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Implementation of the School-Based Population Awareness Program (SSK) Management in Senior High Schools of Pelalawan Regency

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ABSTRACT

The increasing complexity of population issues among adolescents, including early marriage, health risks, limited life planning, and low participation in formal education, highlights the need for schools to strengthen population awareness through structured program management. This challenge is evident in senior high schools in Pelalawan Regency, an area with rapid demographic growth and social disparities. This study is needed because research rarely examines SSK managerial practices comprehensively, particularly the application of planning, organizing, implementing, and monitoring in senior high schools located in high-growth demographic regions. This study analyzes these functions in two SSK schools. A qualitative collective case study design was used, with data collected through observations, interviews, and document analysis, and validated through triangulation. Data analysis followed the interactive model of Miles, Huberman, and Saldaña. The study is informed by program management theory, population education frameworks, and the SSK model, which emphasize managerial functions and demographic literacy as foundations for program effectiveness. The findings show shared challenges, including limited guidance, weak coordination, and minimal structured monitoring. SMA Negeri 1 reflects a more administrative approach, whereas SMA Bernas shows stronger digital collaboration. The study concludes that strengthening managerial functions is essential for sustaining SSK and enhancing school-level governance.

1. Introduction

Amid increasingly complex social dynamics, population issues such as early marriage, low reproductive health literacy, migration driven by economic pressures, and weak life planning have become major concerns in the education sector. These challenges influence not only students' academic performance but also their readiness to build a sustainable future in a rapidly changing society. At the senior

secondary level, such issues are particularly visible in Pelalawan Regency, an area marked by rapid population growth and widening socio-economic disparities. These conditions highlight the need for contextualized population education and structured program management in schools. According to the Riau Province Statistics Bureau (2024), Pelalawan's population has reached 415,500 people, with 109,800 residing in Pangkalan Kerinci District. Its annual population growth rate of 5.65 percent is significantly higher than the national average of 1.17 percent, while population density continues to intensify educational pressures. The Senior High School Net Enrollment Rate in Riau Province has stagnated at 66 percent, indicating persistent barriers to formal schooling. These demographic patterns heighten adolescents' vulnerability to early marriage, teenage pregnancy, and low family resilience. High infant mortality, under-five mortality, and maternal mortality further reinforce the urgency of strengthening population and reproductive health education for adolescents.

To respond to these challenges, the National Population and Family Planning Board (BKKBN) launched the School-Based Population Awareness Program (SSK) in 2013. This program integrates population themes into school learning through cross-disciplinary and contextual approaches, including curriculum development, population literacy corners, student ambassador activities, and the incorporation of population concepts into lesson plans. Its legal foundation includes Law No. 52/2009 on Population Development and Family Planning, Law No. 23/2014 on Local Governance, Government Regulation No. 87/2014 on Population Development and Family Planning, and Ministry of Education Regulation No. 22/2020 on contextual and competency-based learning. In Riau Province, SMA Negeri Bernas Binsus and SMA Negeri 1 Pangkalan Kerinci were appointed as SSK implementing schools under Decree No. Kpts.1718 of 2024. Each school serves more than 800 students and is located in an area with rapid demographic growth, making them strategic sites for fostering population literacy.

Despite this potential, preliminary observations indicate that teachers face difficulties integrating SSK themes into the Merdeka Curriculum due to unclear curricular positioning. Lesson plan integration often remains administrative, and limited technical training requires teachers to rely heavily on individual initiative. Another constraint identified at SMA Negeri 1 Pangkalan Kerinci is the limited availability of contextual teaching materials aligned with students' local realities. Population topics such as migration, demographic bonus, and reproductive health are minimally incorporated because technical guidance for integration is limited. This condition implies that instructional material development remains unsystematic and dependent on individual teacher creativity. These gaps reveal discrepancies between actual implementation (*das sein*) and normative expectations (*das sollen*) established in national policy. From a managerial perspective, effective implementation requires structured application of management functions. Thiry (2010) emphasizes governance, stakeholder engagement, change management, and benefits management as essential elements of long-term program success.

The Project Management Institute (2017) outlines five performance domains that guide effective program implementation: strategy alignment, benefits management, stakeholder engagement, program governance, and program life cycle management. Similarly, guidelines issued by the European Commission (2016) and the Office of Government Commerce (2011) highlight the importance of coherent planning, structured implementation, and systematic evaluation. These frameworks correspond with educational management principles described by Fattah (2004), which include planning, implementation, and supervision. The PMI framework is considered most relevant for this study because it aligns closely with the managerial characteristics required in school-based programs such as SSK.

