obtained through the Website Platform and used by three companies simultaneously by SRS Consortium under Gamuda Berhad, SIDSB, and SRSTC. Although the platform used is excellent and systematic, as it is utilized by various parties, several issues and weaknesses have arisen especially delay in submission of document, not user friendly, no alerting system, and the most critical issue is the file, data and document are not being able to preview directly and quickly. All the issues using existing platform for document management system had led the major problem to manage data and document at AMLD under SIDSB to provide the SIMP such as the

component of Social Aids like Boats and Engine, Ex-Gratia, Education and Fisherman Jetty and Facilities to the affected fisherman due to the Silicon Island Project.

Hence, the Social Aids releasing always pending and delay. Therefore, to support the Social Aids to the affected fisherman become more efficient, the faster filter and preview platform for document management system needs to be designed and developed for systematic data and document management to avoid delay and pending to release aids. Addressing these shortcomings and implementing a faster filter and preview platform is essential for optimizing the document management system and overcoming the challenges faced by SIDSB staff in providing timely assistance to affected fishermen.

1.3 OBJECTIVES

The aim of the objective is to design and develop e-Faster Filter and Preview Platform (e-FFPP) for data and document management system using Adalo software for efficient social aids release to the affected fisherman due to Silicon Island Project.

i. To identify the constraints of using existing platform in data and document management system.
ii. To design and develop the e-FFPP for data and document management system using Adalo software.
iii. To test the effectiveness of e-FFPP for data and document management system.

1.4 SCOPE OF STUDY

The scope of work undertaken by the Approval Management and Land Delivery Department (AMLD) within Silicon Island Development Sdn Bhd (SIDSB) is multifaceted, encompassing three key areas critical to the successful implementation of the Penang Transport Master Plan (PTMP) project, with a particular focus on the Social Impact Management Plan (SIMP). The study is focusing on Silicon Island Development Sdn. Bhd which is involve with AMLD as a Department conducting SIMP for Silicon Island Project.

The primary responsibility of our department is the holistic management of the Social Impact Management Plan (SIMP) within the PTMP project. This involves a comprehensive approach to the development, implementation, and ongoing oversight of the plan. Collaborating closely with Stakeholders, especially the fishing communities directly impacted by PTMP, local authorities, and relevant government agencies, we manage thorough assessments to understand and address the social and community impacts stemming from the project. Our ultimate goal is to proactively mitigate adverse effects on the fishing communities, safeguarding their well-being and livelihoods. We strive to strike a balance that ensures the sustainable development of the PTMP project while prioritizing the interests and welfare of the affected communities.

In line with our commitment to efficiency, transparency, and the well-being of impacted communities, the proposed e-FFPP for document management system serves as a strategic initiative to augment our department's capabilities. This platform is designed to streamline the social aid application process and enhance the efficiency of aid disbursement to the affected fishing communities. By leveraging technological advancements, we aim to simplify and expedite the document management procedures associated with the SIMP. The proposed platform not only aligns with our commitment to mitigating social and environmental impacts but also reflects our dedication to adopting innovative, Industry 4.0-inspired solutions. This integration is poised to significantly benefit both SID and the broader Penang community by ensuring a more agile, transparent, and responsive approach to social impact management within the PTMP project.

1.5 SIGNIFICANT OF STUDY

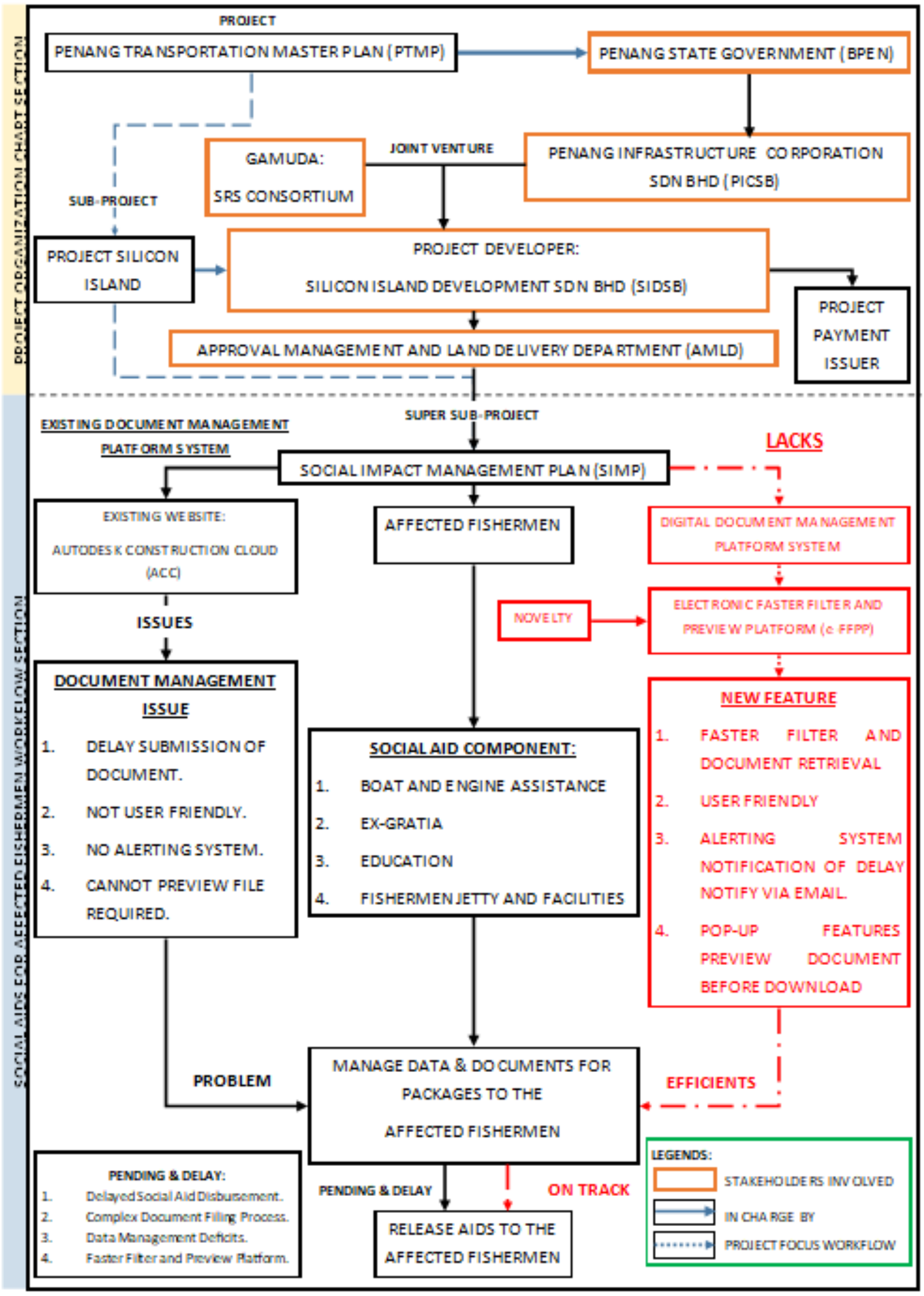


Figure 1.1: Significant of study

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

The Penang South Island Project, among other Silicon Island initiatives, is a prime example of how these projects are influencing the region's technical and economic future. These programs, such as the Social Impact Management Plan (SIMP), are essential elements that not only support technological advancement and economic growth but also have a big impact on the surrounding communities, particularly the fishing communities and other groups that depend on traditional means of subsistence.

The Approval Management and Land Delivery Department (AMLD) of Silicon Island Development Sdn Bhd (SIDSB) is the central entity behind these projects. In charge of managing the extensive Social Impact Management Plan related to the Penang Transport Master Plan (PTMP) project, AMLD encounters significant difficulties in providing social assistance to fishermen who are directly impacted by the Silicon Island projects. The current document management system is ineffective, which slows the distribution of aid and obstructs the intended assistance just when it is most required.

The Silicon Island projects' larger context emphasizes how important it is for Malaysia to become more economically resilient and globally competitive. However, a nuanced and sustainable strategy is required due to the transformative changes brought about by these activities, especially the possible displacement of conventional livelihoods. Herein lies the role of the e-Faster Filter and Preview platform (e-FFPP), which is a proposed platform designed to optimize SIDSB's document management system.

The e-FFPP has three main goals: first, it aims to determine the limitations of the current platform; second, it uses Adalo software to design and construct an efficient platform; and third, it tests the e-FFPP's efficacy for the SIDSB document management system. The e-FFPP not only represents the commitment to embracing creative, Industry 4.0-inspired solutions, but also complies with the objective to minimizing social and environmental repercussions by addressing the stated issues and improving assistance distribution efficiency. With this connection, the PTMP project's social impact management will be handled in a way that is more flexible, transparent, and responsive, which will be highly advantageous for SID as well as the larger Penang community.

2.2 SILICON ISLAND

Regions dubbed as "Silicon Islands" have become important centres of technology because of the concentration of businesses involved in semiconductor production. The social and economic dynamics of Silicon Valley are examined in Saxenian's (1996) seminal work, which highlights the importance of networks and information spillovers in promoting innovation and economic success. The literature on Silicon Islands emphasizes how governments, businesses, and academic institutions work together to drive technological developments.

The positive externalities produced by Silicon Islands, such as greater competitiveness, employment generation, and a supportive environment for research and development, are frequently highlighted in this field of study. Recognizing the guiding principles of Silicon Islands' success offers politicians, business executives, and researchers’ useful information for developing innovation clusters.

2.3 PENANG TRANSPORT MASTER PLAN (PTMP)

A comprehensive plan designed to address the transportation issues in the Penang region is the Penang Transport Master Plan (PTMP). The literature on urban planning, as demonstrated by studies like Litman (2019), highlights the importance of

transit master plans in promoting sustainable urban development. These schemes help to make cities more liveable, less congested, and better served by public transportation.

In the larger framework of urban transportation planning, the PTMP offers a chance to investigate the challenges of transportation management in a fast-growing area. In order to create more resilient and sustainable urban environments, conversations about the integration of different transportation modes, land-use planning, and infrastructure development can be influenced by the insights obtained from analysing the PTMP.

2.4 PENANG SOUTH ISLAND (PSI)

Penang South Island (PSI) is a noteworthy development project with possible social and economic effects. The results of complex, diverse megaprojects like PSI have the power to influence a region's future. According to Flyvbjerg's (2014) research, in order to successfully traverse the difficulties posed by large-scale developments, meticulous planning, stakeholder participation, and sustainable practices are critical. In order to investigate how urban development might strike a balance between environmental preservation and economic growth, PSI offers a special case study.

Urban planning must take environmental factors into account, as evidenced by research such as Van den Berg et al. (2017) and other works on sustainable urban development. The PSI project is open to investigation within this framework, giving scholars the chance to look at how megaprojects might support community well-being and sustainability objectives.

2.5 SOCIAL IMPACT MANAGEMENT PLAN (SIMP)

A key component of development initiatives is the societal Impact Management Plan (SIMP), which attempts to recognize and reduce any potential negative societal effects. The importance of social impact evaluations and management strategies in

promoting fair and sustainable development is emphasized by Bamberger and Rugh (2016). Participatory methods, community involvement, and the incorporation of local knowledge are frequently seen in successful SIMP.

In general, the Social Impact Management Plan (SIMP) consists of four components. Each of these components aims to assist the families of fishermen affected by this project. project such as Fisherman Jetty and other Facilities, Education, Ex-Gratia and also the Boat and Engines. Refer to Table 2.1 for a more detailed description of components in social aids.

Table 2.1: SIMP social aids component

NO.	COMPONENT	DESCRIPTION
1	Fishermen Jetty and other Facilities	Fishermen will get their new sheds after replacing the old sheds with the new one.
2	Education	All affected Fishermen's kids will get education subsidy
3	Ex-Gratia	Every registered Fishermen at SIMP will get a one-off check for their corporation.
4	Boat and Engines	Every registered Fishermen will get a new boat following their old boat's criteria and the owner demands.

Examining the SIMP becomes crucial in the context of the Penang projects in order to comprehend how social factors are integrated into the design and implementation of large-scale projects. A basis for assessing the efficacy of SIMPs is provided by the literature on responsible development and community involvement, which guarantees that the social aspects of development are properly considered and managed during the course of the project lifetime (IFC, 2019).

2.6 JOINT VENTURE

A joint venture (JV) is a type of commercial partnership where two or more parties join forces to work together on a particular project or economic activity while splitting the profits, risks, and resources. Joint ventures can be partnerships, consortiums, or strategic alliances, among other arrangements. The strategic benefits of cooperation, like as access to new markets, shared expertise, and risk mitigation, are frequently highlighted in the literature on joint ventures (Beamish & Lupton, 2016).

The legal and governance facets of joint ventures are likewise studied by academics, who investigate how successful collaborations are set up and run to guarantee the accomplishment of common goals (Hitt et al., 2019). Examining joint venture dynamics in the context of the Penang projects sheds light on the cooperative tactics used for regional development.

2.7 PROJECT DEVELOPER

An important function in starting, organizing, and carrying out a development project is that of a project developer. This person or organization is in charge of recognizing opportunities, getting money, negotiating the legal system, and managing the project's whole lifecycle. The success of development efforts is contingent upon competent leadership, risk management, and stakeholder engagement, as highlighted by Turner's (2014) literature on project development. Scholars frequently investigate the difficulties and optimal approaches related to project development, offering significant perspectives into the skills needed for a project's effective completion. Talking about the strategic choices that shape urban landscapes and the difficulties of regional development benefits from an understanding of the project developer's role in the Penang projects.

2.8 TURNKEY CONTRACTOR

A turnkey contractor is a third party whose job it is to deliver the client a finished, fully working project. With a turnkey method, the contractor manages every aspect of the project, from planning and building to the last commissioning. The literature on turnkey contracting highlights how effective it is in expediting the completion of projects because the client receives an operational "turnkey" solution.

Academics frequently investigate the benefits and drawbacks of turnkey contracts, considering variables including project complexity, risk distribution, and the contractor's responsibility for guaranteeing timely and high-quality delivery (Chua, Kog, & Loh, 1999). Examining the role of turnkey contractors in the Penang projects sheds light on the project delivery approach selected and how it affects the realization of large-scale improvements.

2.9 MAIN CONTRACTOR

A project's main contractor plays a crucial role during the building process. They are in charge of managing resources, supervising, and coordinating the many subcontractors, and making sure the project is finished on schedule and to specifications.

With an emphasis on project scheduling, cost control, and quality assurance, the literature on construction management highlights the crucial role that the principal contractor plays in determining a project's success (Abdul-Rahman & Wang, 2007). Gaining insight into the primary contractor's job dynamics in the Penang projects is helpful when discussing efficient project management techniques and the difficulties involved in coordinating intricate construction activities.

2.10 PROJECT OWNER

The organization that starts a development project and is ultimately accountable for its performance is the project owner, often known as the client or principal. Project owners can be either public or private organizations, and their responsibilities include setting the project's objectives, obtaining finance, and managing its general course.

Project ownership literature examines the duties and difficulties faced by owners across a range of businesses, highlighting the significance of good stakeholder participation, risk management, and communication (Winch, 2010). An analysis of the project owner's involvement in the Penang projects sheds light on the kinds of decisions that need to be made, the strategic factors that need to be considered, and the leadership traits that come with leading major development projects.

2.11 STAKEHOLDERS

A project or initiative's interest, stake, or influence can be attributed to individuals, groups, or organizations that are considered stakeholders. Throughout the project lifecycle, it is crucial to recognize, include, and manage the expectations of different stakeholders, according to the literature on stakeholders in project management and development (Freeman, 1984).

The varied viewpoints and interests of stakeholders from local governments and corporations to non-profits and government agencies are investigated by researchers. Navigating the complexity of development projects requires an awareness of the dynamics of stakeholder interaction, which is why effective stakeholder management is considered important to project success. Studies frequently stress the need of stakeholder analysis, communication, and teamwork in guaranteeing successful project outcomes (Mitchell, Agle, & Wood, 1997).

2.12 BAHAGIAN PERANCANG EKONOMI NEGERI (BPEN)

Tasks include researching, studying, analysing, and writing state development policies, programs, and initiatives in areas like social education, housing, sports, industry & trade, services, tourism, agriculture, animal husbandry & fishing, infrastructure and utilities, health, and youth and women's development. The Five-Year Malaysia Plan (RML), RML Half-Term Review, Five-Year State Plan, State Half-Term Review, and State Annual Development Plan are among the programs and projects for which BPEN acts as a centre.

As an information and reference centre for the collection of state socio-economic information and data, BPEN also studies, examines, analyses, and formulates macro-socio-economic aspects of state development policies, programs, and activities. Additionally, it completes information and data in the database (EIS), conducts socio-economic studies, analyses socio-economic information and data, and prepares socio-economic reports.

2.13 PENANG INFRASTRUCTURE CORPORATION (PIC)

The Penang government established Penang Infrastructure Corporation Sdn Bhd (PIC) as a special-purpose vehicle to lead the Penang Transport Master Plan (PTMP) implementation. To establish Penang as a leading state, PIC's objective is to construct resilient developments and transportation infrastructure, specifically elements of the PTMP including the Penang South Islands, main roadways, Pan Island Link highways, and the Bayan Lepas Light Rail Transit (LRT).

The State Secretary Dato’ Dr. Ahmad Jailani Bin Mohamed Yunus, YB Zairil Khir Johari, the chairman of the State Infrastructure and Transport Committee, Rt. Hon. Penang Chief Minister Chow Kon Yeow, and PIC Chief Executive Officer Dato’ Seri Farizan Bin Darus comprise the board of PIC.

2.14 SRS CONSORTIUM SDN BHD

Island A would be constructed by Gamuda Bhd's 60% owned single-purpose vehicle SRS Consortium Sdn Bhd in accordance with the Penang Transportation Master Plan (LIM, 2021). Gamuda owns 60% of SRS Consortium Sdn Bhd, Ideal Property Development Sdn Bhd owns 20%, and Loh Phoy Yen Sdn Bhd owns 20%.

2.15 SILICON ISLAND DEVELOPMENT SDN BHD (SIDSB)

A major participant in the Penang South Island Project, which intends to increase Penang's technology footprint and promote sustainable economic development, is Development Sdn Bhd (SIDSB). Since reclamation affects fishing and marine life, SIDSB was formed as the project developer for Silicon Island, an endeavour that indirectly engages the local fisherman. In order to tackle the obstacles that have arisen from the initiative, SIDSB has put in place a Social Impact Management Plan (SIMP). Four major components make up this comprehensive plan: financial support, educational support, boat and engine replacement, and amenities for fisherman.

To guarantee the efficient and successful implementation of SIMP, SIDSB has designated SRS TC Sdn Bhd as the Project Turnkey Contractor and Gamuda Engineering Sdn Bhd as the Project Main Contractor. The business is essential to controlling the Silicon Island project's social effects, especially for the impacted fishermen's families.

2.16 GAMUDA BERHAD

Malaysian infrastructure, real estate, and engineering company Gamuda Berhad. One of the largest infrastructure firms in Malaysia, it has contributed to the building of many domestic and international projects, such as the MRT lines in the Klang Valley, as well as roads, airport runways, trains, tunnels, water treatment facilities, dams, infrastructure concessions, and new townships. Through its major world-class infrastructure and top lifestyle property operations in infrastructure development and construction, infrastructure facility operation, and property development, the firm strives to continuously deliver for its clients. The group aims to set the standard for

creative new approaches to large-scale public infrastructure and real estate development in the area.

2.17 FISHERMEN

Fishermen are people who work in the fishing industry, which is a major industry in many coastal communities. The opportunities and difficulties experienced by fishermen are examined in the literature on fisheries management and the socioeconomic features of fishing communities. Research frequently examines topics such sustainable resource use, overfishing, and the effects of environmental changes on fish populations (Berkes, 2007).

