

Mindset in Vocational Students Through AI-Assisted Business Model Canvas Workshop

Ni Wayan Nanik Suaryani Taro Putri*¹, Jauzaa Maylia Suhendro², Ni Putu Noviyanti Kusuma³

¹ Management Program, Faculty of Economics and Business, Primakara University, Indonesia

² Information Systems Program, Faculty of Information Technology and Design, Primakara University, Indonesia

³ Accounting Information Systems Program, Faculty of Information Technology and Design, Primakara University, Indonesia

*e-mail: suaryaninaniktp@primakara.ac.id

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Abstract

Vocational High School (SMK) graduates in Indonesia experience persistently high unemployment, partly because many students' competencies remain oriented toward formal employment rather than business creation. Preliminary interviews at SMK Saraswati 1 Denpasar indicated that among 51 grade-12 students enrolled in the entrepreneurship subject, only five reported owning or intending to start a business after graduation. This community service program aimed to strengthen students' technopreneurship understanding and their ability to produce a structured business plan using the Business Model Canvas (BMC), supported by Generative AI (ChatGPT). The intervention was delivered in a 2-hour workshop consisting of: (1) a 30-minute session on entrepreneurship and technopreneurship concepts, (2) a 50-minute step-by-step BMC development integrated with ChatGPT and guided by the speaker with facilitator mentoring and observation, and (3) a 40-minute group presentation with feedback. Outcomes were assessed using a descriptive evaluation framework (pre-post concept quiz, BMC rubric, and structured observations). Before the program, all students recognized the term "entrepreneur," but only 3.92% demonstrated adequate understanding of "technopreneurship"; after the workshop, 100% of participants could define both concepts, explain differences, and provide examples. All groups completed the nine BMC blocks (100%), with 80% of group outputs reflecting technopreneurship-based business ideas. Rubric review identified recurring weaknesses in articulating value propositions (30%) and distinguishing customer relationships from channels (40%). Overall, integrating BMC practice with AI-assisted ideation provides a practical and replicable approach to improve structured business thinking and digital literacy among SMK students.

Keywords: Entrepreneurship; Technopreneurship; Business Model Canvas; Generative AI; Vocational Students

1. INTRODUCTION

Education is a strategic instrument for equipping students with competencies relevant to the needs of the world of work and changing economic landscapes. In formal education, Vocational High Schools (Indonesian: SMK, which stands for Sekolah Menengah Kejuruan) are designed to provide students with specific skills according to their expertise, with the expectation that graduates will be better prepared to enter the job market. However, the transition from vocational education to employment remains challenging in Indonesia. The Indonesia's Central Statistics Agency (Indonesian: BPS which stands for Badan Pusat Statistik) reported that the open unemployment rate in August 2024 was 4.91% (BPS, 2024b), and when disaggregated by education level, SMK graduates recorded the highest unemployment rate (9.01%) compared with other groups (BPS, 2024a). This data indicates that strengthening the competencies of SMK graduates cannot rely solely on conventional technical skills but also needs to expand adaptive capacity, creativity, and career readiness aligned with labor market dynamics.

This condition is in line with the situation identified at SMK Saraswati 1 Denpasar. Based on preliminary interviews with the school principal and entrepreneurship teachers, it is known that students' career orientation was predominantly directed toward formal employment after graduation, and entrepreneurial intention was limited. Among 51 grade-12 students enrolled in the entrepreneurship subject, only five reported owning or intending to start a business after graduation. When graduates are not immediately absorbed into the workforce, this employment-only orientation may increase the risk of prolonged job-search periods and unemployment due to limited readiness to pursue self-employment as an alternative pathway (Suhendro et al., 2025). Therefore, an intervention is needed to strengthen entrepreneurship literacy in a form that is practical, easy to adopt by students, and relevant to their vocational competencies. The target group of this community service program comprised

grade-12 students from the Accounting, Digital Business, and Office Administration majors because they were approaching graduation and were already taking entrepreneurship-related coursework, allowing the program to be integrated with school learning and followed up through classroom activities (Putri, et al., 2025).