In the planning stage, both schools have yet to develop formal documents outlining program direction or mechanisms for integrating SSK into the curriculum. Some teachers at SMA Bernas Binsus incorporate population themes into lesson plans, but these initiatives are not supported by needs analyses or clear guidelines. At SMA Negeri 1 Pangkalan Kerinci, planning documents are absent, and instructional development is delegated without structured oversight. Organizing functions also face constraints, including limited team coordination, minimal cross-subject involvement, and inconsistent collaboration with external partners such as BKKBN, the Health Center, BNN, and the Education Office. Program implementation remains limited because population values have not been systematically embedded into classroom instruction, and insufficient training forces teachers to rely on conventional teaching methods. Supervision remains the weakest managerial component, as both schools lack monitoring and evaluation instruments necessary for assessing program outcomes. Weak documentation and the absence of feedback mechanisms further restrict opportunities for improvement.

Studies show that these challenges also occur internationally. Abdiyah et al. (2019) found that only a small proportion of Indonesian schools implemented SSK effectively. Septiani, Setyowati, and Atmaja (2022) reported significant variation in students' understanding of population issues. UNESCO (2019) noted that although many countries include population education within national curricula, implementation gaps persist because of weak planning and insufficient school-level capacity. Marszowski (2020) identified similar challenges in European contexts, particularly related to teacher involvement and limited resources. Research in Burundi by Nzobonimpa and Zamroni (2017) also highlighted persistent barriers in teacher training, contextual material development, and supervisory mechanisms. These studies illustrate that program management, rather than policy absence, often determines the success of population education initiatives.

However, existing research largely focuses on outcomes rather than examining managerial processes across planning, organizing, implementation, and supervision. This gap is particularly relevant in regions experiencing demographic pressures such as Pelalawan Regency. Therefore, the objective of this study is to analyze the implementation of the School-Based Population Awareness Program (SSK) through the four core management functions of planning, organizing, implementation, and supervision in senior high schools in Pelalawan Regency and

to formulate managerial recommendations that strengthen program governance and support sustainable program effectiveness.

2. Methodology

This study employs a qualitative approach because it aims to understand in depth the implementation process of the School-Based Population Awareness Program (SSK) in real school settings. This approach is based on a post-positivist paradigm, which views social reality as complex, multifaceted, and requiring holistic understanding through direct interaction with research subjects. Through this approach, the researcher seeks to explore the meanings, experiences, and social dynamics that emerge during program implementation, resulting in narrative, contextual, and information-rich data (Creswell, 2013). The research design used is a collective case study, selected because the study analyzes more than one case to obtain an in-depth understanding of program implementation across different contexts. Two senior high schools in Pelalawan Regency, namely SMA Negeri 1 Pangkalan Kerinci and SMA Negeri Bernas Binsus, were designated as case units. The analysis consisted of within-case analysis to understand each school's characteristics in depth, followed by cross-case analysis to identify similarities, differences, and recurring patterns across cases (Naamy, 2019; Yin, 2018).

Research Site and Time

The research was conducted at SMA Negeri 1 Pangkalan Kerinci and SMA Negeri Bernas Binsus, the two schools designated through the Decree of the Riau Provincial Education Office and BKKBN No. 1718/2024 as the only SSK implementers at the senior high school level in Pelalawan Regency. The preliminary study was carried out in March 2025, exploratory data collection in July 2025, and the main data collection took place in September 2025, when the program had been running stably since December 2024. Data analysis and processing were conducted in October and November 2025.

Data Sources

The data sources consist of field data and documentation. Field data were obtained through direct interaction with informants selected purposively based on their roles in SSK implementation. These informants included school principals, vice principals for curriculum, subject teachers, guidance and counseling teachers, SSK coordinators, and four students from each school representing Grades X, XI, and XII. Informants were selected to represent program management functions so that the collected data could describe managerial implementation comprehensively. Documentation included learning tools such as lesson plans and teaching modules containing population issues, teaching materials, decrees of implementation teams, organizational structures, activity reports, meeting minutes, the school's vision and mission, the school work plan (RKS), the medium-term work plan (RKJM), the annual work plan (RKT), and visual documentation such as activity photos and

school publication media. These documents were used to verify informants' statements and strengthen findings through triangulation.

Data Collection Techniques and Instruments

Data were collected through interviews, observation, and document study. These techniques were selected because they provide a complete description of how planning, organizing, implementation, and monitoring functions operate in the schools. Interviews were conducted using a semi-structured format with guidelines developed based on the research focus, allowing flexible data exploration according to the context. Interview results were transcribed and validated by informants through member checking to ensure accuracy and consistency. Observations were conducted non-participatively to capture the actual practice of SSK implementation, focusing on planning aspects, team coordination, implementation of learning and supporting activities, and internal monitoring mechanisms. Observation notes were compared with interview and document data to strengthen the validity of findings. Documentation was analyzed using a checklist covering aspects of planning, organizing, implementation, and monitoring to assess consistency between written policies and field practices. As the main instrument, the researcher was directly involved in collecting and interpreting data. Supporting instruments included interview guides, observation sheets, and documentation checklists to ensure systematic and complete data collection in line with the research focus (Creswell & Creswell, 2018).