Studies also emphasize the sociocultural features of fishing communities, looking at how fishermen influence regional customs and how policy changes affect their means of subsistence. It is vital to comprehend the viewpoints and requirements of fisherman when executing sustainable development initiatives, particularly those that affect coastal areas.

2.18 SOCIAL AIDS

Social aid refers to a wide range of welfare programs and support networks that are intended to help people and communities that are struggling with issues connected to their health, finances, or social well-being. The literature on social assistance discusses how welfare programs affect social fairness, healthcare accessibility, and poverty alleviation (Moffitt, 2003). Scholars frequently investigate the impact of social assistance programs on the welfare of marginalized communities.

The study of social assistance adds to the current discourse on public policy, social justice, and the function of NGOs and government agencies in meeting societal demands. Comprehending the current social assistance framework in the framework of development initiatives is essential for evaluating the possible effects on nearby communities and pinpointing regions that might require extra assistance.

2.19 EXISTING DOCUMENT MANAGEMENT PLATFORM SYSTEM AT SIDSB

Three different firms are currently using the same document management system at the same time. As a result, there are several constraint elements when utilizing that platform.

2.19.1 Constraint Elements

i. Delay in Submitting Documents:

Delay, which is characterized as a postponement of scheduled events, can be caused by a variety of circumstances, including inadequate preparation or unfavourable weather. As a result, there may be an increase in expenses and difficulties fulfilling project deadlines (Kerzner, 2017). Employees at SIDSB are unable to submit documents or data promptly in situations requiring immediate attention. This is due to the fact that the existing platform is shared with two other companies, namely SRS TC and SRS Consortium. Consequently, many documents or data unrelated to SIDSB need to be filtered, leading to delays as mentioned.

ii. Non-User-Friendly Platform:

The majority of SIDSB employees fall within the age group of 30 and above, facing some challenges in utilizing the current platform. Given the advanced nature of the platform, they are required to undergo training before effectively using the existing document management platform.

iii. Lack of an Alerting System:

Alerting systems are vital in fields like cybersecurity and healthcare because they use sensors and communication channels to quickly inform the appropriate parties about certain circumstances or events. This improves situational awareness and speeds up response times (Kuziemsky et al., 2011).

iv. Inability to Preview Required Files:

The existing platform does not allow for a preview before uploading the desired files. Employees are required to download the files first to determine their content. Additionally, the simultaneous use of the platform by three

different companies contribute to difficulties for SIDSB employees in locating the desired files.

2.19.2 Problem in Managing Data and Document for Packages for Affected Fishermen.

The existing data and document management system is not efficient in handling packages for affected fishermen, posing challenges in releasing social aids. There are two main issues with the current data and document management system: delays and pending actions in the release of Social Aids for the Silicon Island Project in Penang. These problems hinder the timely provision of assistance to the affected fishermen.

i. Pendency in Data and Document Management System:
   In preparing SIMP social aid packages for fishermen, it's essential to have updated data to ensure the packages align with the most current information. If the person in charge does not amend the required data and document promptly, it leads to a pending situation in preparing and distributing the social aid packages to affected fishermen.

ii. Delay in data and document management system:
   In the preparation of SIMP social aid packages for fishermen, ensuring the alignment with current information hinges on having updated data. Failure by the person in charge to promptly amend the required data and document not only introduces delays but also impacts the timely preparation and distribution of social aid packages to affected fishermen.

iii. Lack in Faster and Filter Preview Platform:
   One significant problem with the current platform is that it lacks a faster and more filtered preview platform. This indicates that consumers face difficulties with the existing platform's operational speed and effectiveness when previewing files. The overall user experience and productivity of the workflow may suffer in the absence of this capability.

iv. Impact on operational efficiency and staying on track for the timely release of Social Aids to affected fishermen:

Efficiency and timeliness in the data and document management platform are crucial to prevent any negative impact, whether on SIDSB or the affected fishermen. One of the adverse effects that can be avoided is a poor reputation for SIDSB if there are any issues in implementing SIMP. Moreover, preventing pending and delays ensures that affected fishermen can be assisted within the scheduled timeframe.

2.20 FILTER

The word "filter" can mean several things depending on the situation. Filters are algorithms or methods used in digital information and data processing that prioritize, organize, or sort data. Researchers examine how filters affect user experiences, preferences, and decision-making in the literature on information filtering and recommendation systems (Resnick & Varian, 1997).

Applications for filters can be found in a variety of sectors, such as social media, e-commerce, and streaming video platforms. Discussions on information consumption, user behaviour, and the moral implications of tailored content delivery require an understanding of the function and impact of filters.

2.21 PREVIEW

In the context of technology, "preview" typically refers to a glimpse or a portion of content, such as papers, images, or videos, just before the entire version is accessible. The literature on multimedia systems, user interfaces, and user experience (UX) frequently discusses the design and importance of preview functions (Tondreau & Atkin, 2012). Previews have a significant impact on how people decide and create expectations. Research might look into how previews influence how users consume information, engage with it, and are satisfied, which would help us understand how users behave in digital environments.

2.22 DIGITAL PLATFORM

Digital platforms are virtual marketplaces or networks that make it easier to trade commodities, services, or knowledge. A wide range of academic fields, including business, economics, and information systems, have produced literature on digital platforms. Academics examine the commercial strategies, network effects, and legal issues related to platforms such as social media, online shopping, and teamwork tools (Parker, Van Alstyne, & Choudary, 2016). Talking about the digital economy, innovation, and how online interactions are changing requires an understanding of digital platform dynamics.

2.23 DESIGN E-FFPP AS A WEBSITE

e-FFPP is a document management platform created in the form of a website, utilizing Adalo software. The primary objective of e-FFPP is to manage data and document for packages intended for affected fishermen.

2.23.1 Adalo Software

Adalo is a no-code platform recognized for simplifying web application development without the need for traditional programming skills. The platform's drag-and-drop interface allows users to easily design and assemble UI components (Saia et al., 2022). Adalo offers customizable templates that streamline development by providing pre-designed layouts that can be adjusted to meet specific project requirements (Saia et al., 2022). This feature accelerates the initial phases of web app creation and supports iterative design and rapid prototyping, allowing users to refine their applications in real-time (Saia et al., 2022).

A key feature of Adalo is its emphasis on ensuring responsiveness across various devices to maintain a consistent user experience (Oosterhuis et al., 2018). Additionally, the platform's integration with external databases and third-party services enhances web app functionality, enabling robust data management and extended capabilities (Oosterhuis et al., 2018). While Adalo offers advantages such as accessibility and cost-effectiveness, there are considerations to keep in mind. Customization may be limited by the platform's templates, which may not fully align with the requirements of complex

web applications that demand highly specific design or functionality (Oosterhuis et al., 2018). Furthermore, factors like performance scalability and reliance on platform updates are aspects that developers and businesses should evaluate when considering Adalo for web app development (Oosterhuis et al., 2018).

In summary, Adalo's no-code platform provides a user-friendly approach to web application development, catering to a diverse range of users looking to create functional and responsive applications without extensive programming knowledge. While it offers significant benefits in terms of ease of use and efficiency, potential limitations related to customization and scalability should be carefully considered by developers and businesses interested in utilizing Adalo for their web app projects.

2.24 DESIGN DAN DEVELOP E-FFPP FOR EFFICIENT DATA AND DOCUMENT MANAGEMENT SYSTEM.

2.24.1 Faster Filter and Preview Platform

The main focus in designing and developing the e-FFPP is to ensure a faster filter and the ability to preview data and document before downloading the selected file.

2.24.2 Faster Submission

With the new platform, e-FFPP, employees can submit the required data and document quickly in case of any urgent need. The faster submission is a positive outcome when there is a quicker filter and preview of available files on the e-FFPP.

2.24.3 User Friendly Platform

The e-FFPP is designed with a simple and easy-to-understand display. It ensures that all functional buttons are direct, requiring no complex steps. If there's anything not understood, e-FFPP provides an icon button with instructions on how to use the functional features.

2.24.4 Alert System

The e-FFPP will send notifications through email if any document needs to be vetted and verified before its due date.

2.24.5 Efficient Data and Document management to release package to affected fisherman.

Files and folders are organized by departments in SIDSB, making it easy for employees to find the necessary data and document. Employees just need to know which department is in charge of the job.

2.24.6 Efficient and on track in social aids release to affected fisherman.

With easy access to all data and documents, employees will have an easy time to preparing social aids packages to be release to the affected fishermen on planned date.

2.25 WEBSITE

A website is an internet-accessible collection of linked web pages that usually includes multimedia, interactive features, and information. It acts as a virtual platform for people, groups, or companies to interact, share, and connect with audiences throughout the world. Many technologies, including HTML, CSS, and JavaScript, are used to make websites, which can be as basic as static pages or as complex as dynamic platforms with databases and interactive elements. They are essential to contemporary trade, communication, and information sharing. The creator of the World Wide Web, Tim Berners-Lee (2000), asserts that websites are essential elements of the online environment because they give people a way to access and add to the vast amount of information that is available online.

2.26 INTERNET OF THINGS (IOT)

The network of physically connected objects that are integrated with software, sensors, and other technologies that allow them to gather and share data over the internet is known as the Internet of Things (IoT). This idea is transforming a number of industries by enabling intelligent decision-making and automation through the smooth transfer of information across devices. IoT applications improve productivity and offer insightful information on real-world processes in a variety of industries, such as healthcare, agriculture, transportation, and smart cities (Atzori, Iera, & Morabito, 2010).

The addition of sensors to commonplace objects, which allows them to exchange data and communicate with other devices, is a noteworthy feature of the Internet of Things. For instance, connecting thermostats, lights, and security cameras to one another can result in a smart home ecosystem that can react intelligently to environmental factors and user preferences (Al-Fuqaha et al., 2015). Improved user experiences and more effective resource use are made possible by this interconnection.

IoT technology development and implementation must take security and privacy issues into account. Unauthorized access and data breaches are more likely because of the massive volume of data that is created and shared between devices. In order to guarantee the ethical and secure implementation of IoT solutions, it is imperative to address these challenges (Roman, Zhou, & Lopez, 2013). Strong security controls and laws must be put in place as IoT develops in order to safeguard user privacy and thwart potential online dangers.

To sum up, the Internet of Things is a revolutionary force in the digital age that connects objects and allows them to interact and communicate with one another to increase functionality and efficiency. To promote a reliable and long-lasting Internet of Things environment, it is crucial to solve security and privacy issues as this technology develops.

2.27 THE FOURTH INDUSTRIAL REVOLUTION (IR 4.0)

The Fourth Industrial Revolution (IR 4.0) is a paradigm-shifting period marked by the pervasive integration of cutting-edge technologies into a variety of industries and societal domains. These technologies include robotics, artificial intelligence, the

Internet of Things (IoT), and big data. IR 4.0, named for the founder and executive chairman of the World Economic Forum, Klaus Schwab, builds on the third industrial era's digital revolution and is characterized by the convergence of the digital, biological, and physical worlds (Schwab, 2017).

Increased device connectivity and communication, which results in the development of smart systems and intelligent networks, is a crucial component of Industry 4.0. IoT technologies allow devices to share real-time data, which makes industrial settings' decision-making processes more automated and efficient (Manyika et al., 2016). Beyond industry, this interconnection affects a number of sectors, including healthcare, transportation, and agriculture, and it helps to usher in a new era of productivity and creativity.

In IR 4.0, automation and artificial intelligence are essential components that enhance human potential and change conventional job responsibilities. Although there are many prospects for efficiency improvements with new technologies, there are also worries about job displacement and the necessity to upskill the workforce in order to keep up with the rapidly changing technological landscape (Brynjolfsson & McAfee, 2014). Ensuring the inclusive benefits of Industry 4.0 presents a challenge for policymakers and industry leaders as they manage these transformations responsibly.

IR 4.0 affects jobs and industry, but it also has an effect on economic growth and global competitiveness. Countries with a greater chance of becoming leaders in the new industrial paradigm are those who successfully utilize and invest in these technologies. In order to take the lead in the Fourth Industrial Revolution, governments all over the world are developing plans to support innovation, R&D, and digital infrastructure (Marr, 2018).

To sum up, the Fourth Industrial Revolution is a significant change in the way civilization functions. It integrates state-of-the-art technologies to build systems that are more intelligent, connected, and efficient. To fully realize the promise of IR 4.0, it is imperative to tackle issues pertaining to ethical considerations, workforce adaption, and global competitiveness as this revolutionary period develops.

2.28 SUSTAINABLE DEVELOPMENT GOALS

In order to promote a resilient and equitable society by 2030, the United Nations developed the Sustainable Development Goals (SDGs) in 2015. These goals provide a comprehensive framework for global sustainable development and address a variety of issues (United Nations, 2015). SDG 9, which focuses on industry, innovation, and infrastructure, is one of the 17 objectives. It highlights the significance of innovation, robust infrastructure, and sustainable industrialization. In the framework of this research, the development of the e-Faster Filter and Preview Platform (e-FFPP) for data and document management under the Silicon Island Project coincides with the innovative aims of SDG 9 (Harris & Ambrose, 2010).

Figure 2.1: SDG 9 – Industry, Innovation, and Infrastructure.

The goal of Sustainable Cities and Communities, or SDG 11, is to create inclusive, secure, resilient, and sustainable urban communities. According to Plattner, Meinel, and Leifer (2015), integrating technological solutions is essential for attaining sustainability in urban areas. By improving document management effectiveness within the Silicon Island Project and adhering to sustainable urban development principles, the e-FFPP helps achieve this goal.

Figure 2.2: SDG 11 – Sustainable Cities and Communities.

Sustainable production patterns are essential, as highlighted by SDG 12, Responsible Consumption and Production. Harris and Ambrose (2010) stress how important a design process is to achieve both creative and financial objectives. The e-FFPP supports sustainable and ethical manufacturing methods, which is in line with SDG 12, by streamlining document management procedures.

Figure 2.3: SDG 12 – Responsible Consumption and Production.

SDG 17 further emphasizes how crucial partnerships are to achieving the goals. Effective collaboration between Silicon Island Development Sdn Bhd (SIDSB) and other agencies, as stated in the research, indicates a partnership-oriented approach. Plattner et al. (2015) underscore the importance of partnerships in tackling intricate issues and attaining all-encompassing resolutions, hence reiterating their crucial role in accomplishing SDG 17.

Figure 2.3: SDG 17 – Partnerships for the Goals.

In conclusion, the integration of the e-FFPP initiative with specific Sustainable Development Goals emphasizes its contribution to a sustainable and inclusive future.-.

The studied literature highlights how innovation, technology, and responsible practices are all interconnected in attaining the SDGs' larger purpose.

2.29 SUMMARY

Various facets of the Penang South Island Project and its social impact management have been examined in the literature review, with an emphasis on the e-Faster Filter and Preview Platform (e-FFPP) that is being suggested. The development of Penang South Island (PSI), the Silicon Island initiatives, the Penang Transport Master Plan (PTMP), the Social Impact Management Plan (SIMP), and the roles of various project participants were among the major issues.

The Silicon Island idea, which drew inspiration from Silicon Valley, has been promoted as a driver of economic expansion and technical advancement. In the background, the necessity of sustainable urban development is emphasized by the PTMP, a comprehensive urban transportation plan. With its possible social and economic ramifications, the PSI development project is an important case study for understanding how to strike a balance between environmental protection and economic expansion.

The SIMP, a crucial component of development programs, has been well studied. Its four parts, which cater to the requirements of impacted fisherman, highlight how crucial social effect assessment and management are for major undertakings. The discussion focused on the roles that joint ventures, project developers, contractors, and project owners play in ensuring the success of these kinds of projects.

Following an outline of the inefficiencies in Silicon Island Development Sdn Bhd's (SIDSB) present document management system, the e-FFPP was proposed. The current system's shortcomings, including its slowness, unintuitive interfaces, absence of alerting mechanisms, and difficulties in handling data for social assistance packages, were carefully examined.

By offering a quicker, more user-friendly, and more effective document management system, the proposed e-FFPP seeks to address these problems. The features of e-FFPP, its creation with Adalo software, and its advantages such as

quicker submission times, an intuitive interface, and an alert system are all covered in detail in the literature study.

Additionally, ideas like digital platforms, Internet of Things (IoT), filters, and previews were examined, emphasizing their applicability in modern technology. In order to integrate the platform with international efforts for sustainable and inclusive development, the literature placed the e-FFPP within the larger framework of the Fourth Industrial Revolution (IR 4.0) and Sustainable Development Goals (SDGs).

To put it briefly, the literature review establishes the foundation for comprehending the intricacies of extensive development initiatives, the difficulties associated with social impact management, and the suggested remedies made possible by cutting-edge digital platforms such as the e-FFPP. The relevance of the suggested platform in fostering a resilient and inclusive future is shown by highlighting the connections between technology, sustainable development, and ethical behaviour.

CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

The design process is the process of turning an ambiguous need into a final product or design solution. During the design process, high levels of creativity are necessary, but these levels are controlled and guided by the process to deliver a workable, appropriate solution to the design problem that meets or beyond the stated objectives of the brief. Even though creativity is essential to design, it is an activity that serves both artistic and economic goals. The design process makes it easy to ensure that a design complies with each of these specifications. The procedure is essential for producing a large number of viable answers and makes use of a range of strategies or mechanisms that motivate participants to look beyond the box in search of an original or creative solution (P. Harris and G. Ambrose, 2010).

Many individuals and organizations have realized in recent years how important design thinking is to the creation of new ideas. It is possible to create novel solutions that surpass expectations by fusing user perspectives, technical feasibility, and business considerations. Design thinking has the ability to change how we approach problems, think through solutions, and produce goods and services (H. Plattner, Ch. Meinel, and L. Leifer, 2015).

Every employee of Silicon Island Development Sdn Bhd (SIDSB) will get a series of questionnaires. As a result, they might offer input on how well the database handles issues with the data and document management system. The employee should access the system to submit the relevant paperwork before the questionnaire is sent to all relevant staff offices. The research method is split into four main processes,

including data analysis, design thinking, system and document identification, and research literature examination, in order to satisfy the study's goals and objectives.

3.2 DESIGN THINKING

The General Design Thinking Process is a dynamic method to problem-solving that has become well-known for its flexibility and human-centeredness. Design thinking is a collaborative process that is used in a variety of sectors to address challenging situations creatively and successfully. It is not limited to the domain of design experts. Empathy is emphasized heavily in this process, which pushes practitioners to gain a thorough understanding of the needs and experiences of the end users they want to assist (Brown, 2008).

Fundamentally, the General Design Thinking Process usually consists of multiple iterative phases that promote creativity and adaptability. Gaining understanding of the end users' viewpoints, needs, and difficulties is the first step in the process. After then, the problem is characterized using the information that has been acquired. The third step, ideation, promotes brainstorming and the development of multiple alternatives. By making these concepts a reality in a tangible manner, prototyping enables in-person testing. Ultimately, a continual loop of improvement and iteration is created by testing and refining the solutions in response to user feedback (IDEO, 2015).

