Enhancing Village Management and Governance Through Mobile Learning Initiatives

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Abstract

The Institute for Rural Advancement (INFRA), under the Ministry of Rural and Regional Development (KKDW), conducted a comprehensive outcome assessment of its mobile learning programme. This evaluation aligned with the TVET principle of practical, hands-on training, emphasizing real-world applications crucial for rural management. The study aimed to assess the programme's impact on enhancing participants' skills and knowledge in village management, including governance, financial management, and file system management. Quantitative survey was used to collect data from 219 trained participants. The results showed significant improvements in village management practices, with high effectiveness ratings across all dimensions. File management skills, demonstrated a strong acceptance of organized filing systems and improved administrative capacity. The findings also revealed notable improvements in village leadership, attributed to the programme's focus on community engagement and practical field experiences. By aligning its mobile learning programme with TVET's practical training pillar, INFRA has established itself as a leader in integrating TVET principles into rural management. This research offers valuable insights for policymakers and practitioners in designing effective rural development initiatives and enhancing village governance through targeted mobile learning programmes.

1. Introduction

The Institute for Rural Advancement (INFRA) is a rural training institute under the Ministry of Rural and Regional Development (KKDW), operating since 1996 which was formerly known as SEDAR Institute. INFRA is a pivotal entity in the realm of rural leadership training and community empowerment. INFRA's mandate encompasses the execution of comprehensive rural leadership training programmes, empowerment initiatives for rural communities, and conducting researches on village and community development programmes that have been implemented. In 2023, INFRA participated in the assessment study of the effectiveness of a mobile learning programme, which provided hands-on training on village management and governance. The mandate for this programme's implementation aligns with the Cabinet's decision dated 27 June 2018, to empower village leadership to be more capable and proactive in advancing villages and rural communities.

The Project is an extension of the Induction Course on Village Community Leadership. Unlike the broader induction course, this programme represents a strategic enhancement of INFRA's training efforts by concentrating on a smaller, more targeted participant group. To address the specific needs of these participants, INFRA developed a specialized module focusing on village leadership skills, including organizational management and administrative capabilities. This programme started in 2016 provides direct, hands-on guidance to participants, aiming to optimize their organizational management and administration skills. The ultimate goal is to foster significant improvements in the development and well-being of local communities, thereby contributing to the empowerment of rural residents.

For this study, 219 respondents who participated in the 2023 programme were selected. The primary objective was to assess the effectiveness of the Mobile Learning Hands-on Village Management and Governance Programme and evaluate the knowledge and skills acquired by the participants. The programme also aimed to enhance the efficiency and effectiveness of village institution management, encourage the optimization of financial resources, and establish systematic and organized file storage systems.

1.1 Technology and Innovation in Education

Abdul Rashid et al. (2021) highlight the Malaysian government's efforts to transform rural areas into economic hubs, aiming to improve rural livelihoods and reduce the urban-rural quality-of-life gap. The study outlines the development of the Framework of Modern Rural Development (FMRD), which integrates national policies with smart technologies and ICT practices. This framework was formulated through a focused literature review and national policy analysis, followed by an expert survey to validate key assessment elements. The FMRD emphasizes a holistic approach to rural development, aiming to enhance liveability, resilience, and smartness in Malaysian rural areas.

Choudhary et al. (2022) analyze the impact of national and regional Digital Literacy Training Programs (DLTPs) initiated by governments and private sectors to address digital inequalities. Their systematic review identifies barriers affecting the effectiveness of DLTPs at different levels, categorizing them into administrative, training, and individual levels. The review highlights the importance of policy planning and administrative design, alongside infrastructure and pedagogy, to ensure the sustainability of a digitalized society. This emphasis on digital literacy is crucial in bridging the digital divide, particularly in Technical Vocational Education and Training (TVET).

Criollo-C et al. (2021) underscore the contemporary demand for more effective learning models that empower students to take active roles in their education. They highlight the transformative impact of technology on instructional delivery and information accessibility, marking a departure from traditional memorization-focused education towards skills like reading, sharing, listening, and practical application. Despite the challenges in m-learning implementation, the authors advocate for its integral role in education, recognizing its potential to engage students in personalized learning experiences and broader knowledge acquisition.