Data Validity

Data validity was ensured through technique triangulation and source triangulation. Technique triangulation was carried out by comparing interview results, observations, and documentation. Source triangulation was conducted by comparing information obtained from various categories of informants according to their roles in the program. Member checking was performed by providing interview summaries to informants to verify accuracy.

Data Analysis

Data analysis followed the interactive model of Miles, Huberman, and Saldaña (2014), which includes data condensation, data display, and conclusion drawing. Data condensation was conducted through selecting, focusing, simplifying, abstracting, and transforming data so that diverse information could be mapped into core categories corresponding to SSK management functions. The data were then presented in thematic narratives and cross-case comparison matrices. In the conclusion-drawing stage, findings were repeatedly verified through triangulation as well as comparisons between within-case and cross-case analyses. Thematic analysis was used to interpret meanings, patterns, and dynamics of program implementation to ensure that the research results accurately portrayed empirical conditions and met scientific standards of accountability.

3. Results and Discussion

This research was conducted in two senior high schools in Pelalawan Regency that were designated as implementers of the School-Based Population Awareness Program (SSK) through the Decree of the Head of the Riau Provincial Education Office Number Kpts.1718/2024. Both schools implement SSK within different institutional, social, and cultural contexts, allowing for multiple-case analysis. SMA Negeri 1 Pangkalan Kerinci is located in the administrative center of the regency, has 1,263 students and 82 educators, and emphasizes strengthening character, science and technology, and environmental awareness in its school vision. Meanwhile, SMA Negeri Bernas Binsus has 838 students and 52 educators, occupies a modern new building, and integrates Malay local wisdom and population issues into its vision. These two schools were selected as research sites to examine the implementation of SSK program management across the four main functions: planning, organizing, implementation, and monitoring.

Findings and Discussion

Planning of the SSK Program in the Two Senior High Schools in Pelalawan Regency

Planning of the SSK Program at SMA Negeri 1 Pangkalan Kerinci has been included in the School Work Plan (RKS) and the Medium-Term Work Plan (RKJM), but the indicators remain general and not yet operational. Needs analysis has not been systematic, and guidance and counseling data are used only situationally. Stakeholder involvement is limited, and students have not been actively engaged. The roadmap remains an initial concept and has not been formalized. Integration of SSK into learning appears in teachers' lesson plans but has not become a curriculum policy. Program planning at SMA Negeri Bernas Binsus is more collaborative and digitally recorded in the RKS and the Annual Work Plan (RKT). Guidance and counseling data are used as the basis for determining activity priorities. Program objectives follow BKKBN guidelines and are linked to the school's thematic projects. The roadmap has been implemented gradually although it has not yet been formalized. Planning is supported by digital documentation that strengthens accountability. The differences in planning practices between the two schools are summarized in Table 1.

Table 1. Planning of the SSK Program in the Two Senior High Schools in Pelalawan Regency

Summary of Findings on the Planning of the SSK Program :	
SMAN 1 Pangkalan Kerinci	<ul style="list-style-type: none"> ● Integration of documents is included in the RKS and RKJM, but remains general ● Needs analysis is not yet systematic ● Stakeholder involvement is dominated by teachers, with limited student participation ● The program roadmap is not yet formal ● Learning integration is not yet comprehensive across subjects and documentation is stored manually

SMAN Bernas Binsus	<ul style="list-style-type: none"> • Document integration is included in the RKS and RKJM, and explicitly in the school's vision and mission • Needs analysis uses guidance and counseling data as the basis • Stakeholder involvement is well coordinated among teachers, guidance and counseling staff, students, subject teachers, and the SSK team • The program roadmap has been implemented gradually • Learning integration involves multiple subjects within learning plan documents that are organized digitally
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The finding that planning at SMAN 1 is not yet based on a systematic needs analysis indicates a lack of benefits-realization planning as described by PMI (2017). Meanwhile, SMAN Bernas has already used guidance and counseling data and involved stakeholders, but still does not have clear outcome indicators. This reinforces Thiry's (2015) argument that unclear benefit indicators hinder sustainable program evaluation. In the context of educational management, planning that is not data-based weakens the school's strategic management function (Owen & Smith, 2006).

Organizing the SSK Program in the Two Senior High Schools in Pelalawan Regency

The organizing of the program at SMAN 1 Pangkalan Kerinci is characterized by the establishment of an organizational structure through an official decree, although the understanding of roles is not yet evenly distributed. Coordination occurs but is not consistently documented. The population corner is no longer active, and the role of SSK Ambassadors has not been optimized. External collaboration exists but is not yet institutionally strong because the memoranda of understanding are unstable. In contrast, the organizing at SMAN Bernas Binsus is marked by a comprehensive organizational structure that is publicly disseminated. Biweekly coordination and curriculum supervision run effectively, and SSK Ambassadors function as active drivers of outreach activities. External collaboration is formalized through stable memoranda of understanding, making institutional support more sustainable. Details of the organizing mechanisms in both schools are presented in Table 2.