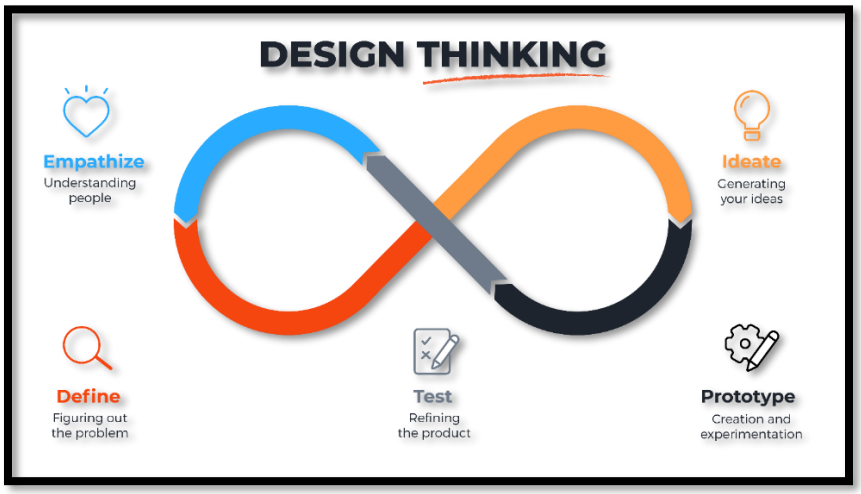


Figure 3.1: The Design Thinking Process

3.3 RESEARCH DESIGN

The study design serves as the foundation for the methods and techniques a researcher will use to carry out their investigation. Researchers can focus on methods that are pertinent to the subject matter and conduct fruitful research investigations because of the design. This method is crucial for any planning that involves observation. You can identify any potential problems by keeping an eye on the installation process. If a crucial issue plays a major role in the work's implementation failure, changes need to be addressed. To maintain the flow's consistency, control mechanisms must then be implemented.

The design of a research topic delineates the nature of the study, encompassing experimental, survey, correlational, semi-experimental, and review research, as well as its subtypes, which include research problem, experimental design, and descriptive case study. Therefore, there are three primary categories of study designs: measurement, analysis, and data collecting. The research design will be determined by the kind of research challenge a business is experiencing, not the other way around. Which tools to employ and how to utilize them are decided upon during the design phase of a study.

Significant study typically results in less bias in the data and raises confidence in the reliability of the information gathered. In experimental research, the ideal design is typically one that yields the lowest margin of error. The fundamental components are:

i. Accurate purpose statement
ii. Methods that will be used to gather and evaluate research data.
iii. The process used to analyse the information gathered.
iv. Research methodology type.
v. Likely objections to the research
vi. Research study settings.

Therefore, the purpose of design research is to discuss and explains the method used by the researcher in providing a plan of study that permits accurate assessment in conducting the usability using the e-Faster Filter and Preview Platform for data and document management system (e-FFPP). The method of illustrating to create of an e-FFPP as show in Table 3.1.

Table 3.1: Research Design

OBJECTIVES	METHOD	INSTRUMENT	ANALYSIS	EXPECTED OUTCOME
1. To identify the constraints of using existing platform in data and document management system.	Survey	i. Quantitative ii. Respondents iii. Questionnaire iv. Google Form	SPSS Software i. Reliability test ii. Frequency Analysis iii. Descriptive Analysis • Excel-Average mean	To identify the constraints of using existing platform in data and document management system.
2. To design and develop the e-FFPP for document management system using Adalo software.	Design and develop	i. Adalo software	i. Systematic submission of data and document for the Social Impact Management Plan (SIMP). ii. Efficiently extracting chosen data and document quickly. iii. Previewing document before downloading.	To design and develop the e-FFPP for data and document management system using Adalo software for efficient social aids release to the affected fishermen due to Silicon Island Project.

3. To test the effectiveness of e-FFPP for data and document management system.	Survey	i. Quantitative ii. Respondents iii. Questionnaire iv. Google Form	• aim	To test the effectiveness of e-FFPP for data and document management system by knowing which element got the higher significant difference in mean (average mean).

3.4 DEVELOPMENT OF RESEARCH

In order to help central research administrations, research teams, and individual faculty members make connections, secure extramural research funding, and develop and carry out plans to boost institutional competitiveness, research development is a collection of proactive, strategic, catalytic, and capacity building activities. In this section, the researcher provided a detailed explanation of the application's overall functionality. To help with understanding, it was crucial to create a flowchart before launching the program. Figure 3.2 of the research framework is displayed below.

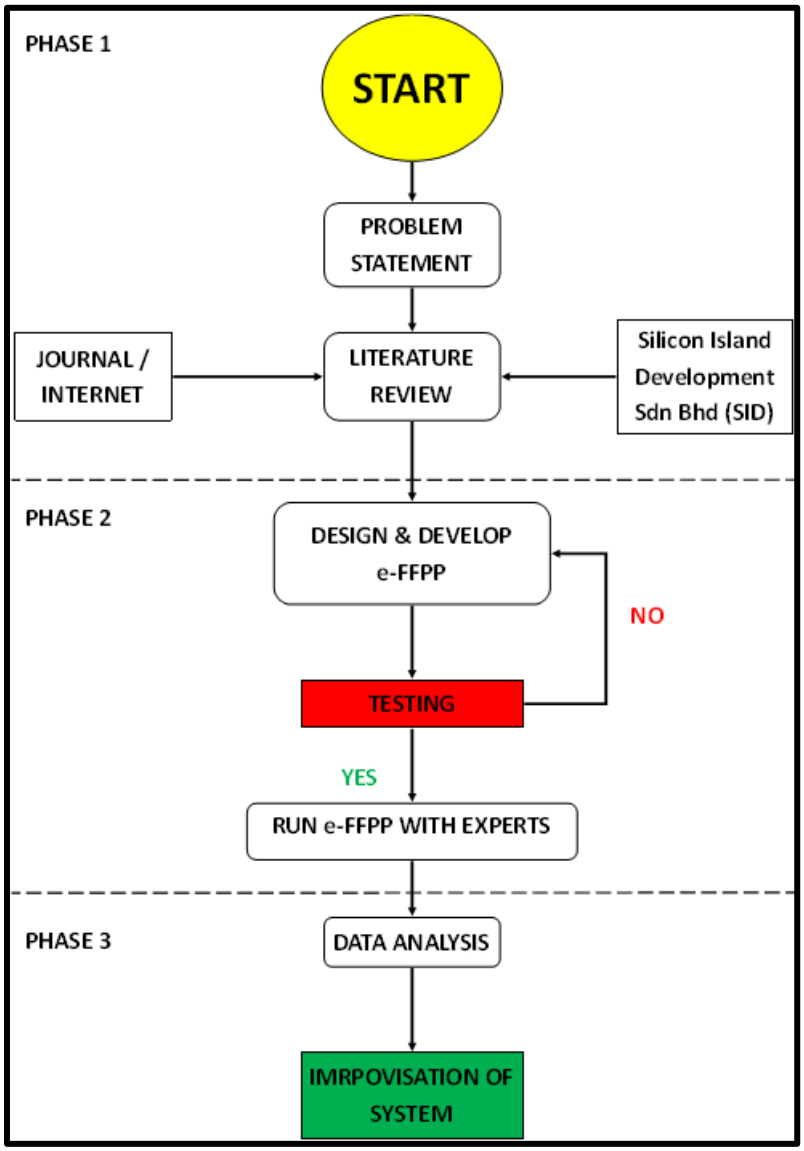


Figure 3.2: Flow of Research Framework

The project was carried out using this framework as a reference. The process used in this study is divided into numerous sections, as the picture illustrates. This development research follows the e-FFPP procedure from start to finish. Make a flow chart for this system during this phase to make sure everything goes as planned and the project is completed on time. The three phases of the methodology's research flow are depicted in full below in Figures 3.3 and 3.4.

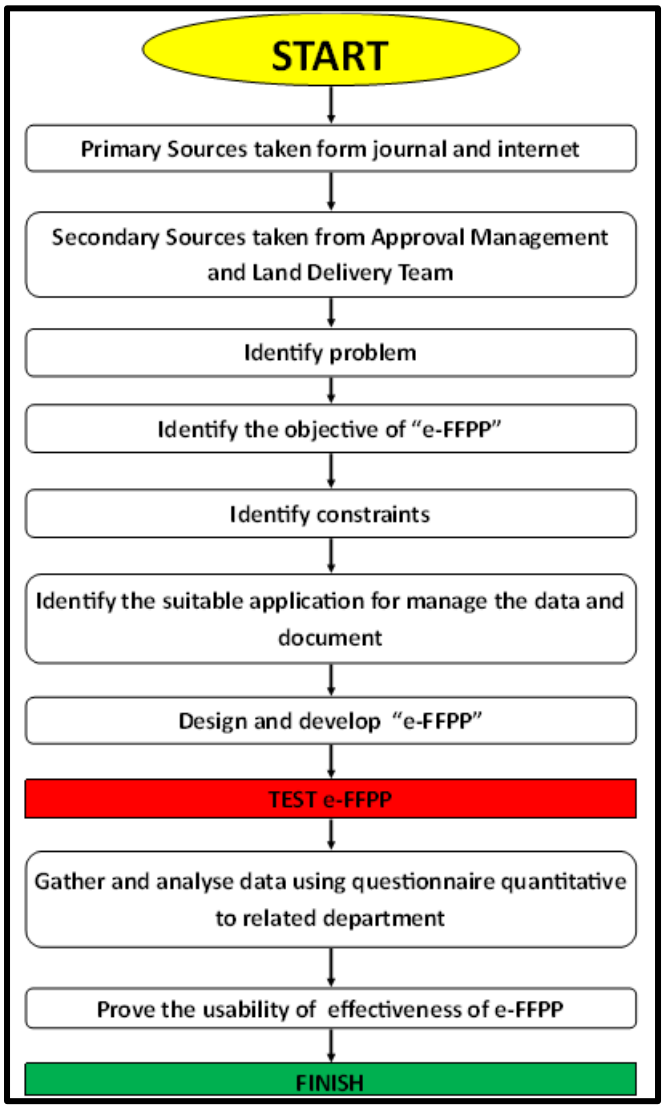


Figure 3.3: The detail of research development

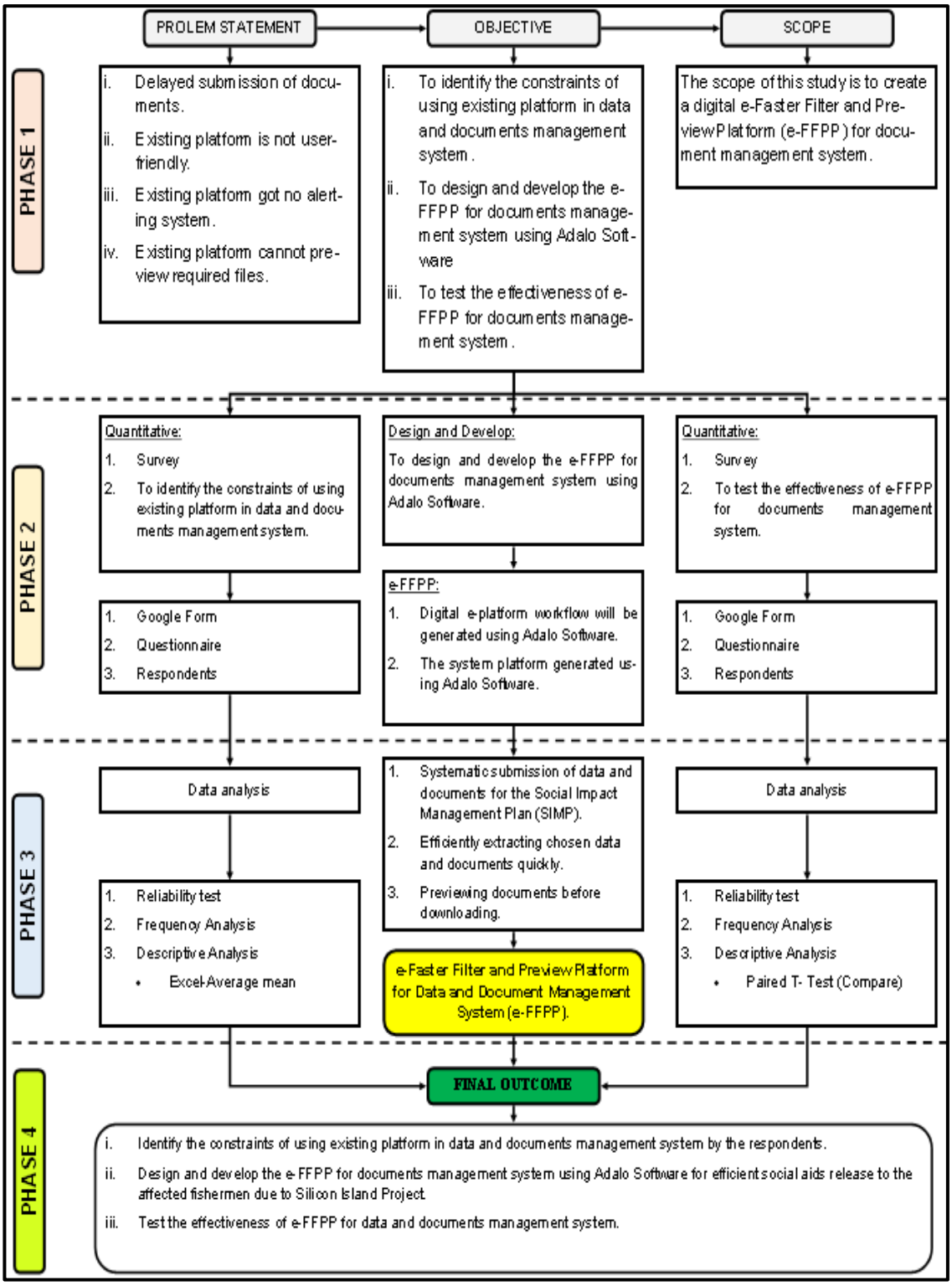


Figure 3.4: Research flow of Methodology

In general, phase 1 is the preliminary study to identify the problem statement, aims and objectives, scope of study and significance. Issues related to the selected topic were identified during this phase. Further, the study's goals to solve the problem have also been set. Phase 2 is the method of determining the problem and evaluating the effectiveness of e-FFPP as a data and document system platform. Continuing Phase 3 is the stage of the Data Analysis to achieve the objectives. Objective 1 is to identify the constraints of using existing platforms in data and document management systems, and objective 2 is to design and develop the e-FFPP for document management system using Adalo software. Objective 3 is to test the effectiveness of e-FFPP for document management system. Data for objectives 1 and 3 is collected through the questionnaire survey. Objective 2 is to develop the platform by using Adalo software. The method of data analysis for objectives 1 and 3 uses Reliability Test, Frequency Analysis. Meanwhile, objective 2 is to develop and design e-FFPP. The questionnaire for objectives 1 and 3 was distributed by Google form. The survey input was fed into the SPSS software using Frequency Analysis and Reliability Test.

3.5 SYSTEM PROCESS AND DEVELOPMENT OF E-FFPP FOR DATA AND DOCUMENT MANAGEMENT SYSTEM.

System processes are the outcome of gathering and measuring inputs and outputs for a product over its entire life cycle (ISO 14040:2006). The process of developing or modifying systems, together with the methods, processes, models, and techniques required to do so, are collectively referred to as system development. Therefore, the development of the electronic budget approval system medium and the system process are essential to guaranteeing that the process is designed and implemented correctly. All labour operations must be led by a methodical approach while creating the e-faster filter and preview platform (e-FFPP).

In certain situations, process evaluation is necessary to guarantee product efficiency and manage a successful product. SWOT analysis is applied in product development. A design approach that can assist in overcoming challenges and identifying opportunities that lead to pursuit is a SWOT (strengths, weaknesses, opportunities, and threats) analysis. In this project, the user benefits from the strength of the product. Secondly, fragility. For the product to be used going forward,

improvements must be made here. And finally, chance. An outside factor that could provide a business with a competitive edge is called an opportunity. And lastly, the danger. Anything that can potentially cause harm to an organization is considered a danger.

3.5.1 The Purpose of e-FFPP Process

The purpose of the e-FFPP is to improve the existing data and document management system by providing a more efficient filtering system and able to give document’s preview before download the file.

3.5.2 Defining Issues

The second stage of the design thinking process, define, highlights the key problems that develop into the company's industrial-based problems that need to be fixed. Throughout this process, it is imperative that students use language that is recognized, positive, relevant, and practical, stimulate students to use language that is uplifting and compassionate in order to shift the focus from the problem's negative features and the absence of answers to something that would stimulate solution-based thinking.

Forming an opinion about the issue, both our own and others', starts with defining it. Thus, the framing need to inspire the group, individual student, or class as a whole to generate ideas (Alrubail, 2015). Figure 3.5 show the main issues spotted at SIDSB.

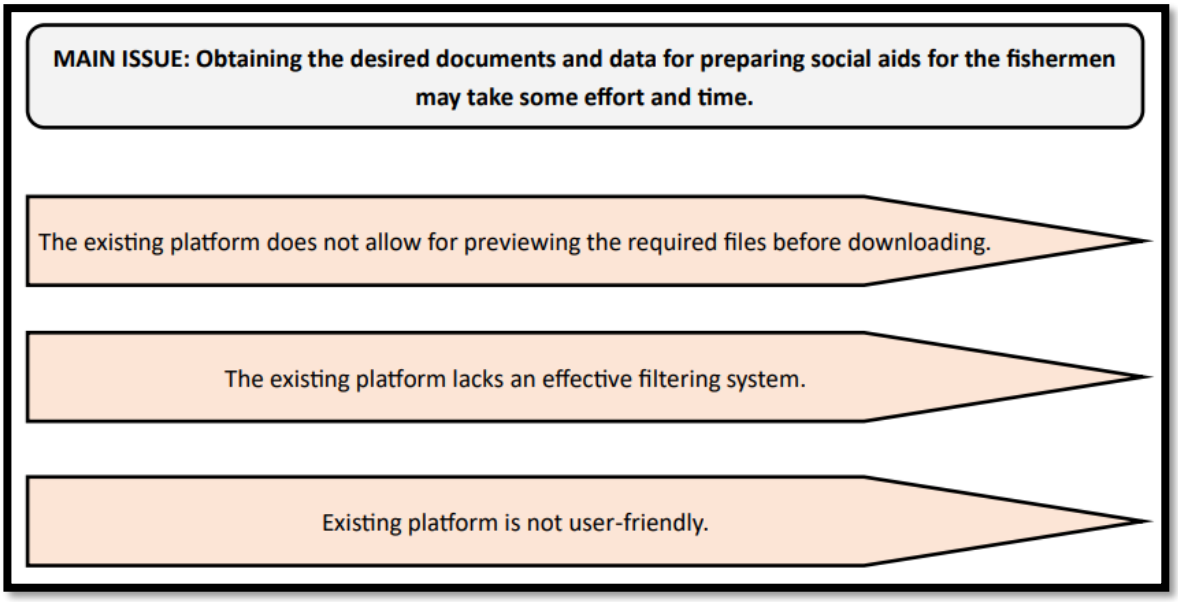


Figure 3.5: Main Issue

3.5.3 System Development

Systems development is the process of defining, creating, testing, and implementing a new software application or program. It could entail developing custom systems internally, creating database systems, or purchasing software from outside sources. Written guidelines and procedures must govern all information system processing functions. To oversee the development, procurement, implementation, and management of computerized information systems and related technologies, the organization's management must create and implement standards and implement a suitable system development life cycle approach.

Figure 3.6 below illustrates the e-FFPP system development. Requirement gathering or planning, design, implementation, and integration, testing and deployment, and maintenance are the five phases involved in system improvement.