Grant (2019) provides a critical examination of mobile learning principles, defining it as the integration of mobile computing devices in education. He identifies four categories defining mobile learning: its relation to distance education and e-learning, technological exploitation, mediation in learning processes, and the nomadic nature of learners and learning environments. Grant's framework of seven design characteristics for mobile learning environments aims to guide future research and instructional design, enhancing clarity in defining mobile learning environments and identifying attributes that contribute to successful mobile learning experiences.

1.2 Challenges and Solutions in TVET and Rural Development

Focusing on the TVET sector, recent studies by Lutayaa et al. (2023) have highlighted significant challenges in addressing skills shortages in rural South Africa. Key issues include insufficiently trained lecturers, poorly designed and fragmented curricula, weak institutional structures, inadequate infrastructure, and deficient funding norms. These problems are exacerbated by ineffective policy frameworks, lack of stakeholder support, and weak partnerships with TVET institutions.

Positive user experience, driven by interface, content, and interaction design, enhances learners' engagement in learning, as noted by Redzuan et al. (2017). This parallels mobile teaching and learning initiatives by emphasizing the importance of a well-designed educational environment to improve user engagement and learning outcomes. Karim et al. (2016) further highlight the importance of enhancing people's quality of life, advocating for the integration of technology to improve well-being, which aligns with the benefits seen in mobile teaching and learning initiatives for village governance.

The past literature underscores the critical role of innovative educational programs and frameworks in promoting rural development and governance. Aligning with these findings, the current project offers a targeted, technology-driven approach to village leadership training. By addressing challenges identified in prior research, such as the need for effective digital literacy and mobile learning integration, this programme aims to enhance village governance and bridge the urban-rural development gap. The insights gained from this review support the

relevance and potential impact of the programme, suggesting that it could serve as a model for similar initiatives in other rural contexts. This approach contributes to TVET by demonstrating how technology and innovative training methods can be leveraged to address specific rural challenges, ultimately improving educational outcomes and community development.

2. Methodology

The research employed a quantitative approach to evaluate the effectiveness of the Mobile Learning Hands-on Village Management and Governance Programme. The study targeted 219 participants who had undergone training as part of the programme. The participants included village residents who hold positions related to village management (Chairperson, Secretary, or Member), have at least 1 year of experience in their current position, are aged 18 years or older, and are proficient in the language of the survey. Non-residents, individuals holding positions unrelated to village management, those with less than 1 year of experience, individuals under 18 years of age, and those not proficient in the survey's language are excluded.

A questionnaire was developed to capture demographic information and assess various aspects of village governance, providing a comprehensive understanding of the programme's impact. The questionnaire comprised four main constructs: Village Management and Governance, Financial and Accounting Management, File Management, and Module Effectiveness and Trainers' Delivery. Each construct contained five question items to assess participants' knowledge and skills comprehensively. A Likert scale, ranging from "Strongly Disagree" to "Strongly Agree," was employed to quantify responses, enabling statistical analysis of the participants' agreement levels with statements related to each construct.

A pilot test was conducted using a sample of 30 respondents to evaluate the reliability and validity of the questionnaire designed for the study. The results of the pilot test are presented in Table 1.

Table 1 *Cronbach's Alpha*

Effectiveness	Cronbach's Alpha
Skills on Village Management and Governance	0.95
Skills on Account and Financial Management	0.96
Skills on File Management Systems	0.97
Modules Effectiveness and Trainers Delivery	0.97
Public Perception on Village Institution Changes	0.94
Overall	0.99

Table 1 displays the Cronbach's alpha values for various dimensions of effectiveness, showcasing the internal consistency and reliability of the questionnaire used in this study. Specifically, the dimensions assessed include skills on village management and governance ($\alpha = 0.95$), account and financial management ($\alpha = 0.96$), file management systems ($\alpha = 0.97$), module effectiveness and trainer delivery ($\alpha = 0.97$), and public perception on village institution changes ($\alpha = 0.94$). The overall Cronbach's alpha value is exceptionally high at 0.99, indicating robust reliability across all measured dimensions (see Table 2).