Table 2. Organizing the SSK Program in the Two Senior High Schools in Pelalawan Regency

Summary of Findings on the Organization of the SSK Program :	
SMAN 1 Pangkalan Kerinci	<ul style="list-style-type: none"> • The team structure is complete, has been publicly disseminated, and an SSK team is established for each class. • Coordination is conducted through meetings but documentation is weak • The role of SSK ambassadors is not optimal • Facilities such as the population corner are not active • External collaboration is not strong in terms of memoranda of understanding • Supervision is administrative in nature
SMAN Bernas Binsus	<ul style="list-style-type: none"> • The team structure exists, but is not displayed in the population corner and remains an internal document of the SSK team • Coordination is conducted through meetings using digital-based documentation • The role of SSK ambassadors is very active

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- Facilities such as the population corner are well utilized and contain population-related materials
 - External collaboration is strong in terms of memoranda of understanding
 - Supervision is administrative and digitally based
-

The fragmentation of roles at SMAN 1 indicates a weak governance framework in program management (PMI, 2017), because the organizational structure is not accompanied by clear operational mechanisms. In contrast, the organizing function at SMA Bernas Binsus, which is collaborative in nature, aligns with Thiry's (2015) principle that programs require multiparty integration to achieve strategic benefits. This comparison illustrates that the strength of organizational arrangements plays a critical role in shaping teacher involvement and ensuring program sustainability. Schools with weak coordination tend to produce sporadic implementation, whereas those with dynamic and collaborative structures are more capable of institutionalizing the program effectively.

Implementation of the SSK Program in the Two Senior High Schools in Pelalawan Regency

The implementation of the program at SMAN 1 Pangkalan Kerinci occurs incidentally. Integration into lesson plans is rarely found, student activities are not sustained, and population education appears only during certain events. In contrast, SMAN Bernas Binsus has implemented project-based learning, integrated population content across multiple subjects, and made regular use of the SSK room and digital media to support learning. A comparative summary of the implementation practices in both schools is presented in Table 3.

Table 3. Implementation of the SSK Program in the Two Senior High Schools in Pelalawan Regency

Summary of Findings on the Implementation of the SSK Program :	
SMAN 1 Pangkalan Kerinci	<ul style="list-style-type: none"> ● Program implementation is still incidental and does not follow a specific SSK schedule or activity calendar. ● Integration into learning is not yet evenly distributed; it appears only at certain moments and among teachers who take initiative (Biology, Sociology, Guidance and Counseling). ● Learning methods are not yet contextual; the inclusion of SSK material in lesson plans remains administrative. ● Learning media such as the population corner and bulletin boards are used only during visits from related agencies and for reporting purposes. ● Student activities are not sustainable; the activities of SSK ambassadors, PIK-R, or campaigns are conducted only during competitions or official visits. ● There is no formal cross-subject collaboration. ● Technical training for teachers to support the integration of population content has been conducted. ● There is no monitoring of learning implementation to ensure the sustainability of material integration.

SMAN Bernas Binsus	<ul style="list-style-type: none"> ● Program implementation runs more systematically and follows an annual series of SSK activities. ● Integration of population content appears in various subjects. ● Learning has begun to adopt project-based and contextual approaches, especially on themes of adolescent reproductive health and local population issues. ● Utilization of the population corner, the SSK room, and digital media is active in supporting student learning activities. ● Student activities through SSK Ambassadors, PIK-R, PMR, and external partnerships with BKKBN, health centers, and BNN are carried out routinely. ● Cross-subject collaboration occurs through curriculum meetings and the school's digital forums. ● Implementation is digitally documented through activity photos, attendance lists, and uploads on SIMONEV.
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The implementation of the SSK program in the two senior high schools in Pelalawan Regency shows a striking contrast that reflects unequal levels of program management readiness. At SMAN 1 Pangkalan Kerinci, implementation occurs incidentally, without a planned SSK activity calendar and without systematic integration into lesson plans; population education materials appear only in certain subjects such as Biology, Sociology, and Guidance Counseling. This pattern indicates the absence of a stable delivery system, a condition that, according to Owen and Smith (2006), signals that the implementation function within program management has not operated optimally. The administrative insertion of materials and the use of the population corner only during official visits also illustrate that the school has not met the principles of instructional support and a conducive learning environment as emphasized in the UNESCO Whole-School Approach (2015).