Entrepreneurship is not merely a career option but a productive strategy that enables individuals to create value, build economic independence, and contribute to local economic development (Syamlan et al., 2024; Widiastuti et al., 2023). In the context of the digital economy, technopreneurship has become increasingly relevant because it leverages technology as a key driver for product, service, or process innovation (Arianto et al., 2025; Rafiana, 2023). For vocational students, developing technopreneurship is particularly important because it connects technical competencies with market opportunities and encourages students to design solutions that deliver value through digital technology (Kaparang et al., 2024). However, conceptual understanding alone is insufficient; students also need a structured way to translate ideas into coherent business models (Suhendro & Putri, 2025).

A crucial initial step in starting a business is designing a business model that describes how a business creates, delivers, and captures value (Kittichotsatsawat et al., 2024; Manning & Renzi, 2024; Pepin et al., 2024). The BMC offers a concise but comprehensive tool to map core elements of a business, including customer segments, value propositions, channels, customer relationships, revenue streams, key resources, key activities, key partnerships, and cost structure (Hernawan et al., 2024). Compared with a traditional business plan—often lengthy and less accessible for beginners—the BMC is more visual and practice-oriented, making it suitable for short workshops and vocational learning contexts. Other approaches such as motivational seminars may raise interest but often lack structured output, while mentoring programs without a planning framework may produce inconsistent results. Evidence from community service initiatives also indicates that tool-based and hands-on training is effective for improving practical skills through applied learning and guided feedback (Alam et al., 2025; Kusuma et al., 2025; Suhendro et al., 2025).

To improve the quality and speed of business ideation during BMC development, this program integrates BMC practice with Generative AI (ChatGPT) as a learning support tool. ChatGPT can assist students in brainstorming alternative value propositions, identifying potential customer segments, suggesting channels and partnerships, and checking basic logical consistency across BMC blocks. Nevertheless, AI outputs should not be adopted uncritically; students must be guided to evaluate relevance, adjust to context, and ensure coherence in their business logic (Murwanto & Triayomi, 2025; Triayomi & Murwanto, 2025). The novelty of this program lies in combining step-by-step BMC instruction with AI-assisted ideation and refinement within a structured workshop format for vocational students, producing a tangible planning artifact (BMC) while simultaneously fostering practical AI literacy.

Based on this background, the program aimed to strengthen students' entrepreneurship and technopreneurship capacity at SMK Saraswati 1 Denpasar through a BMC-based business model workshop enriched with Generative AI (ChatGPT). Operationally, the program sought to: (1) improve students' understanding of entrepreneurship and technopreneurship concepts, including the ability to differentiate and provide examples; (2) develop students' ability to produce complete and coherent BMC outputs; and (3) improve students' practical AI literacy in using ChatGPT to support ideation and refinement of BMC components. In the medium term, strengthening these capacities is expected to broaden graduates' career options and reduce vulnerability to post-graduation unemployment by enabling students to explore feasible business creation pathways in the digital economy.

2. METHOD

This community service program was conducted at SMK Saraswati 1 Denpasar on 4 September 2025. The participants were 51 grade-12 students from the Accounting, Digital Business, and Office Administration majors who were enrolled in the entrepreneurship subject. Students were organized into 10 groups during the workshop. The implementation consisted of four stages: problem identification, needs analysis, activity implementation, and evaluation, as illustrated in Figure 1.

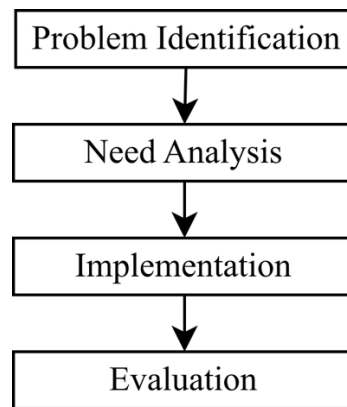


Figure 1 The Community Service Activity Stages

The initial stage of this implementation method was problem identification to ensure that the intervention matched students' needs and the school context. Semi-structured interviews were carried out with the school principal and entrepreneurship teachers to obtain an overview of students' career orientation and entrepreneurship readiness. Information from this stage was used as the basis for designing an intervention that was feasible to implement and relevant to students' vocational competencies.

Based on the interviews, a needs analysis was conducted to identify gaps that may limit students' readiness for post-graduation career pathways. The findings suggested that students needed: (1) clearer literacy on entrepreneurship and technopreneurship to broaden career choices beyond formal employment; (2) a structured, step-by-step approach to develop an initial business plan through business model formulation; and (3) guided integration of digital tools that can improve productivity in planning activities, particularly Generative AI (ChatGPT) for idea generation and iterative refinement. These needs guided the design of the program, which operationalized business model development using the Business Model Canvas (BMC) and integrated AI support during the practice session.