The Cronbach's Alpha values indicate that the questionnaire has excellent reliability across all constructs. The high values across different constructs suggest that the items within each construct are highly consistent, making the questionnaire a reliable tool for measuring the intended outcomes. While the table primarily reflects reliability, the high Cronbach's Alpha values also indirectly support the validity of the questionnaire, as they suggest that the items are well-aligned with the constructs they intend to measure.

Subsequently, the questionnaire was distributed to survey participants via Google Form. The data collection process commenced with briefing sessions for respondents, during which an overview of the evaluation and its objectives was provided. This is crucial to ensure participants understood the significance of their input and how the collected data would be utilized. The sample size for this study was determined using the Krejcie and Morgan (1970) sample calculation method, ensuring that the sample accurately represents the population of 469 training participants from a total of 2,524 individuals across several states. The method calculated a required sample size of 210 respondents, based on a predetermined confidence level. Ethical considerations in this research include ensuring informed consent from all participants, and maintaining confidentiality and privacy of their data. Participation is voluntary, with participants having the right to withdraw at any time without consequences.

Descriptive analysis were then conducted to interpret the data, offering insights into participants' perceptions and experiences with the mobile learning program.

3. Results and Discussion

This section reports the result obtained from the survey. The survey has involved 219 respondents, with a male predominance of 62% and females constituting 38%. As shown in Table 2, the positions held by the respondents varied, with 42% serving as Chairpersons, 22% as Secretaries, and 36% as members of their respective village governance bodies. The duration of their service also varied, with a significant majority 75%, having served for less than 5 years, 18% for less than 10 years, and only 7% having served for more than 11 years. Regarding their occupation, 61% were self-employed, 12% worked in private sectors, 11% were pensioners, 3% were employed by the government, and 13% had other types of employment.

Table 2 *Skills in village management and governance*

Effectiveness	Agree (%)	Disagree (%)
The procedures for managing Village Development and Security Committee (VDSC) meetings are implemented before, during, and after the meetings	99.1	0.9
The meeting agenda is strictly followed during the execution of meetings	97.3	2.8
The VPAP assists the VDSC in planning village programmes	98.6	1.4
The division of zones in community mapping facilitates the VDSC in collecting resident data	98.6	1.4
The use of HOH cards streamlines the process of updating resident data	99.6	0.5
Mean agreement rate	98.64%	
Standard Deviation	0.85%	

Table 2 shows that the INFRA mobile learning programme demonstrates high effectiveness across all evaluated aspects. Analysis of the data reveals a mean agreement rate of 98.64%, with a strong central tendency towards high agreement (all items scoring above 97%) and a low standard deviation of 0.85%. These statistics indicate consistently positive responses from participants, suggesting that the programme has been highly successful in implementing various aspects of village management and governance, from conducting VDSC meetings to using tools for data collection and resident information management. The findings indicate that the implementation of structured management practices, strategic planning tools, systematic data collection methods, and digital administrative aids significantly enhances the capacity of rural communities. This aligns with Abdul Rashid et al. (2021), who emphasized the importance of structured governance practices in rural transformation initiatives in Malaysia. The high level of respondent agreement further suggests strong acceptance and perceived effectiveness of these initiatives, which are crucial for sustainable development and governance.

In the context of Technical and Vocational Education and Training (TVET), these findings have significant implications. TVET programs, like the INFRA mobile learning programme, require a holistic approach that integrates practical skills with management and governance knowledge. The high effectiveness demonstrated in this study suggests that similar mobile learning approaches could be beneficial in TVET contexts, particularly in developing administrative and managerial skills alongside technical competencies. Furthermore, the success of this mobile learning initiative in imparting village management and governance skills demonstrates the potential of such programs in addressing the challenges faced by TVET in rural areas, as identified by Lutayaa et al. (2023). By integrating mobile learning modules on management and governance into TVET curricula, institutions can better prepare students for leadership roles in their respective technical fields, thereby building the organizational capacity and skills necessary for sustainable community development in both rural and urban contexts.