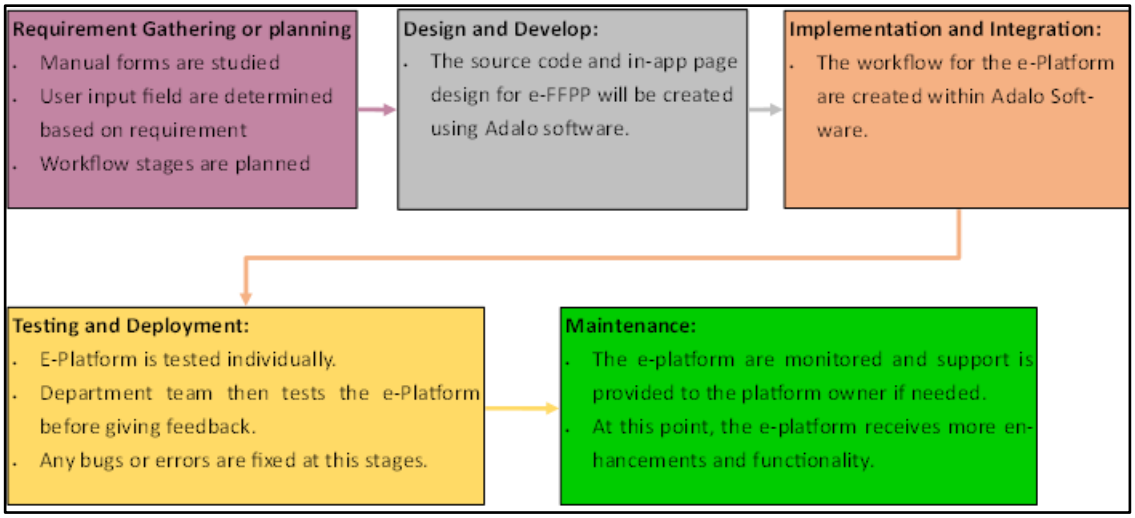
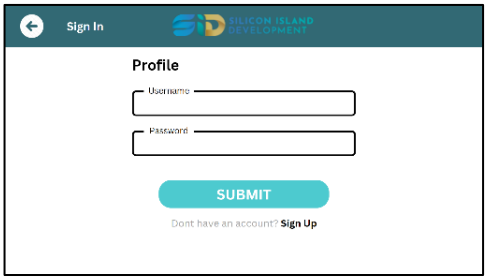
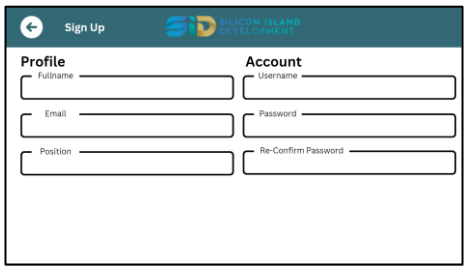


Figure 3.6: System development of e-FFPP

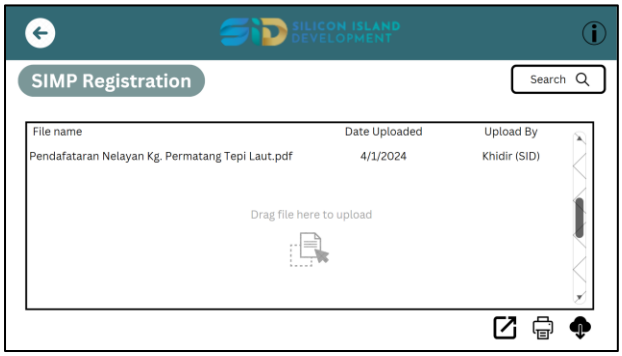
3.5.4 e-FFPP Design

Table 3.2: Design of e-FFPP

Design	
Step 1: Main Page	Step 2: Sign in.
	 If user don't have an account, they will need to sign up by clicking the bold Sign-Up word.

Step 3: Sign Up	Step 4: Home Page
 New users need to wait for admin to approve the registration before able to access the e-FFPP.	 Home pages are divided by Number of programs that has been registered under SIMP project.

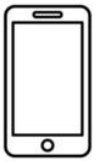
Step 3: Selected Program

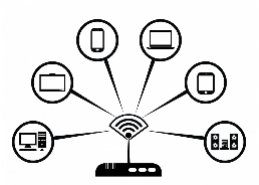
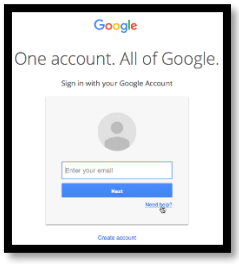


Choosing one of the programs will bring user to the interior page that provide many features such as uploading file, printing, downloading and preview by opening the selected document in another tab. User also able to find the exact document by using the search features.

3.5.5 Material Used

Table 3.3: Material Used

Materials	
Laptops  • To create a system and store data. • To test functionality of the e-FFPP medium.	Smartphone  To test functionality of the e-FFPP medium.

Internet  Uploading data from medium to any platform its need internet connection.	Adalo Software  Use to design and develop e-FFPP
Google Account/Email  To access the application.	

3.5.6 Idea of e-FFPP

Ideation Sketching, Prototyping, Brainstorming, Brainwriting, Worst Possible Ideas, and numerous more ideation techniques are all employed in the process of generating ideas and solutions during the third stage of the Design Thinking process. While many have engaged in "brainstorming" meetings, it is challenging to lead an ideation session that is really productive. In this post, we'll cover a number of guidelines and procedures that will assist you in planning and facilitating brainstorming sessions that are successful, efficient, creative, and fun. 2020; Dam & Siang. Refer figure 3.7 for overall ideate process of e-FFPP.

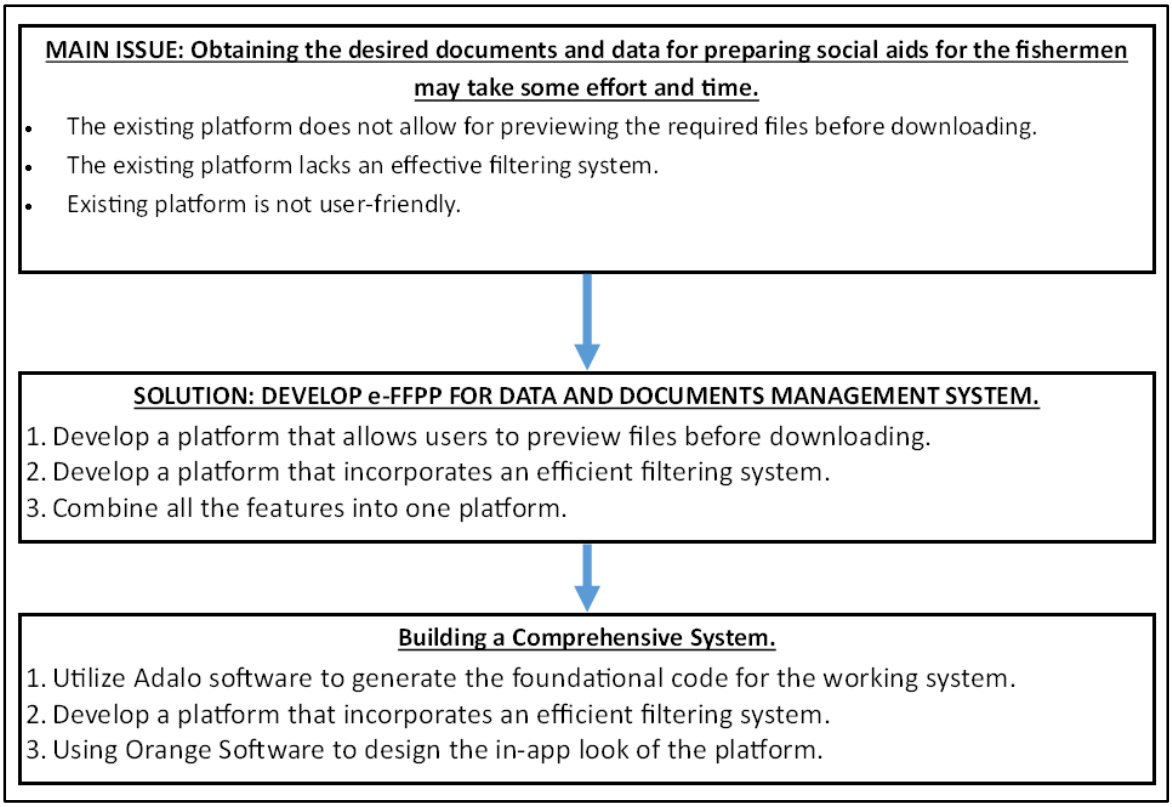


Figure 3.7: Ideate process.

3.5.7 Website Prototype for e-FFPP

A prototype is a simple experimental model of a suggested solution that can be used to test or verify concepts, design suppositions, and other aspects of its conceptualization quickly and affordably. This lets the designer involved make any necessary adjustments or potentially shift course. The figure below will explain details about the prototype for my final year project.

i. Develop a platform that allows users to preview files before downloading and has an efficient filtering system using Adalo Software.

Figure 3.8: Adalo Software

Adalo software plays a critical role in the development of the e-Faster Filter and Preview Platform (e-FFPP) by providing a user-friendly and efficient environment for creating a sophisticated data and document management system. One of the primary advantages of Adalo is its minimal coding requirement. Adalo offers an intuitive interface that allows developers to build applications using a drag-and-drop system, significantly reducing the complexity and time required for development. This feature enables the rapid implementation of functionalities such as data filtering, document preview, and user authentication, essential for the e-FFPP.

Adalo's personal domain feature ensures secure storage and easy accessibility of the database for the e-FFPP. This integrated database capability supports the creation of a centralized data repository, crucial for managing the vast amounts of information associated with the Social Impact Management Plan (SIMP). Additionally, Adalo allows developers to design and arrange workflow processes easily. This customization is achieved through Adalo's drag-and-drop interface, enabling developers to map out the e-FFPP's workflow efficiently. This includes creating user interfaces, setting up data interactions, and defining user roles, ensuring that the platform meets the specific needs of the end-users, such as staff from Silicon Island Development Sdn Bhd (SIDSB).

Adalo also supports the development of responsive applications that work seamlessly across various devices, including PCs, laptops, tablets, and mobile phones. This is particularly important for the e-FFPP as it needs to provide real-time updates and access to document from multiple devices, ensuring that users can manage data and document on the go. Adalo's systematic design system enables developers to create consistent and user-friendly interfaces for the e-FFPP. This includes designing layouts that are optimized for different screen sizes and ensuring that the platform is intuitive and easy to navigate. The ability to preview files before downloading and the efficient filtering system are essential features that enhance the user experience.

Furthermore, Adalo's compatibility with Internet of Things (IoT) technologies allows the e-FFPP to connect and exchange data with other devices and systems over the internet. This integration ensures that the platform can provide real-time updates on ongoing projects, making it a dynamic tool for data and document management. By leveraging these features, Adalo software

ensures that the e-FFPP is a robust, user-friendly, and efficient platform for managing data and document within the context of the SIMP project. The development process is streamlined, reducing time and resource expenditure while delivering a high-quality, scalable solution for SIDSB’s needs.

3.6 TESTING PRODUCT

This phase involves testing the product on users or customers to find out if they are satisfied with its ability to solve problems. In order to upgrade the product or make any necessary improvements, a questionnaire will be sent to respondents, including project managers, engineers, site supervisors, quantity surveyors, and others.

The application would be implemented while the worker was being observed at work in order to gauge its effectiveness. In order to add value to the project, feasibility assessments were conducted using primary and secondary sources. Questionnaires and observation were employed to get information from the main source. Whereas the secondary source is produced from the data and analysis gathered, the primary source originates from the data and analysis acquired.

The distributed questionnaire's goal is to learn more about the public's perception of and familiarity with this initiative. In addition, to gather any input that could be useful in enhancing this system. Subsequently, the purpose of this survey is to gather input from specific users regarding their level of agreement or disagreement with the system's concept.

While testing can be carried out at any stage of the Design Thinking process, it is usually carried out in tandem with the prototype stage. Testing in Design Thinking comprises learning more about the intended users and getting user input on the prototypes that have been built. When executed well, the testing phase of the project can often be used as input into most Design Thinking stages (Dam & Siang, 2020). A Google Form survey regarding the final year project will be sent to the intended clientele in order to assess the completed "e-FFPP for Data and Document Management System."

3.7 DATA COLLECTION

Detailed instructions on how to use Google Forms to collect data from a questionnaire are included in the collection procedures. A quantitative methodology was applied in this study. This method enables more thorough data analysis, precise data capture, and quick data collecting. There will be coverage of all site elements, respondents, and study methodology. These details ensure that all of the project's objectives can be achieved.

3.7.1 Scope of the Research

The scope of work undertaken by the Approval Management and Land Delivery Department (AMLD) within Silicon Island Development Sdn Bhd (SIDSB) is multifaceted, encompassing three key areas critical to the successful implementation of the Penang South Island (PSI) project, with a particular focus on the Social Impact Management Plan (SIMP).

The primary responsibility of our department is the holistic management of the Social Impact Management Plan (SIMP) within the PSI project. This involves a comprehensive approach to the development, implementation, and ongoing oversight of the plan. Collaborating closely with Stakeholders, especially the fishing communities directly impacted by PSI, local authorities, and relevant government agencies, we manage thorough assessments to understand and address the social and community impacts stemming from the project.

Our ultimate goal is to proactively mitigate adverse effects on the fishing communities, safeguarding their well-being and livelihoods. We strive to strike a balance that ensures the sustainable development of the PSI project while prioritizing the interests and welfare of the affected communities.

In line with our commitment to efficiency, transparency, and the well-being of impacted communities, the proposed e-FFPP for document management system serves as a strategic initiative to augment our department's capabilities. This platform is designed to streamline the social aid application process and enhance the efficiency of aid disbursement to the affected fishing communities. By leveraging technological

advancements, we aim to simplify and expedite the document management procedures associated with the SIMP.

The proposed platform not only aligns with our commitment to mitigating social and environmental impacts but also reflects our dedication to adopting innovative, Industry 4.0-inspired solutions. This integration is poised to significantly benefit both SID and the broader Penang community by ensuring a more agile, transparent, and responsive approach to social impact management within the PSI project. Refer to Table 3.4 to gain an overview of the components directly involved in the conducted study.

Table 3.4: Components directly involved in the conducted study.

COMPONENT	DESCRIPTION
Silicon Island Development Sdn Bhd	As the developer for the Silicon Island project and a company where students undergo internships.
Silicon Island Project	The island reclamation project is located near Kg Permatang Tepi Laut.
Social Impact Management Plan (SIMP)	Focus on providing social aid to the fishermen affected by the Silicon Island project.
Fishermen	The parties directly affected by the Silicon Island project.

3.7.2 Questionnaire Design.

The questionnaire design in this research is a structured and multi-faceted process aimed at effectively assessing various dimensions of the e-Faster Filter and Preview Platform (e-FFPP) for data and document management. The first element involves the strategic decision of what aspects to test for, with a dual focus on evaluating the collaboration between different disciplines and the visualization aspects of the e-FFPP. This emphasizes the need to gauge the effectiveness of interdisciplinary cooperation and the visual representation of the platform, ensuring a comprehensive evaluation of its functionalities.

The second element delves into the formulation of research questions, which are strategically designed to address distinct aspects of the e-FFPP. First Glance Testing seeks to capture users' initial impressions and perceptions upon encountering the platform. Usability Assessment delves deeper into evaluating the platform's user-friendliness and efficiency. Lastly, the Complete Experience section aims to provide a holistic understanding of users' overall interactions and experiences with the e-FFPP. These research questions are intricately designed to gather nuanced insights into users' perspectives at different stages of engagement with the platform.

The third element in the questionnaire design outlines the initiation of the prototype's user evaluation process. This entails the systematic collection of comments and suggestions from users regarding the prototype. By actively involving users in the evaluation process, the research aims to tap into their firsthand experiences and observations. The collected data from this phase is then harnessed to discern the strengths and weaknesses inherent in the prototype's design. This user-centric approach ensures that the final e-FFPP is not only technically robust but also aligns with user expectations and preferences, ultimately contributing to its effectiveness in real-world applications.

3.7.3 Location

Since the Land Delivery (Approval) and Approval management departments at Gamuda Berhad (Silicon Island Development Sdn Bhd) are having trouble locating the relevant document using the existing platform, this study will be carried out there. Respondents are the people who bear the responsibility of sending in the document.

3.7.4 Respondents

Respondents are those who take part in surveys, interviews, or provide data for a research project's data evaluation. Participation in the study requires informed agreement from respondents, whose ages may differ based on the specifics of the research. Surveys were given to the procurement department employees and the foreman, among other responders.

There were 50 responders in all, representing five departments at the Penang-based Gamuda Berhad office. Contract and Commercial (C&C), Approval Management (AM), Strategic Communication and Stakeholder Management (SCSM), Project Information Management System (PIMS), and Project Management (PMD) are the departments that are participating in this study. Sample sizes of approximately 30 to 50 are considered adequate for the CLT to hold, indicating that the sample means distribution is normally distributed. In most statistics, a sample size of thirty is appropriate. When your population data set has a sample size of 50, the confidence interval is frequently increased to the point where it can support arguments against your conclusions.

The Krejcie and Morgan Table (1970) in Figure 3.9 was used to calculate the sample size, and 44 samples were considered sufficient for a population of 50 respondents.

N	*S*	*N*	*S*	*N*	*S*
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—*N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970

Figure 3.9: Krejcie and Morgan Table

3.7.5 Questionnaire Survey

The questionnaire was used by researchers to gather data for this investigation. A google form might be used to collect data. When researchers are aware of the needs of the study, the questionnaire is a useful tool for data collection. By emailing the URLs to google forms, the questionnaire will be delivered to the responders. In this study, the questionnaire is divided into two main sections, Section A Section B and Section C. Section A will focus on the demographic information of the respondent, and Section B will focus on the criteria of e-FFPP, while Section C will focus on technology preferences and system improvement. In addition, all sections of the questionnaire will test respondents on their perception of the use of e-FFPP in construction site practice, such as implementation, employee knowledge and employee participation. A summary of information about the questions in this questionnaire is listed in Table 3.5 and Table 3.6.

Table 3.5: Distributing the objects used in the questions.

Section	**Aspects of evaluation**
A	Demography
B	Criteria of e-FFPP
C	Technology preferences and system improvement

Table 3.6: Items on the Likert scale.

Section	**Aspects of evaluation**
1	Strongly Disagree
2	Disagree
3	Acceptable
4	Agree
5	Strongly Agree

3.8 DATA ANALYSIS

The methodical use of logical and/or statistical methods to condense, summarize, explain, and assess data is known as data analysis. Diverse techniques and tactics exist for analysis, contingent on the sector and the goal of the study. The bases of all these data processing strategies are found in both quantitative and qualitative research methods.

The data will be calculated using the Statistical Package for the Social Sciences (SPSS) software after it has been collected. The data will be represented via tables and a pie chart showing the percentages of responders. Furthermore, there are several statistical techniques that can be applied, such as:

i. One form of data analysis is descriptive statistics, which includes techniques like frequencies, cross-tabulation, and descriptive ratio statistics.
ii. Another approach uses techniques such as linear regression to anticipate numerical outcomes.
iii. A third strategy involves using techniques like factor analysis and cluster analysis to determine group identities.

A paired T-test will be employed for the E-Faster Filter and Preview for data and document management system (e-FFPP).

3.8.1 SPSS Statistics (Statistical Package for the Social Sciences Statistics)

Figure 3.10: IBM SPSS

The abbreviation for "Statistical Package for the Social Sciences" is SPSS, or "Statistical Package for the Social Sciences." It's an IBM application. 1968 saw the

original introduction of this gadget. There is only one piece of software here. The majority of uses for this software are in statistical data analysis.

Market researchers, health researchers, survey companies, education researchers, government agencies, marketing groups, data miners, and other professionals in the domains of marketing, healthcare, and educational research are the main users of SPSS. Data is analysed for group identification, descriptive statistics, and numerical result forecasts. To aid in efficient data management, this tool also has features for data processing, graphing, and direct marketing (SPSS, 2021). Refer to Table 3.7 for instructions on how to use SPSS for data analysis.

Table 3.7: How to use SPSS for data analysis.