Activity implementation included three main steps: concept socialization, hands-on practice in creating and refining a BMC with AI assistance, and group presentation and feedback. The workshop consisted of three sessions:

- a. Session 1 : Concept socialization
A speaker delivered material on entrepreneurship and technopreneurship, including definitions, key differences, and contextual examples relevant to vocational students.
- b. Session 2 : Business model development using BMC integrated with ChatGPT
Students developed an initial business model in groups using the Business Model Canvas (BMC) as the selected planning framework. The speaker guided students step-by-step in completing the nine BMC blocks. Facilitators accompanied each group, provided support when students encountered difficulties or made incorrect entries, and recorded structured observation notes. During this session, ChatGPT was used to support ideation and refinement of business model elements, such as generating alternative value propositions, identifying customer segments, suggesting channels and partnerships, and checking basic logical consistency across blocks. Students were instructed to evaluate AI outputs critically and adapt them to their specific context rather than adopting suggestions verbatim.
- c. Session 3 : Group presentations and feedback
Each group presented its BMC output. The speaker provided feedback on conceptual accuracy and coherence across the nine BMC blocks, while facilitators continued observation to support evaluation.

The program employed a descriptive evaluation using a pre-post concept quiz, a BMC rubric applied to group outputs, and structured observations recorded during practice and presentations. The evaluation framework and indicators are presented in Table 1. Quantitative results were summarized descriptively (counts and percentages). Qualitative observation notes were summarized to identify recurring patterns of strengths and common errors (e.g., misconceptions in specific BMC blocks and patterns of AI prompt use). Findings from the quiz, rubric, and observations were compared to provide a triangulated description of learning outcomes and areas requiring improvement.

Table 1. The Community Service Evaluation Method

Evaluation domain	Indicators	Measurement tools & data collection
Conceptual understanding(entrepreneur vs technopreneur)	Students can (a) define entrepreneur and technopreneur, (b) state at least one key difference, and (c) provide at least one relevant example of each	Pre–post concept quiz (non-graded verbal Q&A) at the start and end of Session 1; facilitator notes on correct terminology use during discussion
Business model planning competence(BMC output quality)	Group produces a BMC with all 9 blocks completed and coherent logic across blocks (e.g., Value Proposition aligned with Customer Segments; Channels distinct from Customer Relationships)	BMC rubric applied to final group BMC; presentation reviewby speaker
AI literacy for ideation and refinement	Students use ChatGPT to support ideation/refinement and demonstrate improvement in prompt specificity (target user, context, constraints, expected output), while critically evaluating AI output	Structured observation & facilitator notes during Session 2; documentation of example prompts/outputs integrated into BMC

3. RESULTS AND DISCUSSION

The community service activity began with interviews with the principal and entrepreneurship teachers at SMK Saraswati 1 Denpasar to identify problems and analyze school needs. The interviews indicated that most students were oriented toward seeking formal employment after graduation rather than creating a business, despite possessing vocational skills that could be developed into business opportunities. This baseline condition informed the design of a workshop intervention titled “Workshop on the Application of the Business Model Canvas (BMC) Assisted by Artificial Intelligence (AI) to Enhance Technopreneurial Spirit among Students of SMK Saraswati 1 Denpasar.” The activity was conducted on 4 September 2025, involving 51 grade-12 students from the Accounting, Digital Business, and Office Administration majors. The implementation consisted of three stages: technopreneurship concept socialization, BMC practice integrated with ChatGPT, and group presentations with feedback. A descriptive summary of key outcomes is provided in Table 2.