The discontinuity of student activities such as SSK Ambassadors and PIK-R contradicts the learner participation continuum outlined by UNESCO (2017), which asserts that adolescent participation in population education must be progressive and regular. These conditions indicate that SMAN 1 remains at a low level of program maturity as formulated in the PMI Program Management Standard (2017), where program implementation does not follow a documented operational structure and is not supported by a monitoring mechanism for instructional activities. In contrast, SMAN Bernas Binsus demonstrates a more mature, structured, and integrated implementation of the SSK program within students' learning experiences. The school has established an annual cycle of SSK activities, integrated population education across subjects, and developed contextual project-based learning, particularly on issues related to adolescent reproductive health and local demographic conditions. These practices are consistent with the perspective of Bulatao (1986), who emphasizes that population education should be grounded in real-life contexts, enabling students to understand demographic issues through meaningful experiences that link personal, social, and environmental dimensions. The consistent utilization of the SSK room, literacy corner, and digital media reflects an enabling learning environment aligned with the UNESCO Whole-School Approach (2015), while cross-subject collaboration through curriculum meetings and digital forums indicates strong internal coordination.

Monitoring of the SSK Program in Two Senior High Schools in Pelalawan Regency

The monitoring of the implementation of the School-Based Population Awareness Program (SSK) in the two schools shows noticeable differences in mechanism, depth, and evaluative orientation. At SMAN 1 Pangkalan Kerinci, monitoring activities tend to be administrative in nature and focus primarily on document verification, preventing the process from providing strategic feedback for improving program quality. Internal monitoring is not conducted on a scheduled basis, is not supported by specific evaluation instruments, and does not produce documented follow-up actions. This condition indicates that the monitoring process has not yet functioned as an organizational learning tool. In contrast, SMAN Bernas Binsus applies a more systematic monitoring approach through layered supervision, the use of digital platforms, and the active involvement of various school components. Internal monitoring is carried out routinely and is complemented by external supervision from the National Population and Family Planning Agency (BKKBN), which operates collaboratively. Each activity is evaluated through reflection forums that generate recommendations and follow-up actions used in the preparation of the subsequent year's program. These findings show that monitoring at SMAN Bernas focuses not only on administrative compliance, but also on continuous improvement of program quality. The differences in monitoring depth and structure between the two schools are summarized in Table 4.

Table 4. Monitoring of the SSK Program in the Two Senior High Schools in Pelalawan Regency

Summary of Findings on the Monitoring of the SSK Program :	
SMAN 1 Pangkalan Kerinci	<ul style="list-style-type: none"> ● Monitoring is administrative in nature, limited to checking the completeness of activity documentation. ● No evaluative monitoring instruments are available (such as rubrics or indicators of SSK substance achievement). ● Internal monitoring is unscheduled and conducted only during major activities or when reports are required. ● External monitoring from BKKBN consists only of document verification and does not include an evaluation of program quality. ● There is no reflection forum to review the implementation process or learning outcomes. ● Follow-up actions from monitoring are not documented, so they do not inform the planning of the following year. ● Program success is evaluated using activity-based indicators rather than changes in student behavior or attitudes. ● School-wide participation is low because the monitoring mechanism lacks a structured SOP.
SMAN Bernas Binsus	<ul style="list-style-type: none"> ● The program is implemented more systematically and follows an annual sequence of SSK activities. ● The integration of population education substances appears across multiple subjects. ● Learning has begun to adopt project-based and contextual approaches, particularly on themes related to adolescent reproductive health and local population issues.

- The use of the population corner, the SSK room, and digital media is active in supporting student learning activities.
- Student activities through SSK Ambassadors, PIK-R, PMR, and external partnerships (BKKBN, Community Health Center, BNN) are conducted routinely.
- Cross subject collaboration occurs through curriculum meetings and digital school forums.
- Implementation is documented digitally through activity photos, attendance lists, and uploads on the SIMONEV platform.

Based on this comparison, it is evident that the two schools are positioned at different levels of monitoring maturity. SMAN 1 Pangkalan Kerinci continues to apply an administrative model of monitoring that emphasizes regulatory compliance, whereas SMA Bernas Binsus has developed a more reflective, collaborative, and digitized monitoring approach. This difference in depth directly influences the quality of program implementation and the school's capacity to undertake continuous improvement. To provide a more comprehensive understanding, the following section presents an in-depth analysis of each monitoring component, including internal monitoring mechanisms, external supervision, monitoring instruments, and the sustainability of follow-up actions and evaluations of the program's five core substances. The depth of SSK implementation at SMAN 1 Pangkalan Kerinci is illustrated in Figure 1.