No.	Step to analyse data using SPSS
1	**Loads excel file with all the data:** Once all of the data has been gathered, prepare an excel file with all of the data included using the appropriate tabular formats.
2	**Import the data into SPSS:** The raw data from an excel spreadsheet must be imported into SPSS. SPSS will analyse the data after it has been loaded.
3	**Give the specific SPSS commands:** Depending on the type of data to be analysed, enter the appropriate instructions in the SPSS program. Each tool comes with instructions on how to use it and the ability to input all of the parameters for the most accurate results.
4	**Retrieve the results:** The software's results are delivered quickly and precisely, giving researchers a clearer notion of what studies to do next and how to proceed.
5	**Analysing process for the graphs and charts**
6	**Postulate conclusions based on the analysis:** The SPSS's ultimate goal is to assist in the development of conclusions based on particular research. The program makes it simple to draw inferences and forecast the future with little statistical variance. (wikiHow, 2021).

3.9 TECHNOLOGY ACCEPTANCE MODEL (TAM)

The 1989 study by Fred Davis served as the foundation for the creation of the Technology Acceptance Model (TAM model). The TAM model states that a product's adoption rate is mostly determined by the user's experience rather than the features it provides. Before Fred Davis started his research, there was general consensus that the goal of the product is what dictates how widely a system would be distributed. Not shocking. It is surprising to learn that, even if this was known at the time, prospective consumers' opinions have a significant impact on the decision to use a product.

According to the technological acceptance model, for example, perceived usefulness and perceived ease of use have the biggest effects on how quickly new products are adopted, with perceived usefulness having a weight that is around 1.5 times more than perceived ease of use. Perceived usefulness refers to how much a consumer feels the product has enhanced worth or utility, whereas perceived usability refers to how easy it is to use. The idea states that external factors that can affect both parts include friend recommendations, society norms, and past knowledge.

3.10 SUMMARY

In this comprehensive methodology chapter, the research embarks on a journey guided by the principles of Design Thinking to conceptualize and actualize the e-Faster Filter and Preview Platform (e-FFPP) for data and document management. Acknowledging the significance of creativity in design, the process is methodically structured to transform ambiguous needs into a tangible solution. Design thinking, highlighted as a dynamic problem-solving approach, underscores empathy, ideation, prototyping, and continuous iteration. Emphasizing user perspectives, technical feasibility, and business considerations, this approach ensures the development of a system that aligns with both artistic and economic objectives.

The research design serves as the cornerstone, delineating the study's nature and methods. The three primary categories of study designs—measurement, analysis, and data collection—are seamlessly integrated into the study objectives. The careful design ensures that the research addresses the challenges faced by Silicon Island Development Sdn Bhd (SIDSB) in data and document management effectively. This is achieved

through a structured process involving surveys, development using Adalo software, and subsequent testing for effectiveness.

The development phase unfolds as a strategic initiative, aligning with the objectives of the Approval Management and Land Delivery Department (AMLD) within SIDSB. The e-FFPP is designed to streamline the Social Impact Management Plan (SIMP), aiming to efficiently manage social aid application processes and disbursements to affected fishing communities. The scope of the research is delineated, focusing on the multifaceted responsibilities of AMLD within the Penang South Island (PSI) project.

The study systematically progresses through system processes, development, design, ideation, and prototyping, culminating in the testing of the e-FFPP. The latter involves observing workplace implementation and collecting feedback through questionnaires. The data collected is subjected to quantitative analysis using the Statistical Package for the Social Sciences (SPSS) software, while the Technology Acceptance Model (TAM) is incorporated to assess user perceptions. This methodology, characterized by its holistic and structured approach, lays the foundation for achieving the study's goals of enhancing data and document management systems within the context of the Silicon Island project.

CHAPTER 4

DATA AND ANALYSIS

4.1 Introduction

The researcher describes the project's anticipated outcome in this chapter. The analysis of the data that the researchers will gather throughout the course of the study is an essential part of the planning process. They want to be sure that the data they collect will enable them to achieve their objectives. This chapter also includes specifics regarding the survey respondents' demographic data. Over 44 respondents were given questionnaires utilizing a quantitative approach, and Excel was used to process their responses. A T-Test calculator for two dependent means and the Statistical Package for the Social Sciences (SPSS) version 27 were used to examine the data. The E-Faster Filter and Preview Platform for Data and Document Management System (e-FFPP) is anticipated to help achieve the following aim and objectives to develop e-FFPP using Adalo software for systematic data and document management. First objective is to identify the constraints of using existing platform in data and document management system. Second, design and develop the e-FFPP for data and document management system using Adalo software. Lastly, to test the effectiveness of e-FFPP for data and document management system.

4.2 TO IDENTIFY THE CONSTRAINTS OF USING EXISTING PLATFORM IN DATA AND DOCUMENT MANAGEMENT SYSTEM.

4.2.1 Data Collection.

This study shares the results of a survey conducted using Google Forms. The survey was sent to various people involved in projects, such as project managers, engineers, site supervisors, assistant managers, quantity surveyors, and others, as shown

in Appendix C. The goal was to see if we need an E-Faster Filter and Preview Platform (e-FFPP) for managing data and document. The survey had three parts: Section A asked about the background of the respondents, Section B asked about what the e-FFPP should have, and Section C asked about preferences for technology and how to improve the system. The survey links were sent to 44 people by the Contract & Commercial Team, Approval Management, Strategic Communication & Stakeholder Management, Project Information Management System, and Project Management by G-Form.

4.2.2 Demographic Data

Section A is a demographic data section that includes four questions on the respondent's backgrounds. The respondents of pre and post questionnaire were same. The items are as follows:

a. Gender
b. Age
c. Position
d. Work Experience

a. Gender

This research included 30 (68.2%) male respondents and 14 (31.8%) female respondents. Male respondents exceed female respondents by a wide margin, as seen by the proportion. This is because a male, rather than a woman, dominated the responses at the Silicon Island Development Sdn Bhd main office. The number of respondents by gender is shown in Table 4.1 below.

Table 4.1 The number of respondents by gender

Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	30	68.2	68.2	68.2
Female	14	31.8	31.8	100.0
Total	44	100.0	100.0	

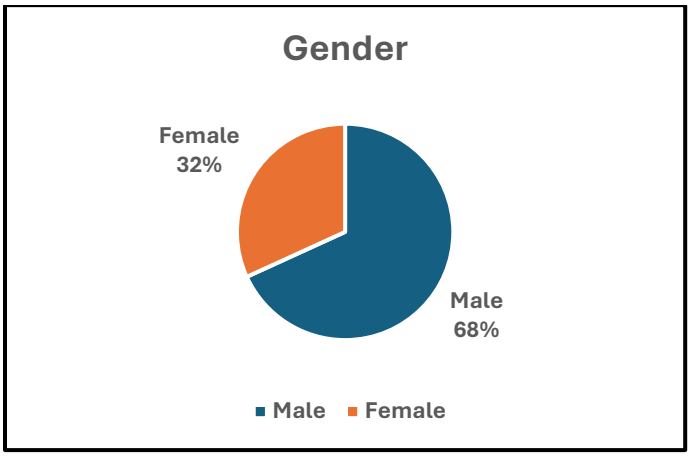


Figure 4.1 The percentages of respondents by gender.

b. Age

Table 4.2 below shows the number and percentage of respondents in the age category divided into seven categories. This section was formed to assist with data processing and identifying respondents at office by several department. In the survey, showing the age group of 35 - 44 is the largest number of respondents with 20 people (45.5%), the age group of 25 - 54 years old is the second largest number of respondents which is a total of 17 respondents (38.6%), the third largest number of respondents is the age group of 45 - 54 years old which is as many as 5 respondents (11.4%). For the age group of 18 - 24 years old there are 6 respondents with 13.6%. Meanwhile for the under-18 age group, 55 – 64 years old and the age group of 65 years old above, there were no respondents.

Table 4.2 The percentage of respondents by age

Age	Frequency	Percent	Valid Percent	Cumulative Percent
18 - 24 years old	2	4.5	4.5	4.5
25 - 54 years old	17	38.6	38.6	43.2
35 - 44 years old	20	45.5	45.5	88.6
45 - 54 years old	5	11.4	11.4	100.0
Total	44	100.0	100.0	

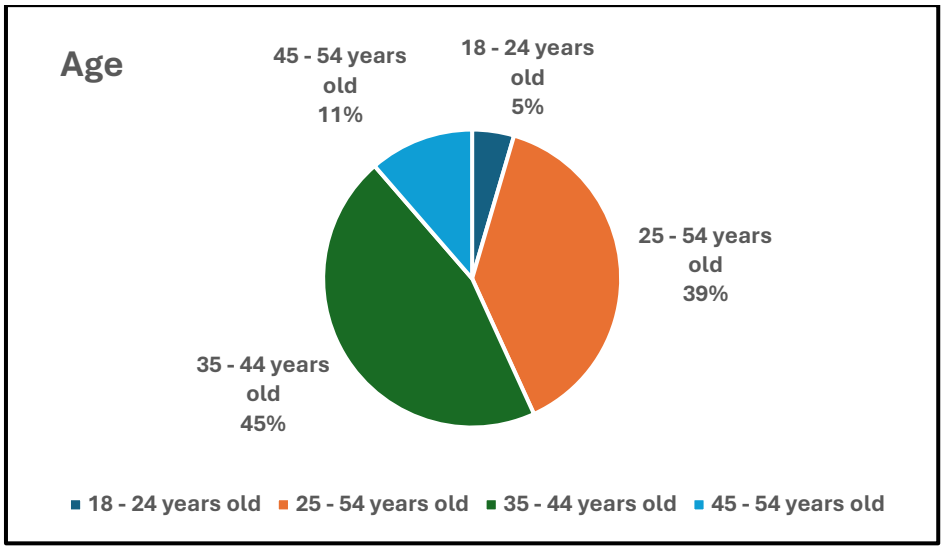


Figure 4.2 The percentage of respondents by age

c. Position

Positions in the Silicon Island Development office, which comprises Head of Department, Project Manager, Manager, Assistant Manager, Quantity Surveyor, Executive, Engineer, Supervisor, Officer, and Others. Table 4.3 shows that Officer have the most respondents which are 8 respondents (18.2%). The second largest respondent is the Engineer with a total of 7 respondents (15.9%). The third largest respondent is the Manager, Quantity Surveyor, Supervisor and Assistant Manager with a total of five respondents (11.4%). For Head of Department and intern with two respondents (4.5%). In addition, an Executive have a total of four respondents (9.1%) and Project Manager has one respondent (2.3%).

Table 4.3 The number of respondents by position

Position		Frequency	Percent	Valid Percent	Cumulative Percent
Head of Department	2	4.5	4.5	4.5	
Manager	5	11.4	11.4	15.9	
Assistant manager	5	11.4	11.4	27.3	
Officer	8	18.2	18.2	45.5	
Engineer	7	15.9	15.9	61.4	

Executive	4	9.1	9.1	70.5
Supervisor	5	11.4	11.4	81.8
Quantity Surveyor	5	11.4	11.4	93.2
Project Manager	1	2.3	2.3	95.5
intern	2	4.5	4.5	100.0
Total	44	100.0	100.0	

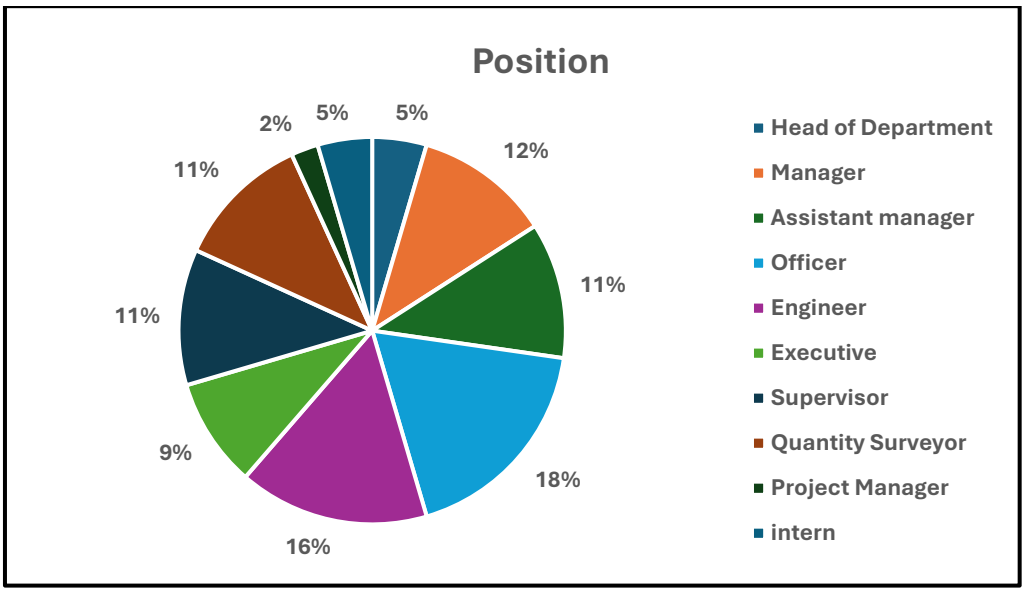


Figure 4.3 The percentage of respondents by position

d. Work Experience

Table 4.4 below shows the work experience of the respondents. A total of sixteen respondents (36.4%) has work experience of two to five years. A total of fifteen respondents (34.1%) has six to ten years of work experience. A total of ten respondents (22.7%) has more than ten years of work experience. Meanwhile a total of 3 respondents (6.8%) have less than two years of work experience.

Table 4.4 The percentage of respondents by work experience

Work Experience	Frequency	Percent	Valid Percent	Cumulative Percent
< 2 years	3	6.8	6.8	6.8
2 - 5 years	16	36.4	36.4	43.2
6 - 10 years	15	34.1	34.1	77.3
> 10 years	10	22.7	22.7	100.0
Total	44	100.0	100.0	

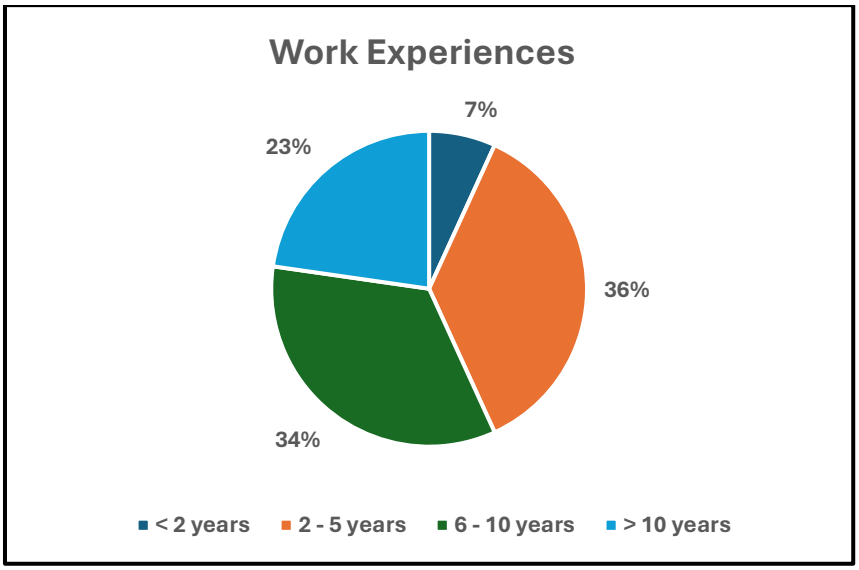


Figure 4.4 The percentage of respondents by work experience

4.2.3 Respondent Perspective

Section B and Section C present respondents' perspectives. Section B focuses on the constraint elements of the existing method for data and document management systems, while Section C focuses on technology preferences and system improvement. Respondents were asked to select their level of agreement on the following issues according to a scale of 1 to 5. Table 4.5 displays the results of a questionnaire distributed to respondents, which includes Department Heads, Project Managers, Managers, Assistant Managers, Quantity Surveyors, Executives, Engineers, Supervisors, Officers,

and Others, to determine what needs to be resolved regarding the existing method issue in data and document management systems. Table 4.6 below shows the collection of issue data related to the existing method.

Table 4.5 Level of agreement

Level of Agreement				
Strongly Disagree	Disagree	Slightly Agree	Agree	Strongly Agree
1	2	3	4	5

Table 4.6 Issue related to existing method Efficiency data and document management system.

SECTION B: PRE-TEST

No	**Constraints element of using existing method in data and document management system**	**Issues related to the existing method in data and document management system.**	**Level of Agreement**				
			Strongly Disagree	**Disagree**	**Slightly Agree**	**Agree**	**Strongly Agree**
			1	**2**	**3**	**4**	**5**
1	Efficient data and document management system.	a) The existing method can efficiently manage data and document in a short time.	21	16	3	2	2
		b) The existing method provides an easy way to filter and preview data and document management.	38	5	0	0	1

		c)	Existing method is efficient platform to manage data and document for Packages to the Affected Fisherman.	24	13	5	2	0
		d)	The existing method can minimize defects in data and document management.	22	14	6	2	0
2	Faster Filter and Preview Platform	a)	The existing method allows for faster filtering and retrieval of document.	38	5	0	0	1
		b)	The existing method is easy and not complex in the document filling process.	25	12	5	1	1
		c)	The existing method does not cause delays in the submission of document.	24	14	4	1	1
		d)	The existing method is fast and easy to preview required files immediately.	36	6	1	0	1

3	Faster Filter and Preview Platform	a)	The existing method is not a main problem causing pending and delays in social aids releasing to affected fishermen due to the Silicon Island project.	24	12	5	3	0
		b)	The existing method, as a digital platform, consistently aligns with expectations for document and data management and does not contribute to delayed social aid disbursement.	23	14	4	2	1
		c)	The existing method allows enough time to manage data and document for packages to the affected fishermen.	26	11	5	1	1
4	User Friendly	a)	The existing method is easy to use and convenient for users.	27	12	3	1	1

b)	The existing method allows users to easily grasp data and document with proper pop-up features preview before download.	35	7	1	0	1
c)	The existing method is easily accessible for urgent requests to search for required data.	30	10	2	1	1

SECTION C: TECHNOLOGY PREFERENCES AND SYSTEM IMPROVEMENT

No	Component	Level of Agreement				
		Strongly Disagree	**Disagree**	**Slightly Agree**	**Agree**	**Strongly Agree**
		1	**2**	**3**	**4**	**5**
1	To what extent do you agree or disagree with the need for developing a new digital document management platform system to enhance data and document management efficiency?	0	0	0	8	36
2	How do you perceive the potential of an electronic Faster Filter and Preview Platform in simplifying the data and document management system?	0	0	0	9	35

3	indicate your level of support for the integration of advanced technology to improve data and document management within your current work environment.	0	0	0	7	37
4	Based on your experience, to what extent do you believe that a technologically enhanced system would positively impact the overall efficiency of the data and document management processes?	0	0	0	7	37
5	How open are you to adopting a user-friendly digital platform with features aimed at streamlining data and document management tasks?	0	0	0	7	37

4.2.4 Data Analysis

The acronym SPSS stands for Statistical Package for the Social Sciences, which is a tool widely used by researchers to analyse complex statistical data. In this study, SPSS will be used for data analysis. Data analysis involves applying logical and statistical techniques to justify, prove, and condense information. It's a way to assess and summarize data. Researchers use data analysis to break down large amounts of data into smaller, more manageable parts and examine it from various perspectives.

4.2.5 Reliability Test

Reliability analysis is used to study the properties of measurement scales and their constituent items. It calculates several commonly used metrics for scale reliability and provides information on item correlations. Intraclass correlation coefficients are employed to assess reliability between raters. Table 4.7 illustrates the range of reliability and Cronbach’s Alpha coefficient, while Table 4.8 presents the questionnaire results.