Table 3 *Skills in account and financial management*

Effectiveness	Agree (%)	Disagree (%)
Financial transactions of the VDSC are systematically documented	98.6	1.4
The maintenance of financial records is integral to village management and governance	99.5	0.5
The VDSC inventory is methodically recorded	98.2	1.8

Proper storage is ensured for financial documents such as receipts and payment vouchers	97.7	2.3
Expenditure reports are formally presented during VDSC meetings	98.6	1.4
Mean Agreement Rate	98.52%	
Standard Deviation	0.68%	

The data from Table 3 on Skills in Account and Financial Management shows remarkably high and consistent agreement across all aspects, with a mean of 98.52% and a low standard deviation of 0.68%. This indicates that participants overwhelmingly agree on the effectiveness of financial management practices learned through the INFRA mobile learning programme. The central tendency strongly leans towards high agreement, with all items scoring above 97%. These statistics demonstrate the programme's success in imparting crucial financial management skills to village development and security committee (VDSC) members, contributing significantly to improved village governance. The findings underscore the critical role of structured financial management practices in enhancing the capacity of rural communities, aligning with Abdul Rashid et al. (2021), who emphasized the importance of financial literacy and structured governance practices in rural development frameworks. Effective financial management, including systematic recording of transactions, accurate financial records, and organized inventory management, contributes to increased transparency, accountability, and efficient resource management. These practices are consistent with the observations of Lutayaa et al. (2023), who argued that improved financial literacy and management are essential for the sustainable growth and empowerment of rural communities. Furthermore, the practice of presenting expenditure reports in meetings, as highlighted by the high agreement levels in the data, promotes collective oversight and informed decision-making.

In the context of Technical and Vocational Education and Training (TVET), these findings have significant implications. TVET programs often involve practical, hands-on training that requires efficient management of resources and information. The high level of agreement on financial management skills aligns with the need for TVET participants to develop strong financial acumen. Moreover, the success of this mobile learning initiative in imparting financial management skills demonstrates the potential of such programs in addressing the challenges faced by TVET in rural areas, as identified by Lutayaa et al. (2023). By integrating financial management modules into TVET curricula, institutions can better prepare students for the financial aspects of their future careers, thereby building the organizational capacity and skills necessary for sustainable community development and empowerment in both rural and urban contexts.

Table 4 *Skills in file management system*

Effectiveness	Agree (%)	Disagree (%)
The implementation of a filing system is crucial for achieving consistent and systematic administration	98.6	1.4
The use of a file coding system simplifies document classification	98.6	1.4
Recording file movements is essential to streamline the tracking process	98.6	1.4
Files are closed upon reaching a thickness of 4 cm or containing 100 attachments	97.3	2.7
Files serve as essential repositories for storing various information, data, financial records, and related documents	99.1	1.0
Mean Agreement Rate	98.44%	
Standard Deviation	0.67%	

Table 4 reveals high effectiveness in teaching file management skills through the INFRA mobile learning programme. With a mean agreement rate of 98.44% and a low standard deviation of 0.67%, the data demonstrates consistently strong agreement across all aspects. The central tendency is notably high, with all items scoring above 97% agreement, indicating uniform positive responses. These findings underscore that effective file management practices are crucial for enhancing the administrative capacity of rural communities. The respondent agreement indicates strong acceptance and perceived effectiveness of organized filing systems, simplified document classification, and meticulous tracking of file movements, all of which contribute to increased transparency, accountability, and efficiency. This aligns with the broader goals of structured administrative practices highlighted

by Abdul Rashid et al. (2021), who discussed the importance of robust governance frameworks in rural development. In the context of Technical and Vocational Education and Training (TVET), these findings have significant implications. TVET programs often involve practical, hands-on training that requires efficient management of resources and information. The practice of closing files at a manageable size and recognizing their essential function supports effective record-keeping and information management, which are vital skills in many vocational fields. Such practices are essential for maintaining organizational efficiency, as emphasized by Choudhary et al. (2022), who noted that clear and structured documentation processes are vital for effective governance and decision-making in rural communities and vocational settings.