Table 2 Summary of Program's Evaluation (n=51; 10 groups)

Outcome domain	Indicator	Pre-Implementation Result	Post-Implementation Result
Conceptual understanding (entrepreneur vs technopreneur)	Students can (a) define entrepreneur and technopreneur, (b) state ≥ 1 key difference, and (c) provide ≥ 1 relevant example of each	3.92%	100%
Business model planning competence (BMC output quality)	Group produces a BMC with all 9 blocks completed and coherent logic across blocks (e.g., Value Proposition aligned with Customer Segments; Channels distinct from Customer Relationships)	Not applicable	Completion: 100%; Coherence issues identified: Value Proposition 30%; Customer Relationships vs Channels 40%
AI literacy for ideation and refinement	Students use ChatGPT to support ideation/refinement and show improved prompt specificity (target user, context, constraints, expected output) while critically evaluating AI output	Not applicable	Prompt improvement observed: 80%; AI outputs were selectively integrated into BMC refinement (Observed prompt/output excerpts)

The first stage (Figure 2) focused on concept socialization delivered by the speaker. The session introduced entrepreneurship and technopreneurship, emphasizing key differences and examples relevant

to vocational students and the digital economy (Kaparang et al., 2024). Conceptual understanding was evaluated using the pre–post concept quiz indicator in Table 1. Before the session, only 3.92% of students demonstrated adequate technopreneurship understanding (ability to define, differentiate from entrepreneurship, and provide examples). After the session, this increased to 100%, indicating that all participants met the conceptual indicator (Table 2).



Figure 2. Technopreneurship Socialization Stage

The second stage (Figure 3) was the core practice session. Students were divided into 10 groups and developed an initial business model using the BMC. The speaker guided the completion of the nine BMC blocks step-by-step. Facilitators accompanied each group, supported students when they encountered difficulties or made incorrect entries, and recorded structured observation notes. During practice, ChatGPT was used as an ideation and refinement aid (e.g., generating alternative value propositions, identifying customer segments, suggesting channels and partnerships, and checking basic logical consistency across blocks). Students were instructed to evaluate AI outputs critically and adapt them to their context rather than adopting suggestions verbatim (Murwanto & Triayomi, 2025; Triayomi & Murwanto, 2025).



Figure 3. BMC Practice Integrated With AI Utilization

Based on the BMC competence indicator in Table 1, all groups completed all nine BMC blocks (100% completion, Table 2). However, the rubric review identified recurring coherence issues in two blocks. Value Proposition required improvement in 30% of groups because it was written as a product list rather than a clear statement of value/benefit or differentiation. In addition, 40% of groups confused Customer Relationships with Channels by repeating platforms (e.g., Instagram/WhatsApp) instead of specifying retention strategies (e.g., membership points, discounts, member-get-member referral) (Table 2). These patterns show that the workshop successfully enabled structured completion of the BMC while highlighting the blocks that require additional guided examples and revision cycles.

Using the AI literacy indicator in Table 1, facilitators observed an improvement in prompt specificity in 80% of groups (Table 2). Early prompts were generic (e.g., “business ideas for students”), but with guidance they became more contextual (target user, context, constraints, and expected output). Evidence of AI integration is illustrated through the observed prompt/output excerpts, as shown in Table 3.

Table 3 Observed Prompt/Output Excerpts and Their Use in BMC Refinement

Observed excerpt	Purpose	Prompt	Output (excerpt)	Use in BMC
Excerpt 1	Value Proposition refinement	“Suggest three unique value propositions for a digital bookkeeping service targeting MSMEs in Denpasar. Provide concise bullet points.”	Fast transaction logging; simple profit–loss summary; reminders for receivables/payables.	The group translated the output into a clearer value proposition beyond naming the service only.
Excerpt 2	Customer Relationships clarification	“We already wrote Channels: Instagram and WhatsApp. What should we write for Customer Relationships? Give 5 examples suitable for a student-focused business.”	Membership points; repeat discount; referral/member-get-member; follow-up message; community group.	The group revised Customer Relationships from channels toward retention strategies.

In the final stage (Figure 4), each group presented its completed BMC. The speaker provided feedback on conceptual accuracy and coherence across the nine BMC blocks, while facilitators continued observation to support evaluation. Presentation review confirmed that groups were generally able to explain their business logic and justify key elements. Feedback most frequently addressed: (1) strengthening value proposition statements so they emphasize benefits/differentiation, and (2) distinguishing customer relationship strategies from communication channels. These feedback themes were consistent with the rubric patterns summarized in Table 2.



Figure 4 BMC Group Presentation

The findings demonstrate the practical value of integrating BMC-based planning with AI-assisted ideation for vocational students. First, the increase in technopreneurship understanding from 3.92% to 100% suggests that concept socialization with contextual examples is effective for SMK learners, who typically benefit from applied and concrete learning approaches (Pepin et al., 2024). The outcome also supports the program objective of broadening career literacy beyond formal employment.