Table 4.7 Range of reliability and its coefficient of Cronbach's Alpha

No	Coefficient of Cronbach's Alpha	Reliability Level
1	> 0.90	Excellent
2	0.80 – 0.89	Good
3	0.70 – 0.79	Acceptable
4	0.60 – 0.69	Questionable
5	0.50 – 0.59	Poor
6	< 0.50	Unacceptable

The reliability test results of the pre-test questionnaire are presented in Table 4.8, showing a Cronbach's Alpha coefficient of 0.950. This coefficient exceeds the threshold of 0.90, indicating an excellent level of reliability. Thus, these findings confirm strong validity for the questionnaire, establishing it as a robust assessment tool.

Table 4.8 Reliability Test

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.950	.953	14

4.2.6 Frequency Analysis

Frequency analysis is a generic approach to analysis that is used in many scientific disciplines, not just social measurement research. Moreover, it is a statistical branch that investigates the number of occurrences (frequency) and assesses metrics such as central tendency, dispersion, percentiles, and so on. Using Excel Solution to obtain the analysis frequency date. Table 4.9 show the result of Frequency Analysis of Current Method below.

Table 4.9 Percentage of the respondents agree and disagree with the current method.

Existing Method	Level of agreement				
Constraint elements of the existing method for data and document management system.	**Strongly Disagree**	**Disagree**	**Slightly Agree**	**Agree**	**Strongly Agree**
Efficient data and document management system.	59.65%	27.28%	7.95%	3.38%	1.7%
Faster Filter and Preview Platform	69.88%	21.03%	5.7%	1.15%	2.3%
Efficient Social Aids release to affected Fisherman	55.3%	28.03%	10.63%	4.53%	1.53%
User Friendly	69.7%	21.97%	4.53%	1.53%	2.3%

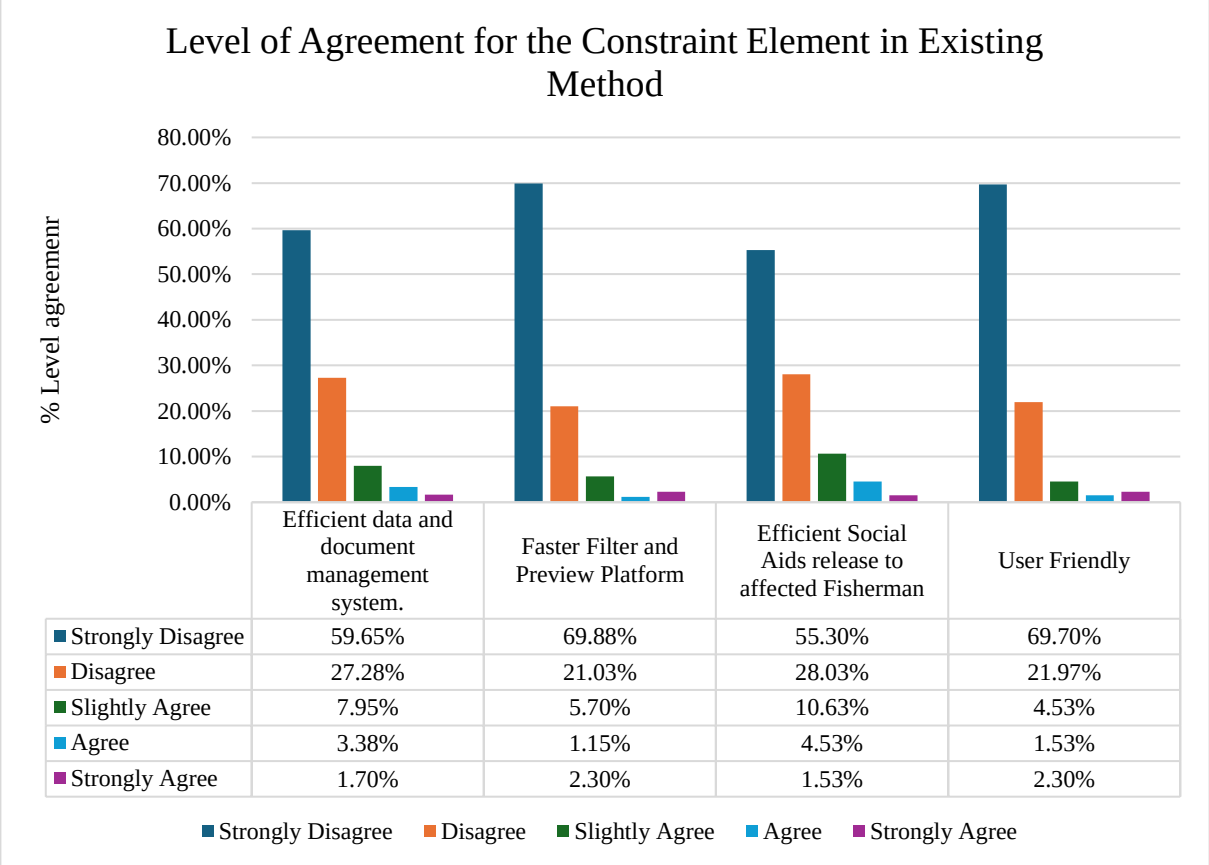


Figure 4.5 Percentage of level agreement of existing method

Figure 4.5 shows the percentage of respondents who disagree with the use of existing method for data and document management system. From the percentage it shows that resulted is more than 80% in all constraint elements.

4.2.7 Descriptive Test

Descriptive statistics outline the features of a dataset and classify measurements into two categories: measures of central tendency and measures of variability. Measures of central tendency pinpoint the centre of a dataset, while measures of variability depict the spread of data within it. This analysis is conducted using SPSS version 27.

a. Mean

The mean, also referred to as the arithmetic mean or average, serves as a key measure of central tendency in descriptive statistics. It represents the typical value of a variable in a dataset and is computed by summing all values and dividing by the total number of observations. In the context of this study, the mean offers a concise summary statistic that provides insights into the central position or average level of the constraint element among the 44 participants. By analysing the mean, we gain a better understanding of the overall magnitude or central value of the variable within our data.

Table 4.10 Mean in constraint elements for existing method.

	N	Mean		Std.	Variance
	Statistic	Statistic	Std. Error	Deviation	Statistic
Efficient data and document management system.	44	1.8182	0.16018	1.06253	1.129
	44	1.2045	0.10063	0.6675	0.446
	44	1.6591	0.12982	0.86113	0.742
	44	1.7273	0.13152	0.87241	0.761
Faster Filter and Preview Platform	44	1.2045	0.10063	0.6675	0.446
	44	1.6591	0.14151	0.93866	0.881
	44	1.6591	0.13772	0.91355	0.835
	44	1.2727	0.1096	0.72701	0.529
Efficient Social Aids release to affected Fisherman	44	1.7045	0.14014	0.9296	0.864
	44	1.7273	0.14672	0.97321	0.947
	44	1.6364	0.14206	0.94231	0.888
User Friendly	44	1.5682	0.13561	0.89955	0.809
	44	1.2955	0.11064	0.73388	0.539
	44	1.4773	0.13202	0.87574	0.767

Table 4.10 show the results of respondent about the mean score for constraint elements to the existing method for data and document management system. There are 4 constraint elements of the existing method for data and document management system. The data was generated by using SPSS Software, version 27.

b. Average Mean

The average mean, or arithmetic mean, represents the typical value of a variable in the dataset, calculated by summing the values and dividing by the sample size. It provides insight into the central tendency and level of the variable among the participants. The average mean of constraint element as show Table 4.11 below.

Table 4.11 Mean and average mean of the constraint element for existing method

No	Constraint elements of the existing method for data and document management system.	Mean	Average Mean	Average Mean (%)
1	**Efficient data and document management system.**	1.8182	1.6023	25.895
		1.2045		
		1.6591		
		1.7273		
2	**Faster Filter and Preview Platform**	1.2045	1.4489	23.416
		1.6591		
		1.6591		
		1.2727		
3	**Efficient Social Aids release to affected Fisherman**	1.7045	1.6894	27.303
		1.7273		
		1.6364		
4	**User Friendly**	1.5682	1.447	23.385
		1.2955		
		1.4773		
	Total Average	**1.5438**	**6.1876**	**100**

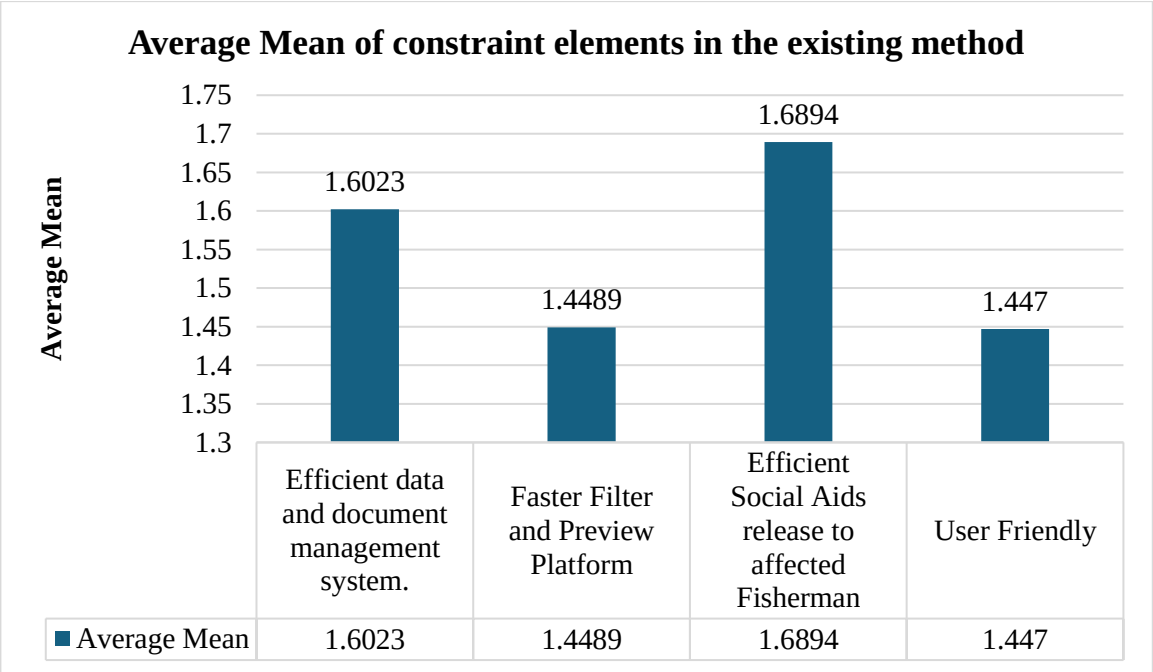


Figure 4.6 Average mean in constraints element.

Based on the bar chart in Figure 4.6, the average means for all constraints elements are below 1.7, indicating a significantly low level as interpreted from Table 4.12. Notably, particular attention should be directed towards addressing constraint element of four (4) numbers, necessitating the development of an effective system to resolve the limitations associated with the existing method.

According to the statistics in Table 4.11 and Figure 4.6 above, the greater percentage rate of average mean, the require an electronic Faster Filter and Preview Platform for data and document management system (e-FFPP) medium is efficient social aids release to affected fisherman with 1.69. Second, efficient data and document management system with 1.60. Third, faster filter and preview platform with 1.449. Last but not least, user friendly with 1.447.

Table 4.12 Mean range and interpretation of usability.

No	Mean Range	Interpretation
1	4.51 – 5.00	Very High
2	3.51 – 4.50	High
3	2.51 – 3.50	Medium

4	1.51 – 2.50	Low
5	1.00 – 1.50	Very Low

Table 4.13 Constraints element of current method

Variables	Mean	Interpretation
Efficient data and document management system.	1.6023	Low
Faster Filter and Preview Platform	1.4489	Very Low
Efficient Social Aids release to affected Fisherman	1.6894	Low
User Friendly	1.447	Very Low

Table 4.13 above shows, respondent level of usability toward existing method whereby analysis shows for all variables tested the mean score less than 1.70 average mean meaning that the constraints element of current method was low based on Table 4.13, interpretation. Therefore, needs to develop the systematic and efficient data and document management system. However, an electronic system is important to use in construction industry which need to achieve IR 4.0 which includes the four (4) constraint element such as efficient data and document management system, faster filter and preview platform, efficient social aids release to affected fisherman and User Friendly. Hence, the e-Faster Filter and Preview Platform for data and document management system (e-FFPP) is needed solve the constraint element of existing method of data and document management system.

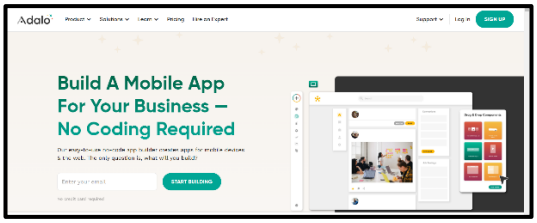
4.3 TO DESIGN AND DEVELOP THE E-FFPP FOR DATA AND DOCUMENT MANAGEMENT SYSTEM USING ADALO SOFTWARE.

A network of physical objects, or "things," that have been embedded with sensors, software, and other technologies to connect and exchange data with other devices and systems over the internet is known as the Internet of Things (IoT). Adalo software was selected as the application platform to enable the creation of this e-FFPP throughout the development of the data and document management system. Web app developers frequently choose Adalo software because it is easy to use when creating new systems or applications. This system is connected to the Internet of Things (IoT)

since it can be used on PCs, laptops, mobile phones, and tablets to give real-time updates on ongoing projects, but it does require internet connectivity.

4.3.1 To design and develop e-FFPP.

Table 4.14 The process to design and develop e-FFPP as data and document management system.

Design and develop	Work Description
	**Step 1:** Adalo Software app developer. Adalo software provide a personal domain to act as the storage of the database of e-FFPP. Adalo provide feature that allow user to develop a website app with minimum coding requirement
	**Step 2:** e-FFPP workflow process. Adalo allow developer to arrange the e-FFPP workflow by using click and drag system that make it easier for developer.
	Step 3: Adalo systematic design system. Adalo allow developer to design app layout for each size of layout that is Mobile, Tab and PC layout.

	
	Step 4: e-FFPP developed and ready to use. User can access e-FFPP if they have the permission from the admin.

4.3.2 End product of e-FFPP

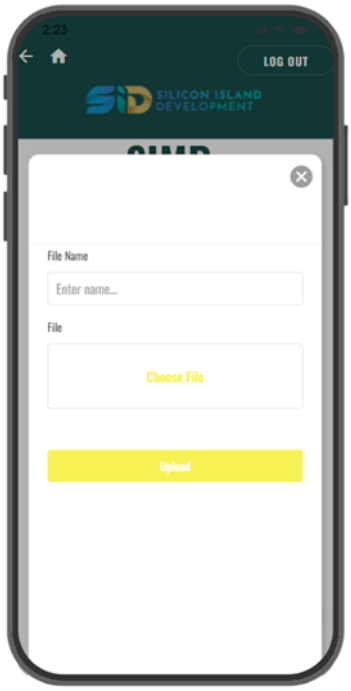
This product was successfully developed using Adalo Software. Based on the goal of the project, is to develop an e-Faster Filter and Preview Platform (e-FFPP) for document and data management system. The product must achieve the efficiency objective of the Electronic Faster Filter and Preview Platform (e-FFPP) for document and data management system. In this system, there are only focus on Social Impact Management Plan project.

4.3.3 Data and Document uploading system.

Table 4.15 Show how e-FFPP workflow.

e-FFPP	Workflow Description
	**Step 1:** Display Sign up page in e-FFPP.
	**Step 2:** user that already has an account will seeing the Log in page. User that categorizes as Silicon Island Development Sdn Bhd (SID) staff must tick on the blank box. Administration system will authenticate the staff credential.

	**Step 3:** Display the home page in e-FFPP. The display button a made based on the current project that SIDSB handle. For example, if there are 3 project that being handled by SIDSB than there will be 3 buttons on the homepage.
	**Step 4: S**hows the button for user to select their sub program. Under Social Impact Management Plan (SIMP), there is 5 sub programs. Such as SIMP Registration, Fishermen Jetty, Boat & Engine, Ex-gratia and Education.
	**Step 5: S**how the list of uploaded files. The upload file button only can be seen if the user is SIDSB staff.

	**Step 6:** Display the uploading form to be filled to add new document. User only need to type the document name and upload the document
	**Step 7: S**how the preview for the selected file. User able to preview the file before download or print the selected file.

4.3.4 Analysis the development of e-FFPP

Regarding the need for an electronic platform for an efficient data and document management system, more than 90% of respondents agreed based on six categories to develop e-FFPP for efficient data and document management system., faster in filtering and able to preview selected file, efficient social aids release to affected fisherman and user friendly. The main objective of efficiency analysis is to understand how inputs are converted into valuable output.

4.3.5 Test the product.

Product testing involves evaluating a product's features and performance. It is also known as customer testing or comparative testing. The final product was assessed using a questionnaire distributed via Google Forms. This product was tested on 44 respondents from five departments at the Gamuda Berhad office in Penang. The departments involved in this survey are Contract and Commercial (C&C), Approval Management (AM), Strategic Communication and Stakeholder Management (SCSM), Project Information Management System (PIMS), and Project Management (PMD). The questionnaire was based on the Technology Acceptance Model (TAM), a well-known theory of technology adoption.

According to Fred Davis's research, the decision to use a product is greatly influenced by how potential customers perceive it. The Technology Acceptance Model suggests that perceived usefulness and perceived ease of use are the most significant factors in the adoption of a new product, with perceived usefulness being 1.5 times more influential than perceived ease of use. External factors such as societal norms, recommendations from friends, and prior knowledge can also affect these perceptions.

Table 4.16 below shows the feedback from the testers. Each of the five departments had one person test the product. Before releasing the product to the public, feedback based on their expertise with e-FFPP was gathered to enhance the user experience. As a result, the product has become more systematic and efficient for data and document management.

Table 4.16 Tester feedback

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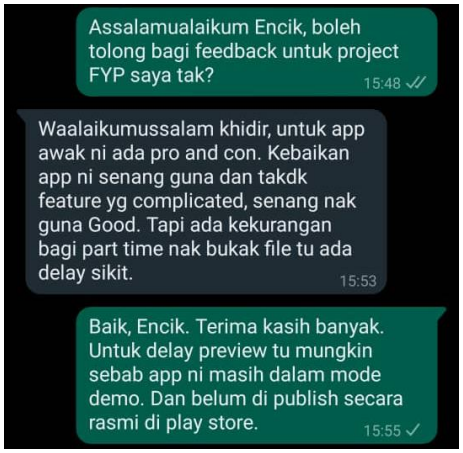
<tr><td> 
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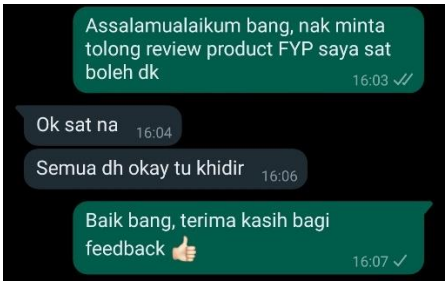
<tr><td> 
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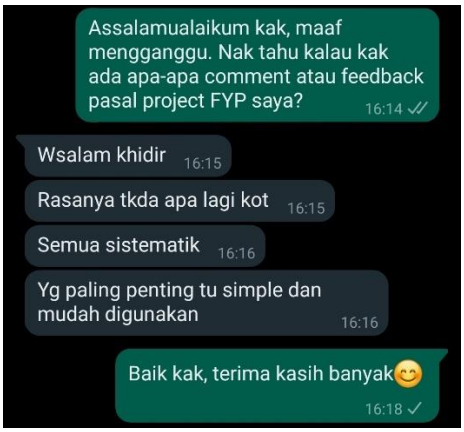
<tr><td> 
</td><td></td></tr>
</table>

4.4 TO TEST THE EFFECTIVENESS OF E-FFPP FOR DATA AND DOCUMENT MANAGEMENT SYSTEM.

This study presents the data and research findings gathered via an in-person interview and questionnaire. The project's goals and their results were also covered in this chapter. It will describe the results attained for the goals and state if they were accomplished. The table 4.17 below to e-FFPP lists the problems with e-FFPP.