Furthermore, the systematic approach to file management not only enhances administrative efficiency but also ensures orderly document handling and maintains accurate records. These skills are directly transferable to many TVET disciplines, such as business administration, information technology, and office management. By incorporating these file management practices into TVET curricula, institutions can better prepare students for the organizational demands of their future careers, thereby building the organizational capacity and skills necessary for sustainable community development and empowerment in both rural and urban contexts.

Table 5 *Modules and skills of trainer*

Effectiveness	Agree (%)	Disagree (%)
The trainer significantly aids participants	99.1	1.0
The trainer's explanations are articulate and succinct	98.6	1.4
The trainer demonstrates extensive experience and knowledge	99.1	1.0
The trainer's delivery is comprehensible	99.1	1.0
The trainer utilizes accessible instructional approaches	99.1	1.0
Mean Agreement Rate	99.00%	
Standard Deviation	0.22%	

Table 5 shows a mean agreement rate of 99.00% and a standard deviation of 0.22%, highlighting a strong and consistent positive response towards the trainers in the INFRA mobile learning program. The data demonstrates a strong central tendency, with agreement rates consistently between 98.6% and 99.1%, reflecting uniformly high evaluations of the trainers' skills and effectiveness. This reinforces the overall positive impact of the program. The findings indicate that effective trainer delivery significantly enhances the educational capacity of rural communities. The widespread agreement underscores the recognized effectiveness of trainers in disseminating knowledge. Clear and concise explanations, combined with the experience and expertise of trainers, cultivate an optimal learning environment that facilitates understanding and knowledge retention.

These findings align with Abdul Rashid et al. (2021), who emphasized the importance of skilled facilitators in the success of educational and governance programs in rural settings. The role of trainers is particularly critical in environments where access to education and training resources is limited. Effective delivery by trainers ensures that complex concepts are made accessible to participants, which is essential for the success of programs aimed at improving governance and development in rural communities. The positive reception of the trainers also ties into the broader literature on Technical and Vocational Education and Training (TVET), where the quality of instruction is often cited as a key determinant of program success. Lutayaa et al. (2023) highlighted that in TVET, the competency of trainers is crucial in addressing the skills gap in rural areas. By providing clear and practical instruction, trainers help bridge this gap, facilitating the development of the skills necessary for sustainable growth and empowerment in these communities. Furthermore, the high agreement on trainer effectiveness supports the findings of Choudhary et al. (2022), who noted that the success of educational interventions in rural areas is heavily dependent on the ability of trainers to connect with participants and effectively convey the material. The INFRA mobile learning program's success in this regard suggests that its trainers are not only knowledgeable but also adept at engaging with learners in a way that promotes long-term knowledge retention and application.

Table 6 *Public opinions and observations on changes after the programme*

Effectiveness	Agree (%)	Disagree (%)
Positive changes among VDSC	95.8	4.2
Community programs are effectively implemented	83.3	16.7
Regular house visits are conducted	91.6	8.4

VDSC is responsive to community feedback	83.3	16.7
PKK demonstrates preparedness and competence in governance	95.8	4.2
Mean Agreement Rate	89.96%	
Standard Deviation	5.97%	

Table 6 reveals insightful statistics regarding the effectiveness of the program. The mean agreement rate across all effectiveness statements is 89.96%, with a central tendency of 91.6%. This indicates a generally high level of agreement among respondents. The standard deviation of 5.97% suggests a moderate degree of variability in responses, implying that while most opinions were positive, there was some variation in the strength of agreement across different aspects of the program's effectiveness. These observations suggest that the program has successfully involved the community through proactive measures and consultations, thereby bolstering the VDSC's capacity to promote positive changes and ensure effective governance in rural regions. This agreement aligns with the findings of Abdul Rashid et al. (2021), who highlighted the Malaysian government's efforts to transform rural areas into economic hubs through the Framework of Modern Rural Development (FMRD). The FMRD emphasizes a holistic approach to rural development, aiming to enhance livability, resilience, and smartness in Malaysian rural areas, which is reflected in the positive outcomes of this program. The effectiveness of the program also resonates with the findings of Criollo-C et al. (2021), who underscored the demand for more effective learning models that empower students to take active roles in their education. The high agreement rates suggest that this mobile learning initiative has successfully engaged participants in personalized learning experiences, facilitating broader knowledge acquisition in village governance.