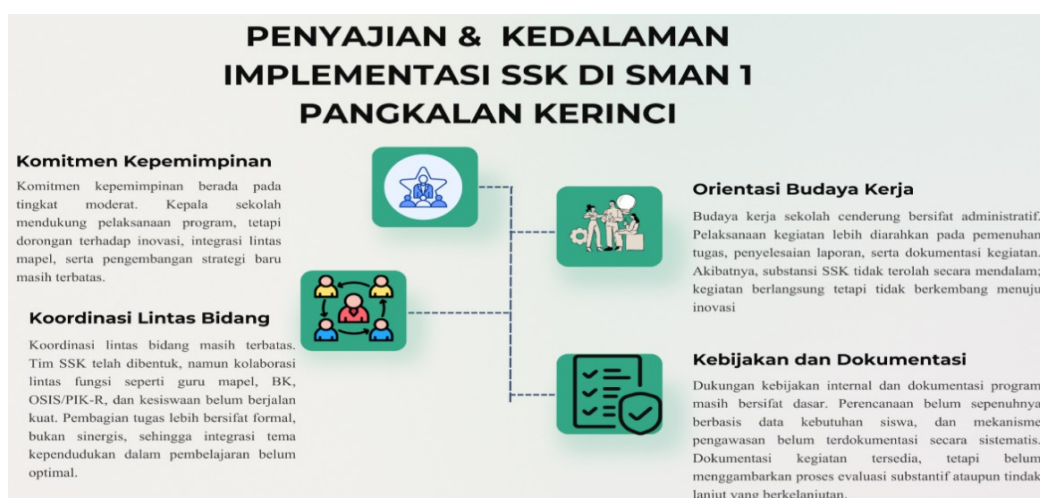


Figure 1. Depth of SSK Implementation at SMAN 1 Pangkalan Kerinci Prepared by the researcher (2025) based on the synthesized research findings

To clarify the differences in implementation between the two schools and to demonstrate how managerial patterns of the SSK program operate in practice, the subsequent qualitative analysis is presented in visual form. The visual presentation is designed to highlight relationships among findings, illustrate the analytical flow, and depict the structure of program implementation more comprehensively. These visualizations also function as empirical confirmation of the patterns that emerged in the preceding narrative analysis. The figures presented include: (1) the depth of SSK substance implementation in each school, (2) the operational cycle of the four

management functions, and (3) the conceptual model derived from cross-case synthesis (SSK–CERDAS) developed by the researcher. All visuals are constructed based on interview data, observations, and documentation, and are integrated with the theoretical framework of program management (PMI, 2017; Thiry, 2015; Owen & Smith, 2006) as outlined in Chapter II. Therefore, each figure serves not only as an illustration but also as an analytical device that reinforces the coherence between empirical findings and theoretical foundations.

The depiction of SSK implementation at SMA Bernas Binsus is visualized through the following mind map, which illustrates how the four managerial functions shape a more collaborative, reflective, and digitally based implementation pattern within the school. Figure 2 presents the depth of SSK implementation at SMA Bernas Binsus through this comparative mind map. Figure 2 presents the implementation depth at SMA Bernas Binsus through a comparative mind map.



Figure 2. Depth of SSK Implementation at SMAN Bernas Binsus
Prepared by the researcher (2025) based on the synthesized research findings

The following section presents a visualization of the operational pattern of the four management functions in the form of a cycle. This visualization illustrates the logical relationships among the functions, depicts the program workflow from planning to evaluation, and highlights the consistency of this pattern across both schools despite their different levels of maturity. It also demonstrates how the empirical findings align with program management theories such as PMI (2017), Thiry (2015), and Owen and Smith (2006), which conceptualize program management as an adaptive and iterative cyclical process. The operational cycle of the four management functions is shown in Figure 3.



Figure 3. SSK Program Planning Cycle

Prepared by the researcher (2025) based on the synthesized research findings

The organizing patterns identified in both schools reveal several operational linkages among coordination mechanisms, role distribution, and stakeholder participation. These relationships are visualized in Figure 4, which displays the SSK Program Organizing Cycle.



Figure 4. SSK Program Organizing Cycle

Prepared by the researcher (2025) based on the synthesized research findings

Overall, the organizing of the SSK program demonstrates an increasingly collaborative work pattern that is adaptive to technological developments. This synergy reflects a shift from a purely structural approach toward participatory governance, in which collaboration and transparency serve as the foundational principles for program implementation at the school level. To illustrate how these collaborative dynamics are operationalized during program execution, Figure 5 presents the implementation cycle of the SSK program. Figure 5 presents the SSK Program Implementation Cycle, which visualizes the sequence of activities,

stakeholder interactions, and instructional integration that occur throughout the implementation process.

