



ENHANCING SERVICE PERFORMANCE OF MICRO NOODLE SMES THROUGH KNOWLEDGE SHARING AND DIGITALIZATION INITIATIVES IN KUALA LUMPUR MALAYSIA

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Abstract

The Community Service International (CSI) program is a form of cross-border community service that aims to increase the capacity of MSMEs through a *knowledge sharing* and service digitization approach. This activity was carried out at one of the noodle-based culinary MSMEs in Malaysia which is still facing operational and technological constraints, such as the unavailability of QR codes for menus and orders, uncomfortable space layouts, the absence of a cash register so that transaction recording is still done manually, and an inefficient ordering flow because it uses a writing method on paper. Different from academic research that emphasizes theoretical analysis, PKM activities focus on solving real problems through socialization, technical direction, mentoring, and the creation of direct solutions that can be implemented by MSMEs. The results of the activity showed an increase in operational efficiency through the implementation of QR codes, the use of digital cashier applications, the improvement of business layouts, the preparation of simple SOPs, and an understanding of digital marketing. These findings show that knowledge-sharing-based Community Service International can be an effective approach in empowering culinary MSMEs in Malaysia to face modernization and digitalization challenges.

Keywords: Community Service, Noodle MSMEs, Digitalization, *QR Code*, Business Assistance.

INTRODUCTION

MSMEs have a significant contribution to the national economy, both in Indonesia and Malaysia, especially in the culinary sector which continues to grow in response to the increasing need for fast and affordable food (Mohamad et al., 2022). In Malaysia, culinary MSMEs are an important part of the local economic structure because they play a role in creating jobs, encouraging entrepreneurship, and supporting the family economy (Madanchian et al., 2016). However, other studies show that micro-scale culinary MSMEs still face serious challenges related to service quality, operational efficiency, and *Digital Readiness* (Mohamad et al., 2022). Therefore, interventions in the form of mentoring and community service are needed to strengthen the capacity of MSMEs directly and practically.

Activities *Community Service International* (CSI) as a form *Service Learning* cross-country program provides opportunities for students to be directly involved in empowering MSMEs through the implementation of practical solutions, not just theoretical analysis (Celio et al., 2011). This activity not only aims to introduce modern business practices, but also helps MSMEs understand digital trends that are increasingly important in the culinary sector. In contrast to academic research that aims to produce scientific and theoretical findings, PKM activities focus on solving real problems faced by partners directly through an approach *Knowledge Sharing*, socialization, and technical assistance. In the context of the CPM, the approach used emphasizes *Knowledge Sharing*, socialization, and technical assistance to overcome real problems faced by partners (Efficiency & Village, 2025).

Figure 1. International Community Service Team

Noodle-based MSMEs that are CSI's partners still rely on traditional operational methods,



such as manual ordering and paper recording, thus triggering long queues, input errors, and irregularities in service flows. These findings are in line with research (Mohamad et al., 2022) which states that the low level of digitalization in culinary MSMEs causes operational inefficiencies and suboptimal service quality. Other research has also shown that manual ordering increases the risk *Human Error* and slowing down the service process (Jubaidi & Kartini, 2025), while *Layout* Unergonomic businesses have an impact on customer comfort and employee productivity (Gunawan, 2022).

The absence of cash registers and manual transaction recording risks causing errors and making it difficult for MSME owners to monitor daily cash flow. This condition is common in micro MSMEs in Malaysia and other developing countries (Mohamad et al., 2022). On the other hand, the digital marketing ability of MSMEs is still low due to the lack of understanding of social media-based promotion techniques, so practical and applicative assistance is needed so that MSMEs are able to utilize technology optimally (Riyanto et al., 2022). This problem shows that MSMEs need assistance

that is not only theoretical, but also applicable and directly touches the root of operational problems.