4.4.1 Dara Collection

There are 44 responses for the e-FFPP post-questionnaire, the same number as for the pre-questionnaire. The questionnaire was collected using Google Forms, as shown in Appendix D. As a result, demographic data collection will follow the same procedures as the pre-questionnaire. The results from the 44 respondents are shown in Appendix E.

4.4.2 Data collection of level agreement

Table 4.17 Frequency analysis element for e-FFPP

SECTION B: POST-TEST								
No	**Component of using e-FFPP for data and document management system**	**The effectiveness of using e-FFPP for data and document management system.**		**Level of Agreement**				
				Strongly Disagree	**Disagree**	**Slightly Agree**	**Agree**	**Strongly Agree**
				1	**2**	**3**	**4**	**5**
1	Efficient data and document	a)	e-FFPP can efficiently manage data	1 2.3%	3 6.8%	7 15.9%	13 29.5%	20 45.5%

	management system.		and document in a short time.					
		b)	The e-FFPP provides an easy way to filter and preview data and document management.	0 0%	3 6.8%	4 9.1%	18 40.9%	19 43.2%
		c)	e-FFPP is efficient platform to manage data and document for Packages to the Affected Fisherman.	1 2.3%	4 9.1%	7 15.9%	12 27.3%	20 45.5%
		d)	e-FFPP can minimize defects in data and document management.	1 2.3%	2 4.5%	11 25%	10 22.7%	20 45.5%
2	Faster Filter and Preview Platform	a)	e-FFPP allows for faster filtering and retrieval of document.	1 2.3%	5 11.4%	5 11.4%	13 29.5%	20 45.5%
		b)	e-FFPP is easy and not complex in the document filling process.	2 4.5%	2 4.5%	3 6.8%	11 25%	26 59.1%
		c)	e-FFPP does not cause delays in the submission of document.	0 0%	4 9.1%	5 11.4%	12 27.3%	23 52.3%
		d)	e-FFPP is fast and easy to preview required files immediately.	0 0%	3 6.8%	4 9.1%	18 40.9%	19 43.2%

3	Faster Filter and Preview Platform	a)	e-FFPP is not a main problem causing pending and delays in social aids releasing to affected fishermen due to the Silicon Island project.	0 0%	5 11.4%	3 6.8%	14 31.8%	22 50%
		b)	e-FFPP, as a digital platform, consistently aligns with expectations for document and data management and does not contribute to delayed social aid disbursement.	1 2.3%	4 9.1%	3 6.8%	11 25%	25 56.8%
		c)	e-FFPP allows enough time to manage data and document for packages to the affected fishermen.	1 2.3%	4 9.1%	2 4.5%	11 25%	26 59.1%
4	User Friendly	a)	e-FFPP is easy to use and convenient for users.	2 4.5%	2 4.5%	4 9.1%	9 20.5%	27 61.4%
		b)	e-FFPP allows users to easily grasp data and document with proper pop-up features preview	2 4.5%	3 6.8%	3 6.8%	12 27.3%	24 54.5%

	before download.					
c)	e-FFPP is easily accessible for urgent requests to search for required data.	0 0%	3 6.8%	5 11.4%	12 27.3%	24 54.5%

4.4.3 Data Analysis

Statistical Package for the Social Sciences, or SPSS, is an acronym used by a broad spectrum of academics to analyse complicated statistical data. SPSS will be used in this study to analyse the data. the careful use of logical and statistical techniques for justification, proof, and condensation. Data has to be assessed and summarized. Data analysis is a tool used by researchers to distil data into a narrative and assess it from many angles. Massive amounts of data may be divided into smaller, more manageable chunks (parts) with the help of data analysis.

4.4.4 Reliability Test

Four questionnaire categories were created by the researcher in order to evaluate the efficacy of e-FFPP. Furthermore, the replies to the questions ranged from "Strongly disagree" to "Strongly agree," using a 5-point Likert scale. The Cronbach alpha test was used to ascertain if the questionnaire could "r reliably" assess the latent variable, such as the efficacy of e-FFPP. A reliability value of 0.940 is deemed satisfactory. As a consequence, the questionnaire is deemed Excellent if the reliability result is more than 0.9. Table 4.18 and 4.19 show the interpretation of Cronbach’s Alpha value.

Table 4.18 Range of reliability and its coefficient of Cronbach's Alpha

No	Coefficient of Cronbach's Alpha	Reliability Level
1	> 0.90	Excellent
2	0.80 – 0.89	Good
3	0.70 – 0.79	Acceptable

4	0.60 – 0.69	Questionable
5	0.50 – 0.59	Poor
6	< 0.50	Unacceptable

Table 4.19: Reliability Test for Post-Test Questionnaire

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.963	.964	14

4.4.5 Frequency Analysis

Not just in social measurement research but also in many other scientific fields, frequency analysis is a general method of analysis. In addition, it is a subfield of statistics that examines frequency and evaluates measures like central tendency, dispersion, percentiles, and so on. To find the analysis frequency date, use the Excel Solution. The outcome is displayed in Table 4.20 below.

Table 4.20 Percentage of the respondents agree and disagree with e-FFPP.

e-FFPP	**Level of agreement**				
The effectiveness component of using e-FFPP for data and document management system.	**Strongly Disagree**	**Disagree**	**Slightly Agree**	**Agree**	**Strongly Agree**
Efficient data and document management system.	3.43%	7.38%	16.48%	30.10%	44.5%
Faster Filter and Preview Platform	5.68%	9.1%	13.65%	30.68%	50.03%
Efficient Social Aids release to affected Fisherman	5.33%	8.33%	6.03%	27.27%	55.30%
User Friendly	5.27%	7.57%	56.80%	25.03%	56.80%

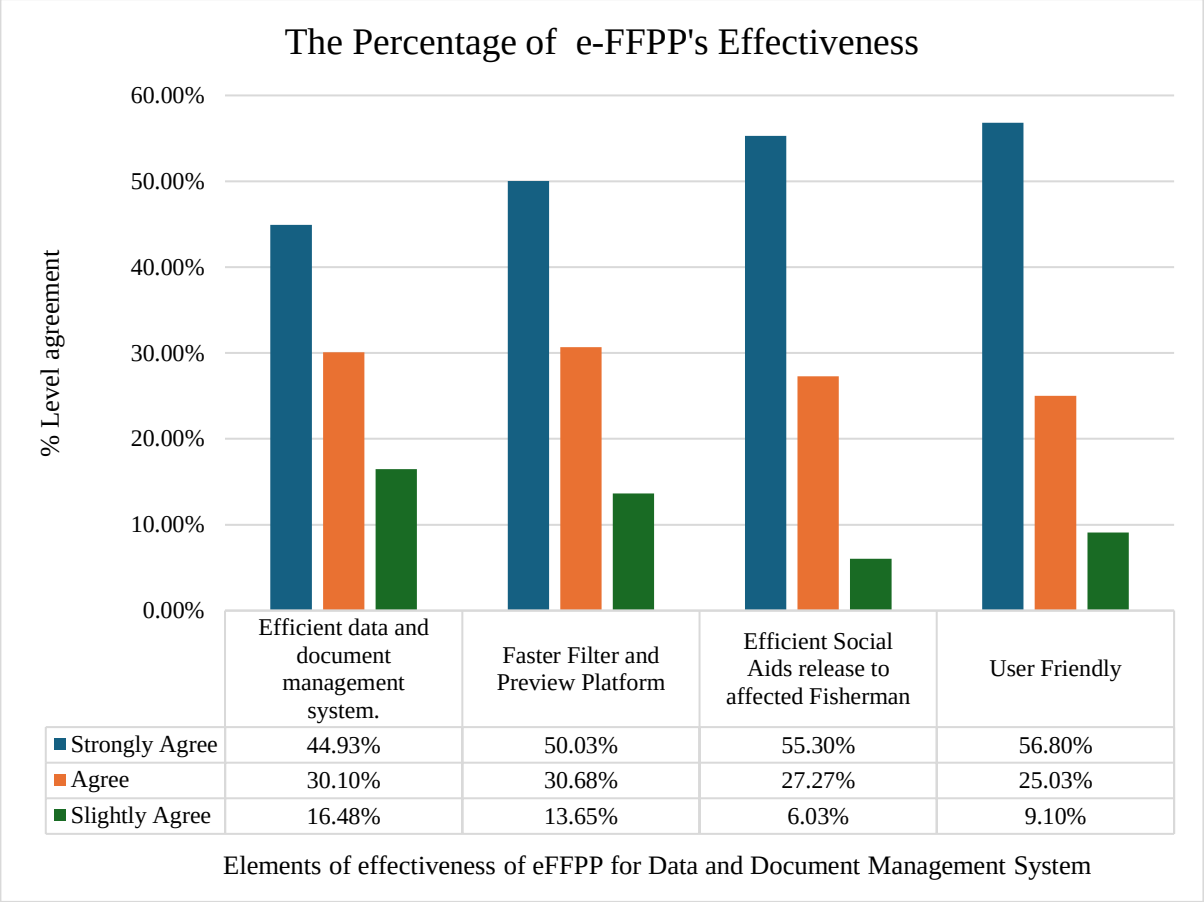


Figure 4.7 show the effectiveness of e-FFPP system

4.4.6 Descriptive Analysis

The respondent's findings about the mean for the e FFPP elements are displayed in Table 4.21. The e-FFPP for the data and document management system has four constraint components. Version 27 of the SPSS software was used to create the data.

Table 4.21 Mean for elements of e-FFPP.

	N	Mean		Std.	Variance
	Statistic	Statistic	Std. Error	Deviation	Statistic
Efficient data and document management system.	44	4.090	0.15868	1.05253	1.108
	44	4.2045	0.13239	0.87815	0.771
	44	4.0455	0.16564	1.09872	1.207
	44	4.0455	0.15913	1.05554	1.114
Faster Filter and Preview Platform	44	4.0455	0.16880	1.11969	1.254
	44	4.2955	0.16444	1.09075	1.190

	44	4.2273	0.14851	0.98509	0.970
	44	4.2045	0.13239	0.87815	0.771
Efficient Social Aids release to affected Fisherman	44	4.2045	0.15103	1.00185	1.004
	44	4.2500	0.16297	1.08102	1.169
	44	4.2955	0.16119	1.06922	1.143
User Friendly	44	4.2955	0.16762	1.11187	1.236
	44	4.2045	0.17074	1.13259	1.283
	44	4.2955	0.14014	0.92960	0.864

The average mean, which is displayed in Table 4.22 below, was found to be more than 3.5 for each of the e-FFPP system's components, indicating a high level of efficacy for the electronic platform.

Table 4.22 Display the e-FFPP element average mean.

No	The effectiveness elements of using e-FFPP for data and document management system.	Mean	Average Mean	Average Mean (%)
1	**Efficient data and document management system.**	4.0909	4.0966	24.38
		4.2045		
		4.0455		
		4.0455		
2	**Faster Filter and Preview Platform**	4.0455	4.1932	24.95
		4.2955		
		4.2273		
		4.2045		
3	**Efficient Social Aids release to affected Fisherman**	4.2045	4.25	25.29
		4.2500		
		4.2955		
4	**User Friendly**	4.2955	4.2652	25.38
		4.2045		
		4.2955		
	Total Average	**4.1932**	**16.8050**	**100**

Based on the data shown in Table 4.22 and Figure 4.8 below, it is evident that higher average mean rates need the adoption of an electronic Faster Filter and Preview Platform for user-friendly elements with average mean values of 4.265. Second, the impacted fishermen's element received effective social help with an average mean of 4.25. Third, quicker filter and preview platform element with 4.193 average mean. The last component of the effective data and document management system has an average

mean of 4.097. The interpretation relies on the Table 4.23 below and the outcomes summary like Table 4.24 below.

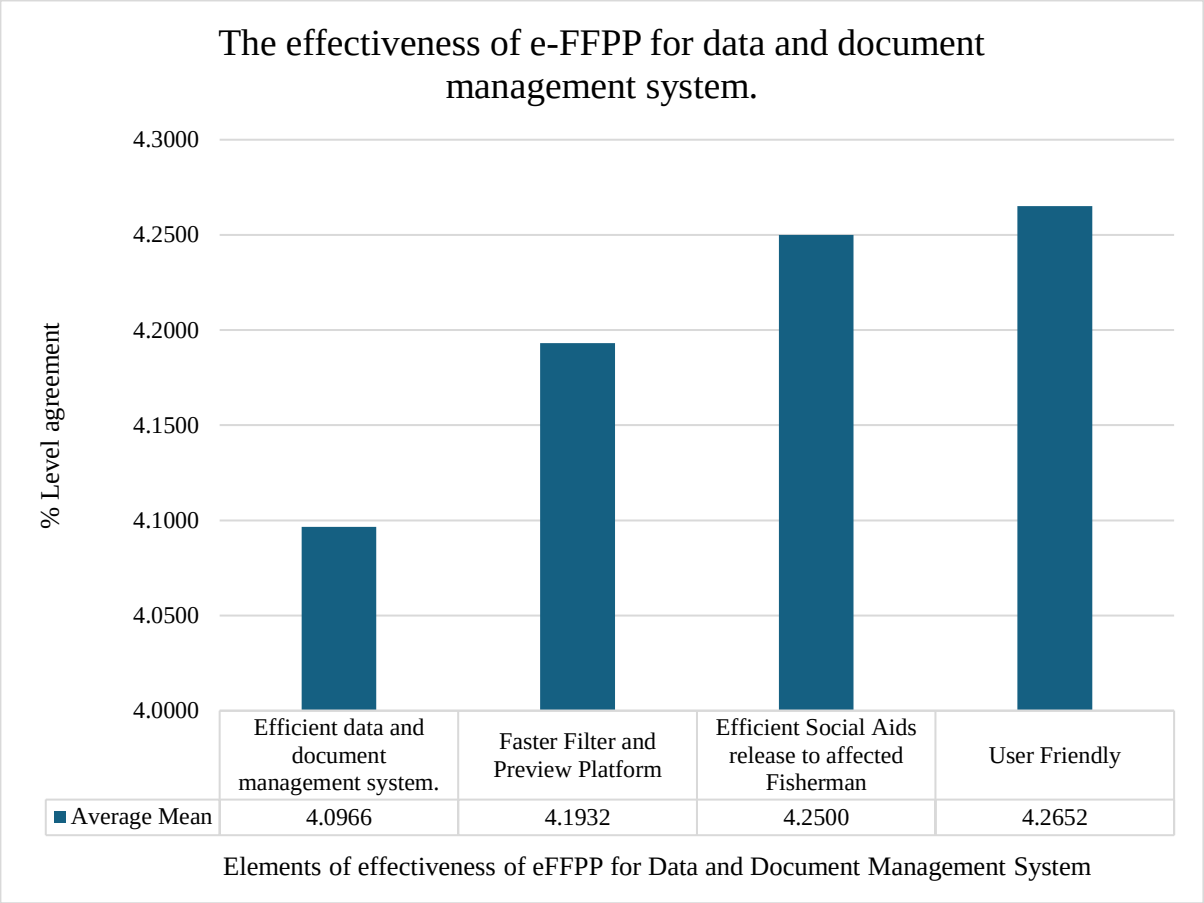


Figure 4.8 Average mean of elements for e-FFPP

Table 4.23 Mean range and interpretation of usability.

No	Mean Range	Interpretation
1	4.51 – 5.00	Very High
2	3.51 – 4.50	High
3	2.51 – 3.50	Medium
4	1.51 – 2.50	Low
5	1.00 – 1.50	Very Low

Table 4.24 Average element mean for e-FFPP system interpretation

Variables	Mean	Interpretation
Efficient data and document management system.	4.0996	High
Faster Filter and Preview Platform	4.1932	High
Efficient Social Aids release to affected Fisherman	4.2500	High
User Friendly	4.2652	High

4.5 PAIRED SAMPLE STATISTICS

Paired sample statistics is to test the effectiveness of e-FFPP and compare to the existing method. The electronic method in the electronic Faster Filter and Preview Platform for data and document management system (e-FFPP) resulted as Table 4.25 and Figure 4.9 below.

Table 4.25 Paired sample statistics.

	Paired sample statistics	
	Average Mean	
Effectiveness Elements	**Existing Method**	**e-FFPP**
Efficient data and document management system.	1.6023	4.0996
Faster Filter and Preview Platform	1.4489	4.1932
Efficient Social Aids release to affected Fisherman	1.6894	4.2500
User Friendly	1.447	4.2652

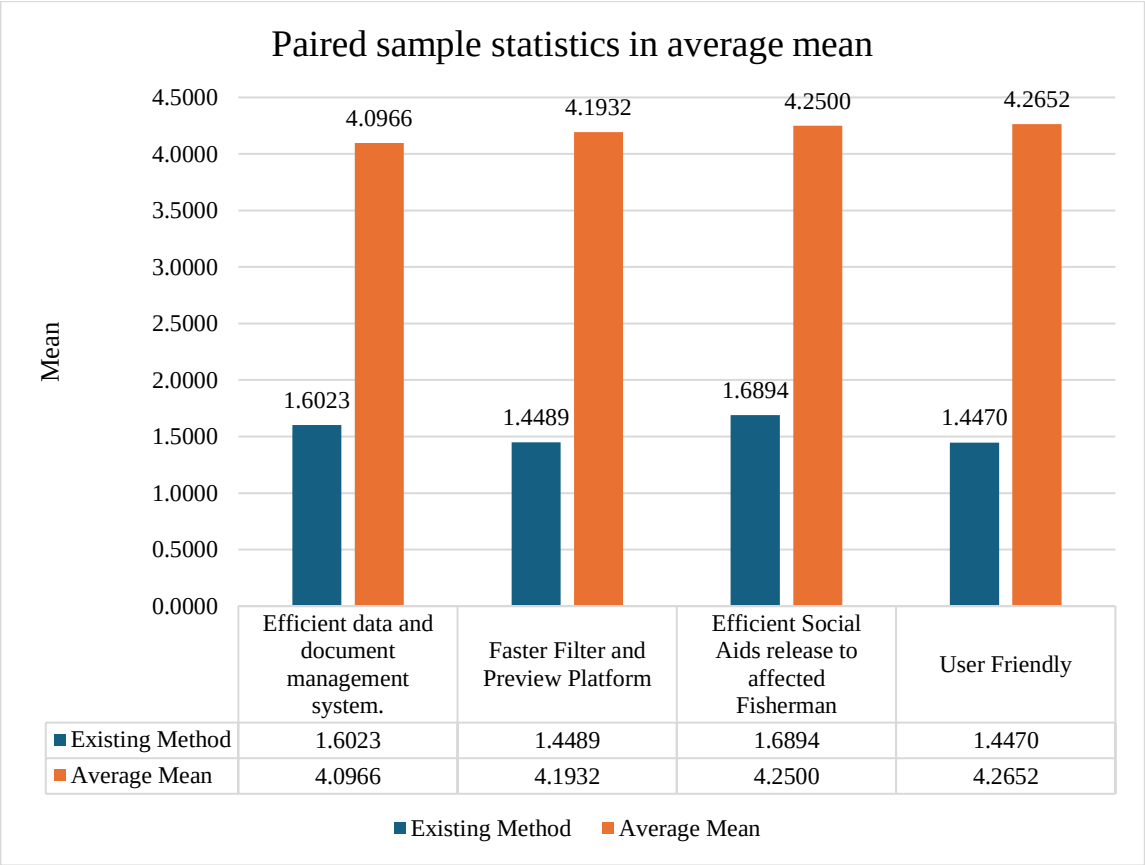


Figure 4.9 The average mean value of existing method and e-FFPP.