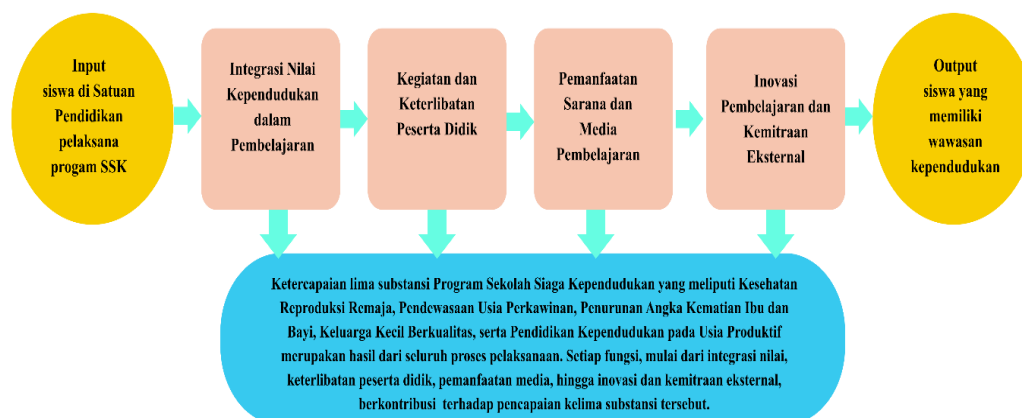


Figure 5. SSK Program Implementation Cycle

Prepared by the researcher (2025) based on the synthesized research findings

The integration of the SSK program's monitoring and evaluation processes is illustrated through a reflective, collaborative, and digitally based supervision approach. Each component in the diagram shows the interconnected relationships between internal and external monitoring, the development of instruments and monitoring mechanisms, and the analysis of program success indicators and school community participation. The integration of monitoring and evaluation processes is depicted in Figure 6.



Figure 6. SSK Program Monitoring Cycle

Prepared by the researcher (2025) based on the synthesized research findings

In this study, the six CERDAS elements (Collaborative, Empowering, Reflective, Digital based, Active, Sustainable) were identified through recurring patterns in both schools, although with differing levels of implementation. To consolidate the cross-case synthesis and highlight the novelty produced in this study, Figure 7 presents the Innovation of Research Findings, which visualizes the conceptual contribution generated from the integration of managerial patterns, empirical insights, and theoretical frameworks across both schools.