Answering these problems, the approach *Knowledge Sharing* is used as the main method in this PKM. This concept is adapted from the successful practices of modern culinary brands such as Mie Gacoan which is known for its kitchen efficiency, digitization of orders, and effective digital marketing strategies (Pirmansyah et al., 2025). The implementation of QR Code-based ordering applications is able to increase service speed, reduce ordering errors, and provide a more practical and satisfying experience for café and restaurant customers (Veronika & Pratiwi, 2025). These principles are then simplified and adjusted to the capacity of partner MSMEs so that they remain relevant and can be applied without requiring large costs. *Knowledge sharing* proven to be able to facilitate the transfer of knowledge from more advanced business models to small MSMEs through training, direction, and hands-on practical examples.

This Community Service (CSI) activity aims to increase the operational capacity of MSMEs through the use of simple technology such as QR codes and digital cashier applications, improve business layouts to be more efficient, build basic SOPs to ensure service quality standards, and improve MSME digital marketing capabilities. With this approach, CSI's activities not only help MSMEs solve short-term problems, but also build a foundation for long-term business growth. Overall, this introduction confirms that culinary MSMEs in Malaysia need planned interventions to improve their readiness for the challenges of the digital age. The CSI program through PKM activities is a tangible manifestation of the contribution of academics in helping MSMEs to be able to transform towards a more modern, efficient, and highly competitive operational system. Thus, this activity is expected to have a sustainable impact on partner MSMEs and other small business communities.

IMPLEMENTATION METHOD

The implementation methods carried out by Community Service Activities (CSI) are as follows:

1. **Approach and Design of Activities.** This Community Service (PKM) activity uses a Community Service International (CSI) approach based on service learning and cross-border knowledge sharing. The servicelearning approach was chosen because it allows students and lecturers to be directly involved in solving real problems of MSME partners through practical experience that is integrated with academic learning (Celio et al., 2011). The knowledge sharing approach is used as the main strategy to transfer best practices from modern culinary business models to micro-scale MSMEs in an applicative and low-cost manner (Efficiency & Village, 2025; Pirmansyah et al., 2025). This PKM model is problem solving oriented, not hypothesis testing, so it focuses on direct improvements to the operational and managerial aspects of MSMEs (Mohamad et al., 2022).
2. **Partners and Activity Locations.** PKM Partners are micro-scale noodle-based culinary MSMEs in Malaysia that are still implementing a traditional operational system. The selection of partners is

based on the findings that micro-culinary MSMEs in Malaysia generally face limitations in digitalization, service quality, and operational efficiency (Madanchian et al., 2016; Mohamad et al., 2022).

3. Stages of Implementation of Activities. The implementation of PKM is carried out through four main stages as follows:

- a. Problem Identification and Analysis. The initial stage was carried out through direct observation, informal interviews, and mapping of MSME business processes. The focus of the analysis includes the ordering system, transaction recording, business layout, and marketing strategy. This approach is in line with the findings of Mohamad et al. (2022) which emphasize the importance of early diagnosis to identify sources of inefficiency in culinary MSMEs.
- b. Solution Design and Knowledge Sharing. Based on the results of the analysis, the CSI team designed a solution that adapts the operational efficiency and digitalization practices of modern culinary brands. These principles are then simplified to suit the capacity of partner MSMEs (Pirmansyah et al., 2025). Knowledge sharing is carried out through discussions, demonstrations, and hands-on practice examples, as this method has proven to be effective in increasing MSMEs' understanding and readiness for operational changes (Efficiency & Village, 2025).
- c. Implementation and Technical Assistance. The implementation stage includes:
 - The implementation of a QR Code-based ordering system,
 - The use of a simple digital cashier application,
 - Rearranging the layout of the business,
 - Preparation of basic service SOPs,
 - Digital marketing assistance through social media.

The implementation of QR Codes and digital cashiers was chosen because it has been proven to be able to increase service speed, reduce ordering errors, and improve customer experience in culinary businesses (Veronika & Pratiwi, 2025; Jubaidi & Kartini, 2025). Improvements in business layouts are carried out to improve ergonomics and work productivity (Gunawan, 2022).