4.5.1 Paired Sample T-Test

To evaluate the effectiveness of e-FFPP in the project, a paired sample t-test was conducted. As shown in Table 4.25, respondents preferred using e-FFPP. The means for all variables measured with e-FFPP were significantly higher in mean (average mean) which is the efficient data and document management system element (Mean = 4.097), faster filter and preview platform (Mean = 4.193), efficient social aids release to affected fishermen (Mean = 4.25), and user-friendly platform (Mean = 4.265), compared to the existing method: efficient data and document management system (Mean = 1.602), faster filter and preview platform (Mean = 1.449), efficient social aids release to affected fishermen (Mean = 1.689), and user-friendly element (Mean = 1.447).

The paired sample t-test revealed a significant difference for all measured variables as shown in table 4.26 below. For efficient data and document management system, $t = 13.2985$ and $p < .00001$. For faster filter and preview platform, $t = 14.612$ and $p < .00001$. For efficient social aids release to affected fishermen, $t = 11.88$ and $p < .00001$. For user-friendly platform, $t = 13.7553$ and $p < .00001$. These results are significant at $p < .05$, indicating that e-FFPP was significantly easier to use and more efficient compared to the existing method.

Table 4.26 Paired Sample T-Test

Paired elements to test the effectiveness	**Paired Different** Average Mean	**t**	**Significant (Two tailed)**
Efficient data and document management system.	2.4943	13.2985	<0.001
Faster Filter and Preview Platform	2.7443	14.612	<0.001
Efficient Social Aids release to affected Fisherman	2.5606	11.88	<0.001
User Friendly	2.8182	13.7553	<0.001

4.6 Summary

This section focused on identifying the constraints of using the existing platform for data and document management systems, particularly within the context of aiding affected fishermen. Various data collection methods were employed, including demographic data and respondent perspectives, to analyse these constraints comprehensively.

The analysis revealed several key findings. The reliability test, frequency analysis, and descriptive tests were conducted using SPSS software to ensure robust data analysis. Results indicated a high level of dissatisfaction with the current methods, underscoring the need for a more efficient system.

The e-FFPP (Electronic Faster Filter and Preview Platform) was evaluated for its effectiveness in managing data and document. The system's components were found to be significantly more effective than existing methods, with average mean values indicating high efficacy across various elements such as user-friendliness, efficient data management, and timely social aid distribution.

The paired sample statistics compared the existing methods with the e-FFPP, showing substantial improvements in all assessed areas when using the new electronic platform. The results demonstrated that the e-FFPP provides a more efficient, reliable, and user-friendly solution for managing data and document, particularly benefiting the affected fishermen by ensuring quicker and more effective social aid release.

In conclusion, the findings of Chapter 4 highlight the significant advantages of implementing the e-FFPP over existing methods, providing a compelling case for its adoption to enhance data and document management systems.

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1 INTRODUCTION

This chapter provides a comprehensive closure to the thesis, summarizing the key findings, drawing conclusions, and offering recommendations based on the study. The primary aim of this study was to develop the e-Faster Filter and Preview Platform (e-FFPP) for systematic data and document management, focusing on enhancing the efficiency of social aid distribution to the affected fishermen due to the Silicon Island Project. The specific objectives were to identify constraints in the existing platforms, design and develop the e-FFPP using Adalo software and test its effectiveness. To achieve these objectives, a structured methodology was employed, integrating surveys and quantitative analysis using tools like SPSS and the Technology Acceptance Model (TAM) to gauge user perceptions. This approach ensured a comprehensive assessment and development of a robust platform tailored to the needs of Silicon Island Development Sdn Bhd (SIDSB).

5.2 CONCLUSION

The study identified significant limitations in the current document management system at SIDSB, which hindered effective and timely distribution of social aid packages to fishermen impacted by the Penang South Island project. Key issues included inefficiencies in data handling, slow processing times, and a lack of user-friendly features. By leveraging Adalo software, the e-FFPP was designed and developed to address these constraints, incorporating a user-friendly interface, faster data processing capabilities, and an alert system to enhance efficiency and

responsiveness. Comparative analysis demonstrated that e-FFPP significantly outperforms the existing platform in terms of efficiency, reliability, and user satisfaction. The implementation of e-FFPP is expected to streamline operations, reduce delays, and enhance the overall responsiveness of the Social Impact Management Plan (SIMP) within the Penang South Island (PSI) project.

Overall, the e-FFPP offers a robust solution that aligns with the goals of SIMP, providing a more effective means of delivering social aids and supporting SIDSB's commitment to mitigating the social impacts of large-scale development projects on local communities.

5.3 RECOMMENDATIONS

Based on the findings of this study, it is recommended that SIDSB fully integrate the e-FFPP into their operational workflow to maximize its benefits. This transition will enhance the efficiency of data and document management, ensuring quicker and more reliable distribution of social aids to affected communities. To facilitate a smooth transition to the new system, SIDSB should conduct comprehensive training programs for staff and stakeholders, focusing on familiarizing users with the features of e-FFPP to ensure they can effectively utilize the platform. Post-implementation, it is crucial to establish a continuous monitoring system to assess the performance of e-FFPP. Regular feedback from users should be collected to identify any issues and areas for improvement, ensuring the platform remains effective and responsive to user needs. As SIDSB expands its operations, the scalability of e-FFPP should be considered, with periodic reviews and updates to accommodate increased data volumes and additional functionalities. Beyond the immediate scope of social aid distribution, the principles and technologies underlying e-FFPP can be adapted for broader applications within SIDSB and other organizations facing similar challenges in data and document management. By implementing these recommendations, SIDSB can significantly improve its document management processes, enhancing the efficiency and effectiveness of its social impact initiatives and overall operational performance.

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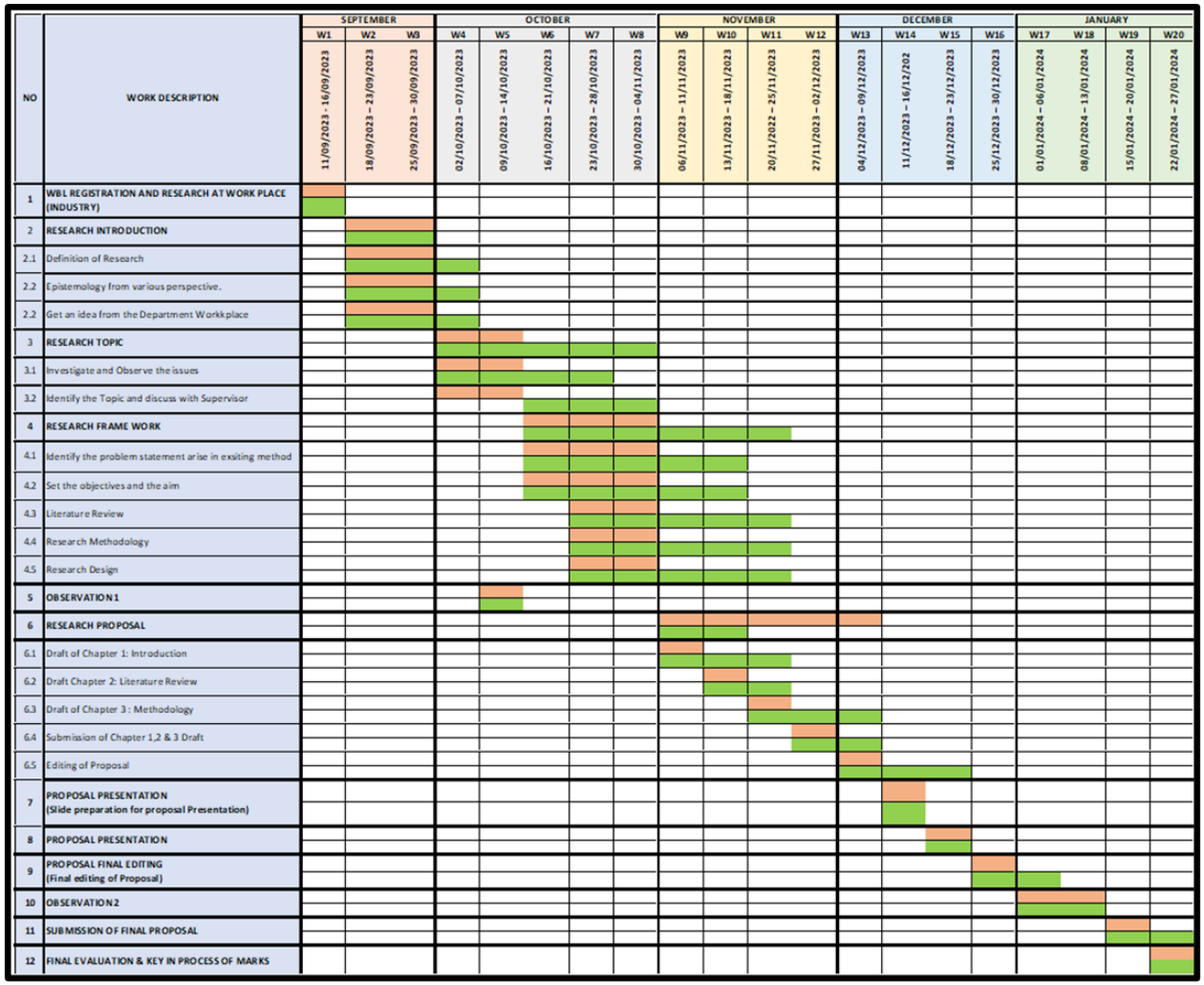
APPENDIX

Appendix A: Semester 7's Gantt chart



Appendix B: Semester 8' Gantt chart

NO	WORK DESCRIPTION	FEBRUARY			MARCH					APRIL				MAY				JUNE			
		W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20
		29/01/2024 – 03/02/2024	05/02/2024 – 10/02/2024	12/02/2024 – 17/02/2024	19/02/2024 – 24/02/2024	26/02/2024 – 02/03/2024	04/03/2024 – 09/03/2024	11/03/2024 – 16/03/2024	18/03/2024 – 23/03/2024	25/03/2024 – 30/03/2024	01/04/2024 – 06/04/2024	08/04/2024 – 13/04/2024	15/04/2024 – 20/04/2024	22/04/2024 – 27/04/2024	29/04/2024 – 04/05/2024	06/05/2024 – 11/05/2024	13/05/2024 – 18/05/2024	20/05/2024 – 25/05/2024	27/05/2024 – 01/06/2024	03/06/2024 – 08/06/2024	10/06/2024 – 15/06/2024
1	**WBL REGISTRATION AND RESEARCH AT WORK PLACE (INDUSTRY)**																				
1.1	Submission Appendix B1 and B2 to PUO																				
1.2	Preparation of Data Collection.																				
2	**PREPARATION FOR DATA COLLECTION**																				
2.1	Resources identification and selection.																				
3	**PROJECT IMPLEMENTATION AND DEVELOPMENT**																				
3.1	Data Collection																				
3.2	Product Development																				
3.3	Test run the project																				
4	**RESULTS AND ANALYSIS**																				
4.1	Interpret the results																				
4.2	State and summarize all the results																				
5	**REPORT WRITING**																				
5.1	Continuation on the writing of final report.																				
5.2	Preparation For Final Year Project Dissertation																				
5.3	Presentation at industry																				
6	**PREPARATION FOR FINAL YEAR PROJECT DISSERTATION AND PRESENTATION AT PUO**																				
8	**FYP PRESENTATION**																				
9	**PRESENTATION WITH INSUDTRIAL PANELS**																				
10	**FINAL REPORT SUBMISSION**																				

Appendix C: Pre-Questionnaire

Point of view related to existing method for data and document management system at Silicon Island Development Sdn Bhd.

Dear respondent,

As part of my Final Year Project for the Bachelor of Civil Engineering Technology (BCT) at Politeknik Ungku Omar (PUO) in Ipoh, Perak, I am conducting a pre-test survey to evaluate the effectiveness of the exisiting method for data and document management. My name is Muhd. Khidir Irham Bin Mohd Khairul (01BCT21F3028).

The objective of this project is to identify constraint of the existing method in data and document management system..

This survey will take only a few minutes of your time. Please be assured that all information provided will be treated as strictly confidential and used solely for statistical study purposes.

Your participation is crucial to the success of my research, and I would be extremely grateful if you could assist by completing this questionnaire. Your responses will contribute valuable insights to researchers, professionals, and policymakers in the field.

Thank you in advance for your time and assistance.

Best regards,

Muhd. Khidir Irham Bin Mohd Khairul

Politeknik Ungku Omar's degree student

SECTION A: DEMOGRAPHY

1. Gender *

- [ ] Male
- [ ] Female

2. Age *

- [ ] Under 18 years old
- [ ] 18 - 24 years old
- [ ] 25 - 34 years old
- [ ] 35 - 44 years old
- [ ] 45 - 54 years old
- [ ] 55 - 64 years old
- [ ] 65 years or older

3. Position *

Mark only one box.

- [ ] Head of Department
- [ ] Manager
- [ ] Assistant manager
- [ ] Officer
- [ ] Engineer
- [ ] Executive
- [ ] Supervisor
- [ ] Quantity Surveyor
- [ ] Project Manager
- [ ] Other: _____

4. Work Experience *

mark only one box.

- [ ] < 2 years
- [ ] 2 - 5 years
- [ ] 6 - 10 years
- [ ] > 10 years

SECTION B: POST TEST

Question in the below constraint elements of the existing method for data and document management system.

1. Efficient data and document management system.

Description (optional)

a. e-FFPP can efficiently manage data and documents in a short time. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

b. The e-FFPP provides an easy way to filter and preview data and document management. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

c. e-FFPP is efficient platform to manage data and documents for Packages to the Affected Fisherman. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

d. e-FFPP can minimize defects in data and document management. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

2. Faster Filter and Preview Platform

Description (optional)

a. e-FFPP allows for faster filtering and retrieval of documents. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

b. e-FFPP is easy and not complex in the document filling process. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

c. e-FFPP does not cause delays in the submission of documents. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

d. e-FFPP is fast and easy to preview required files immediately. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

3. Efficient Social Aids release to affected Fisherman

Description (optional)

a. e-FFPP is not a main problem causing pending and delays in social aids releasing to affected fishermen due to the Silicon Island project. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

b. e-FFPP, as a digital platform, consistently aligns with expectations for document and data management and does not contribute to delayed social aid disbursement. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

c. e-FFPP allows enough time to manage data and documents for packages to the affected fishermen. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

4. User Friendly

Description (optional)

a. e-FFPP is easy to use and convenient for users. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

b. e-FFPP allows users to easily grasp data and documents with proper pop-up features preview before download. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

c. e-FFPP is easily accessible for urgent requests to search for required data. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

Appendix D: Post-Questionnaire

Point of view related to existing method for data and document management system at Silicon Island Development Sdn Bhd.

Dear respondent,

As part of my Final Year Project for the Bachelor of Civil Engineering Technology (BCT) at Politeknik Ungku Omar (PUO) in Ipoh, Perak, I am conducting a pre-test survey to evaluate the effectiveness of the electronic Faster Filter and Preview Platform (e-FFPP) for data and document management. My name is Muhd. Khidir Irham Bin Mohd Khairul (01BCT21F3028).

The objective of this project is to test the effectiveness of e-FFPP as a data and document management system.

This survey will take only a few minutes of your time. Please be assured that all information provided will be treated as strictly confidential and used solely for statistical study purposes.

Your participation is crucial to the success of my research, and I would be extremely grateful if you could assist by completing this questionnaire. Your responses will contribute valuable insights to researchers, professionals, and policymakers in the field.

Thank you in advance for your time and assistance.

Best regards,

Muhd. Khidir Irham Bin Mohd Khairul

Politeknik Ungku Omar's degree student

SECTION A: DEMOGRAPHY

1. Gender *

- [ ] Male
- [ ] Female

2. Age *

- [ ] Under 18 years old
- [ ] 18 - 24 years old
- [ ] 25 - 34 years old
- [ ] 35 - 44 years old
- [ ] 45 - 54 years old
- [ ] 55 - 64 years old
- [ ] 65 years or older

3. Position *

Mark only one box.

- [ ] Head of Department
- [ ] Manager
- [ ] Assistant manager
- [ ] Officer
- [ ] Engineer
- [ ] Executive
- [ ] Supervisor
- [ ] Quantity Surveyor
- [ ] Project Manager
- [ ] Other: _____

4. Work Experience *

mark only one box.

- [ ] < 2 years
- [ ] 2 - 5 years
- [ ] 6 - 10 years
- [ ] > 10 years

SECTION B: POST TEST

Question in the below constraint elements of the e-Faster Filter and Preview Platform of data and document management system.

1. Efficient data and document management system.

Description (optional)

a. e-FFPP can efficiently manage data and documents in a short time. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

b. The e-FFPP provides an easy way to filter and preview data and document management. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

c. e-FFPP is efficient platform to manage data and documents for Packages to the Affected Fisherman. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

d. e-FFPP can minimize defects in data and document management. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

2. Faster Filter and Preview Platform

Description (optional)

a. e-FFPP allows for faster filtering and retrieval of documents. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

b. e-FFPP is easy and not complex in the document filling process. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

c. e-FFPP does not cause delays in the submission of documents. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

d. e-FFPP is fast and easy to preview required files immediately. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

3. Efficient Social Aids release to affected Fisherman

Description (optional)

a. e-FFPP is not a main problem causing pending and delays in social aids releasing to affected fishermen due to the Silicon Island project. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

b. e-FFPP, as a digital platform, consistently aligns with expectations for document and data management and does not contribute to delayed social aid disbursement. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

c. e-FFPP allows enough time to manage data and documents for packages to the affected fishermen. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

4. User Friendly

Description (optional)

a. e-FFPP is easy to use and convenient for users. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

b. e-FFPP allows users to easily grasp data and documents with proper pop-up features preview before download. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

c. e-FFPP is easily accessible for urgent requests to search for required data. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

Appendix E: Post-Test Result Data Collection for level of Agreement

SECTION B: POST-TEST

No	Constraints element of using e-FFPP for data and document management system	Issues related to the existing method in data and document management system.	Level of Agreement				
			Strongly Disagree	Disagree	Slightly Agree	Agree	Strongly Agree
			1	2	3	4	5
1	Efficient data and document management system.	a) e-FFPP can efficiently manage data and document in a short time.	1	3	7	13	20
		b) The e-FFPP provides an easy way to filter and preview data and document management.	0	3	4	18	19
		c) e-FFPP is efficient platform to manage data and document for Packages to the Affected Fisherman.	1	4	7	12	20
		d) e-FFPP can minimize defects in data and document management.	1	2	11	10	20

2	Faster Filter and Preview Platform	a)	e-FFPP allows for faster filtering and retrieval of document.	1	5	5	13	20
		b)	e-FFPP is easy and not complex in the document filling process.	2	2	3	11	26
		c)	e-FFPP does not cause delays in the submission of document.	0	4	5	12	23
		d)	e-FFPP is fast and easy to preview required files immediately.	0	3	4	18	19
3	Faster Filter and Preview Platform	a)	e-FFPP is not a main problem causing pending and delays in social aids releasing to affected fishermen due to the Silicon Island project.	0	5	3	14	22
		b)	e-FFPP, as a digital platform, consistently aligns with expectations for document and data management and does not	1	4	3	11	25

			contribute to delayed social aid disbursement.					
		c)	e-FFPP allows enough time to manage data and document for packages to the affected fishermen.	1	4	2	11	26
4	User Friendly	a)	e-FFPP is easy to use and convenient for users.	2	2	4	9	27
		b)	e-FFPP allows users to easily grasp data and documents with proper pop-up features preview before download.	2	3	3	12	24
		c)	e-FFPP is easily accessible for urgent requests to search for required data.	0	3	5	12	24