Second, the BMC functioned as a structured scaffold that enabled students to translate entrepreneurial concepts into a tangible planning artifact. The 100% completion rate indicates that BMC is suitable for short, practice-oriented workshops. At the same time, the coherence issues found in Value Proposition (30%) and Customer Relationships (40%) show that novice learners need additional support to articulate differentiation and retention strategies rather than listing products or platforms. This implies that future workshops should allocate more time to these blocks, including worked examples and guided revision cycles based on rubric feedback.

Third, the AI literacy result (prompt improvement in 80% of groups) indicates that ChatGPT can support productivity in ideation and refinement when accompanied by structured guidance and critical evaluation. The observed excerpts suggest that AI use was most beneficial when prompts were specific and outputs were adapted into the BMC logically, reinforcing that AI should function as a learning support tool rather than an automatic decision-maker (Murwanto & Triayomi, 2025; Triayomi & Murwanto, 2025).

The workshop duration limited deeper activities such as market validation and prototyping. Variation in device capability and internet access may have influenced the quality of AI interaction. The evaluation captured short-term outcomes without follow-up on whether students continued developing their ideas after the workshop, and group work may mask individual learning differences. Despite these limitations, the program provides a feasible model for schools: integrating technopreneurship concept learning with BMC practice, adding prompt templates and ethical AI guidance, and extending the intervention with mentoring sessions to move from BMC to pitch, prototype, and initial market testing.

4. CONCLUSION

This community service program successfully strengthened technopreneurship readiness among grade-12 students at SMK Saraswati 1 Denpasar through an integrated workshop that combined technopreneurship socialization, Business Model Canvas (BMC) development, and AI-assisted ideation using ChatGPT. The results showed substantial improvements in students' conceptual understanding, structured business planning skills, and practical AI literacy, as reflected in the full completion of BMC outputs and more targeted use of AI for idea refinement, although specific components such as Value Proposition and Customer Relationships still require further reinforcement. Despite limitations related to program duration, infrastructure variability, and the absence of long-term follow-up, the findings indicate that integrating structured business tools with guided AI utilization offers a feasible and replicable approach to enhancing digital entrepreneurship competencies in vocational education, with potential for further strengthening through sustained mentoring and curriculum integration.

REFERENCES

- Alam, H. S., Putri, N. W. N. S. T., Widiarti, N. P. A. N., Diatmika, I. W. D. A., Dahana, I. K. W. B., & Agasthya, I. G. N. A. B. (2025). Penggunaan Figma dalam Meningkatkan Kreativitas Siswa Siswa Menengah Kejuruan Rekayasa. *Empowerment*, 8(01), 96–104. <https://doi.org/10.25134/empowerment.v8i01.11712>
- Arianto, A., Choirunnisa, C., Setiawan, H., & Rahmawati, A. (2025). Sosialisasi Pemanfaatan Teknologi Digital Dalam Mengoptimalkan Penjualan Pada UMKM. *Lamahu: Jurnal Pengabdian Masyarakat Terintegrasi*, 4(1), 37–42. <https://doi.org/10.37905/ljpm.v4i1.29576>
- BPS. (2024a, July 18). *Tingkat Pengangguran Terbuka Berdasarkan Tingkat Pendidikan*. Bps.Go.Id. <https://www.bps.go.id/id/statistics-table/2/MTE3OSMy/unemployment-rate-by-education-level.html>
- BPS. (2024b, November 6). *Tingkat Pengangguran Terbuka Menurut Provinsi (Persen), 2024*. Bps.Go.Id. <https://www.bps.go.id/id/statistics-table/2/NTQzIzI=/unemployment-rate-by-province.html>
- Hernawan, A., Savandha, S. D., Karsa, A. H. A. N., Asikin, M. Z., & Fadilah, M. O. (2024). Application of Business Model Canvas in MSMEs in Karangwuni Village. *International Journal of Social Service and Research*, 4(03), 912–917. <https://doi.org/10.46799/ijssr.v4i03.747>
- Kaparang, S. X., Nugroho, A. K., & Jayati, A. E. (2024). Peran Technopreneur dalam Pengembangan Usaha Digital di Indonesia. *Jurnal Sosial Dan Teknologi (SOSTECH)*, 4(8), 526–536.
- Kittichotsatsawat, Y., Rauch, E., & Tippayawong, K. Y. (2024). Designing sustainability measurement of a Thai coffee supply chain using axiomatic design and business model canvas. *Results in Engineering*, 24(2024), 103443. <https://doi.org/10.1016/j.rineng.2024.103443>
- Kusuma, N. P. N., Putri, N. W. N. S. T., & Suhendro, J. M. (2025). Literasi digital berbasis AI: program peningkatan keterampilan teknologi untuk siswa SMAN 6 Denpasar. *SELAPARANG: Jurnal Pengabdian Masyarakat Berkemajuan*, 9(3), 1307–1315. <https://doi.org/10.31764/JPMB.V9I3.30726>