However, it's important to note that the moderate degree of variability in responses (standard deviation of 5.97%) suggests there may be room for improvement. This aligns with the challenges identified by Lutayaa et al. (2023) in the TVET sector, such as the need for well-designed curricula and effective partnerships. Future iterations of the program could address these variations by incorporating more tailored approaches to meet diverse participant needs, particularly in the context of rural development and TVET integration.

Table 7 *Effectiveness of mobile learning initiatives by demographic segments*

Demographic Data	Village Management & Governance	Account & Financial Management	File Management Systems	Modules & Skills of Trainer	Public Opinions & Changes
Gender					
Male (62%)	99.2%	98.0%	98.0%	98.8%	89.0%
Female (38%)	98.0%	99.0%	99.0%	99.3%	91.0%
Position					
Chairperson (42%)	99.5%	98.8%	98.5%	99.5%	92.0%
Secretary (22%)	98.5%	99.2%	98.3%	98.7%	90.0%
Member (36%)	98.0%	97.9%	98.8%	98.8%	88.5%
Duration of Position					
> 11 years (7%)	98.0%	99.3%	98.2%	99.4%	89.5%
< 10 years (18%)	98.5%	98.2%	98.3%	98.8%	89.8%
< 5 years (75%)	99.2%	98.5%	98.9%	98.7%	90.5%
Occupation					
Self-employed (61%)	99.0%	98.5%	99.1%	98.8%	90.8%
Private sector (12%)	98.0%	98.3%	98.5%	98.5%	89.5%
Pensioner (11%)	98.5%	99.2%	98.3%	98.8%	89.5%
Government (3%)	98.2%	98.5%	98.5%	99.3%	89.5%
Others (13%)	98.0%	98.0%	98.2%	98.8%	89.5%

Table 7 shows to provide a detailed analysis of the effectiveness of mobile learning initiatives across various demographic segments. It reveals that male respondents (62%) reported a higher agreement (99.2%) in managing VDSC meetings compared to female respondents (98.0%). Female respondents (38%) demonstrated higher systematic documentation in account and financial management (99.0%) compared to males (98.0%) and exhibited higher effectiveness of trainers (99.3%) than males (98.8%). Females also observed more positive changes post-program (91.0%) compared to males (89.0%).

In terms of position, chairpersons (42%) showed the highest agreement in effective meeting management (99.5%) and effectiveness of trainers (99.5%), while secretaries (22%) reported the highest effectiveness in systematic financial transactions (99.2%). Members (36%) had the lowest effectiveness rates, with 88.5% for public opinions and changes. Regarding the duration of the position, those with less than 5 years of experience (75%) reported the highest agreement in managing VDSC meetings (99.2%) and file management practices (98.9%). Respondents with more than 11 years (7%) showed the highest effectiveness in systematic documentation (99.3%) and trainer effectiveness (99.4%). For occupation, self-employed respondents (61%) showed the highest agreement in managing VDSC meetings (99.0%) and file management systems (99.1%). Pensioners (11%) reported the highest effectiveness in systematic documentation (99.2%), while government employees (3%) rated trainers' effectiveness the highest (99.3%). Overall, public opinions and changes had slightly lower effectiveness rates across all demographics, with self-employed respondents observing the most significant positive changes (90.8%) compared to others (89.5%).

Overall, the data indicates that mobile learning initiatives are highly effective across various demographics, with slight variations observed based on gender, position, duration of position, and occupation. Public opinions and changes tend to have slightly lower effectiveness rates across all demographics compared to other categories.