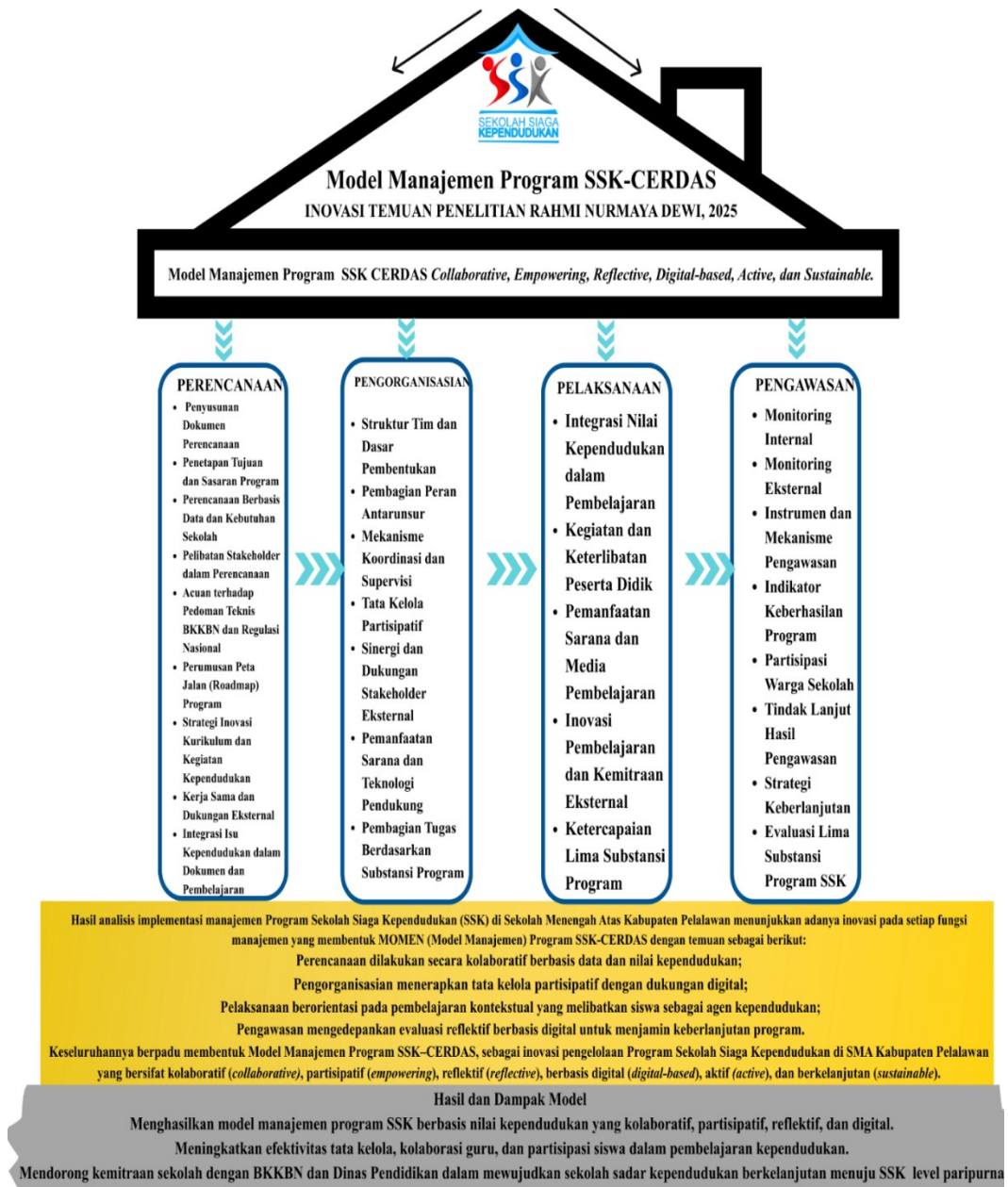


Figure 7. Innovation of Research Findings

Prepared by the researcher (2025) based on the synthesized research findings

The differences in maturity levels further reinforce that the six elements appear as a common cross-case pattern rather than as characteristics unique to one school.

Thus, SSK–CERDAS constitutes a cross-case finding, as the six elements were derived through comparative analysis, confirmed by recurring patterns across two different contexts, and fulfill the principle of theoretical replication as described by Yin (2018). This synthesis indicates that the effectiveness of SSK program management at the school level is not supported by a single management function alone, but by the integration of the six CERDAS elements that empirically emerged in both cases. Overall, the findings demonstrate that the implementation of SSK in the two senior high schools in Pelalawan Regency operates through four interconnected management functions that form a continuous cycle. Although the two schools exhibit different levels of maturity within the functions of planning, organizing, implementing, and monitoring, the general pattern indicates the need for program governance that is more collaborative, reflective, and data-driven. The cross-case findings reveal that program effectiveness is determined not only by the strength of individual functions but also by the cohesion among them, enabling an adaptive workflow consistent with program management theory.

These findings align with the *Standard for Program Management*, which emphasizes that program success depends on the integration of strategic planning, governance structures, benefits management, and consistent monitoring and controlling mechanisms. Likewise, they resonate with the view that effective programs integrate collaborative processes across stakeholders, data-informed decision making, and reflective evaluation cycles to ensure value sustainability. The results also confirm the perspective that educational evaluation should move beyond administrative procedures toward formative and reflective approaches that facilitate institutional learning. Furthermore, the implementation of SSK in both schools demonstrates relevance to the core principles of population education, particularly the integration of demographic issues into learning, interdisciplinary approaches, active student participation, and sustainable institutional support. The success of SMA Bernas Binsus in establishing thematic learning practices, cross-subject collaboration, and digital supervision illustrates the application of education for sustainable development, whereas the conditions in SMAN 1 Pangkalan Kerinci reflect an early stage of program institutionalization commonly found in schools experiencing policy transition. Thus, the results and discussion in Chapter IV indicate that the SSK program can only achieve optimal effectiveness when the four management functions are carried out in an integrated manner within a governance framework that is collaborative, reflective, empowering, and digitally enabled. The cross-case findings culminating in the SSK–CERDAS model affirm that the success of population education at the school level depends not on the quantity of activities performed but on the quality of managerial processes that ensure the program operates adaptively, participatorily, and sustainably. The next chapter will elaborate on the conceptual and practical implications of these findings and provide recommendations for strengthening the governance of the SSK program at the school level.

4. Conclusion

This study concludes that the implementation of the School-Based Population Awareness Program (SSK) in the two schools reflects different levels of maturity across the four management functions, even though both exhibit a generally complementary pattern. SMA Bernas Binaan Khusus demonstrates more collaborative and data-driven planning, while SMA Negeri 1 Pangkalan Kerinci remains at an administrative stage, influencing the extent to which population issues are integrated into school plans and curricula. The organizing function shows that clear role division, regular coordination, and digital support strengthen program operations; SMA Bernas displays a more adaptive and participatory approach than SMA Negeri 1. In terms of implementation, both schools carry out literacy and outreach activities, yet SMA Bernas achieves a higher level of contextual and project-based learning with stronger cross-subject collaboration. Monitoring emerges as the most differentiated function: SMA Bernas applies reflective and digitally supported supervision that generates continuous improvement, whereas SMA Negeri 1 remains oriented toward administrative reporting. Cross-case analysis leads to the development of the SSK–CERDAS model, which represents a managerial pattern that is collaborative, empowering, reflective, digital-based, active, and sustainable. Overall, the study successfully meets its research objectives by describing the implementation of SSK program management and identifying managerial patterns that enhance program effectiveness. Future research may explore broader institutional collaboration, supportive regional policies, strengthened digital-based supervision, and impact-evaluation tools capable of capturing changes in students' knowledge, attitudes, and behaviors more comprehensively.

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