- Manning, M. Lou, & Renzi, J. (2024). The Business Model Canvas: A Tool to Enhance Nurse Business Acumen. *Nurse Leader*, 22(3), 303–307. <https://doi.org/10.1016/j.mnl.2023.10.003>
- Murwanto, P., & Triayomi, R. (2025). Penggunaan GenAI terhadap Kemampuan Berpikir Kritis Mahasiswa PGSD. *Ideguru: Jurnal Karya Ilmiah Guru*, 10(2), 1648–1656. <https://doi.org/10.51169/ideguru.v10i2.1896>
- Pepin, M., Tremblay, M., Audebrand, L. K., & Chassé, S. (2024). The responsible business model canvas: designing and assessing a sustainable business modeling tool for students and start-up entrepreneurs. *International Journal of Sustainability in Higher Education*, 25(3), 514–538. <https://doi.org/10.1108/IJSHE-01-2023-0008>
- Putri, N. W. N. S. T., Suhendro, J. M., & Kusuma, N. P. N. (2025). Penerapan Business Model Canvas untuk Meningkatkan Jiwa Technopreneurship di Kalangan Siswa SMK. *Jurnal Pengabdian Kepada Masyarakat Abdi Putra*, 5(2), 205–211. <https://doi.org/10.52005/9xb16y75>
- Rafiana, N. N. (2023). Technopreneurship Strategy to Grow Entrepreneurship Career Options for Students in Higher Education. *ADI Journal on Recent Innovation (AJRI)*, 5(2), 110–126. <https://doi.org/10.34306/ajri.v5i2.995>
- Suhendro, J. M., & Putri, N. W. N. S. T. (2025). Peningkatan Kompetensi Technopreneurship Melalui Penerapan Business Model Canvas pada Siswa SMK Negeri 1 Mengwi. *NUSANTARA Jurnal Pengabdian Kepada Masyarakat*, 5(2), 61–73. <https://doi.org/10.55606/nusantara.v5i2.4405>
- Suhendro, J. M., Putri, N. W. N. S. T., & Kusuma, N. P. N. (2025). Pengembangan potensi siswa SMK Pandawa Bali Global sebagai technopreneur muda dengan pendekatan Business Model Canvas (BMC). *SELAPARANG: Jurnal Pengabdian Masyarakat Berkemajuan*, 9(3), 1675–1685. <https://journal.ummat.ac.id/index.php/jpmb/article/view/30825>
- Syamlan, A. F., Suharto, S., Rusdiyanto, R., Hasanah, A., Ulum, B., & Tuharea, F. I. (2024). Pembinaan Potensi Wirausaha Dalam Pengelolaan Usaha Angringan. *Lamahu: Jurnal Pengabdian Masyarakat Terintegrasi*, 3(1), 30–38. <https://doi.org/10.37905/ljpm.v3i1.24233>
- Triayomi, R., & Murwanto, P. (2025). Pemanfaatan Generative AI untuk Mahasiswa PGSD: Analisis Kuantitatif-Deskriptif Gaya Belajar. *Jurnal Ilmiah Multi Sciences*, 17(2), 85–94. <https://doi.org/10.30599/pjjy48>
- Widiastuti, C. T., Universari, N., & N.S.S, Rr. L. P. (2023). Pemberdayaan Melalui Edukasi Kewirausahaan Dan Pembukuan Keuangan Bagi UKM Gerai Kopimi Kelurahan Mlatiharjo Semarang. *Lamahu: Jurnal Pengabdian Masyarakat Terintegrasi*, 2(1), 1–10. <https://doi.org/10.34312/ljpm.v2i1.17071>