The findings highlighted the significant impact of the programme on enhancing village management and governance skills among participants. The high levels of agreement among respondents regarding the application of newly acquired skills in various aspects of village administration demonstrate the programme's effectiveness. Specifically, the respondents indicated substantial improvements in conducting systematic meetings, adhering to structured agendas, utilizing the VPAP format for program planning, and implementing effective zonal divisions and HOH card systems for data management. Additionally, the financial management practices and file management systems adopted by the participants further underscore the comprehensive nature of the training. Based on the findings, the following strategic recommendations are proposed to further enhance the effectiveness and sustainability of the programme:

- Expand Training Modules: Develop advanced training modules covering topics such as conflict resolution, strategic development planning, and advanced financial management to build on the foundational skills already imparted.
- Regular Refresher Courses: Implement periodic refresher courses to ensure that village leaders remain updated on best practices and new methodologies in village governance. These courses will help maintain and enhance the initial improvements observed.
- Peer Learning Networks: Establish peer learning networks to facilitate the sharing of experiences, challenges, and best practices among village leaders. These networks can provide ongoing support and foster a culture of continuous improvement and innovation.
- Monitoring and Evaluation Framework: Develop a comprehensive monitoring and evaluation framework to regularly assess the programme's effectiveness. This framework should include periodic surveys, focus group discussions, and field visits to ensure that the skills learned are being effectively applied and to identify areas for further improvement.
- Integration of Technology: Promote the use of digital tools and technology in village management practices. Mobile apps and other digital platforms can be utilized for real-time data collection, reporting, and communication, enhancing the efficiency and effectiveness of governance processes.
- Community Engagement: Encourage greater community involvement in governance processes through regular community meetings, participatory planning sessions, and feedback mechanisms. This will ensure that governance practices are inclusive and responsive to the community's needs and aspirations.
- Supportive Policy Environment: Advocate for policies that support continuous capacity building and the integration of mobile learning in rural development initiatives. Collaborative efforts with government agencies and development partners can provide the necessary support and resources for sustaining the programme.

Implementation of these strategic recommendations could further refined and strengthened, ensuring sustained improvements in village governance and management. These enhancements will ultimately contribute to the broader goal of sustainable rural development and improved quality of life for rural communities.

4. Conclusion and Recommendations

This project aimed to assess the effectiveness of the programme in enhancing village governance through targeted training modules. The results demonstrate significant improvements in village management, financial and accounting practices, and file management systems, with high effectiveness ratings for the modules and trainers. The findings directly address the research questions by confirming the programme's positive impact on village governance. This is evident through improved skills in village management, accounting, and file management, as well as favorable public perception regarding changes in village institutions. These outcomes highlight the programme's potential as a model for similar initiatives in other rural contexts.

The implications of these results are substantial, as they emphasize the importance of innovative educational programmes in promoting rural development. Abdul Rashid et al. (2021) highlight the Malaysian government's efforts to transform rural areas into economic hubs, and this study supports that objective by demonstrating how targeted training can improve village governance and management. Similarly, Choudhary et al. (2022) emphasize the importance of digital literacy in bridging the urban-rural divide, which aligns with the digital components of this programme. Criollo-C et al. (2021) and Grant (2019) underline the transformative potential of mobile learning technologies, which this programme effectively harnesses to enhance educational outcomes in rural areas.

This study contributes valuable insights to the field, suggesting that such programmes can effectively bridge the urban-rural development gap and support sustainable development goals. The programme's alignment with national policies on rural development and digital literacy underscores its relevance and potential for wider implementation. Moreover, the programme's approach to TVET is particularly relevant, as it provides practical, hands-on skills training that is essential for improving employability and economic opportunities in rural areas. The relevance of TVET in this context is also supported by the findings of Lutayaa et al. (2023), who highlight the need for improved TVET programmes to address skills shortages in rural communities.

This study provides a solid foundation for future research and policy development, highlighting the critical role of targeted educational interventions in enhancing rural governance and development. By addressing the identified limitations and building on the current findings, future research can further refine and expand the impact of the Mobile Learning: Hands-on Village Management and Governance programme, making it a robust model for effective TVET in rural settings.

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Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

Author Contribution

Nordiyana Mohd Taib assisted in data management and writing the manuscript. Abdul Mutalib Hasan provided resources, and administered the project reporting. Rosemas Edayu Mat Amin assisted in writing the literature review. Rahimah Abd Rahman assisted in writing the method, analysis and discussions. Anitawati Mohd Lokman provided supervision to the overall concept, the writing, and the editing of the paper.

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