- d. Evaluation and Reflection. Evaluation of activities was carried out qualitatively through observation before and after interventions, partner interviews, and reflective discussions. The evaluation is focused on changes in operational efficiency, order of service flows, and improving the digital literacy of partners. This reflective approach is an important part of service learning to strengthen experiential learning (Celio et al., 2011).
4. Success Indicators. The success of PKM activities is measured through:
- a) The ability of MSMEs to operate digital systems independently.
 - b) Reduced booking errors and transaction logging.

- c) Increased service speed.
- d) The preparation of basic service SOPs.
- e) Increased understanding of digital marketing.

These indicators are in line with the criteria for MSME capacity building suggested in the small business development literature (Mohamad et al., 2022; Riyanto et al., 2022).

IMPLEMENTATION ACTIVITIES

The implementation of Community Service (PKM) activities in *the Community Service International* (CSI) program uses a *participatory community engagement approach*, which involves partner MSMEs actively in the entire activity process. This method was chosen because it is in accordance with the characteristics of micro-culinary MSMEs that require direct assistance, applicative solutions, and a problem-solving process that is not complicated but impactful. The activity is carried out through several systematic stages as follows:

1. Program Preparation and Coordination Stage. The initial stage of PKM begins with internal group coordination to prepare a work plan, division of tasks, and determination of program focus. The team also conducted initial communication with noodle MSME owners to get an overview of business conditions, challenges faced, and expectations for CSI activities. At this stage, the group studied references related to the digitalization of MSMEs, simple service governance, and modern operational practices as applied by major brands including Mie Gacoan. The preparation stage ensures that the team has sufficient initial understanding before conducting the field assessment.



Figure 3. International Community Service Partner of Noodles Kuala Lumpur

2. *Field Observation and Needs Assessment*. Field observations are carried out directly at partner MSME locations to identify factual problems that occur in daily operations. Observation activities include:

- a) Observe the order flow from incoming customers to receiving orders;
- b) assessing the comfort and effectiveness of the business space layout;
- c) Checking the presentation procedures and taste standards of the product;
- d) Evaluate the way transactions are recorded and financial management;
- e) review the existence of technological media such as qr codes, order barcodes, or cashier applications;
- f) Understand the digital literacy level of owners and employees.

The findings show several main problems faced in *Community Service International* (CSI) activities:

- a) There is no QR code for menus or orders, so all transactions rely on a manual writing process;
- b) The layout of the room is uncomfortable and does not support the flow of employee movement;
- c) There is no cash register and recording is done with books/paper;
- d) Digital marketing has not been done strategically.

This needs analysis is the basis for determining the form of PKM intervention in a targeted manner.



Figure 4. Javanese Noodle Shop where production is made

3. *Knowledge Sharing-Based Socialization and Education* . After the problems were analyzed, the group provided socialization to MSME owners about the basic concepts of business modernization

that are relevant for the micro scale. The material is delivered through simple discussions and presentations that are easy to understand, including:

- a) the importance of digitizing services in increasing efficiency;
- b) the role of QR codes in speeding up the ordering process and reducing input errors;
- c) Ergonomic layout for small culinary businesses;
- d) Benefits of Digital Cashier (Pos) Applications in Financial Recordkeeping;
- e) Digital Marketing techniques through product photos, *captions*, and simple promotions.

This stage is important to provide an initial understanding to MSME owners, so that the solutions provided are not only understood but also accepted with an awareness of the benefits.

4. Simple Solution Design and Implementation. At this stage, the team designs and implements solutions tailored to the needs of MSMEs. Activities include:
 - a. Menu and Ordering QR Code Creation. The team compiled a digital menu, created a QR code, and made sure it was easy for customers to use. QR codes are printed and placed at strategic points.



Figure 5. QR Noodle Menu Ordering

Business Layout Rearrangement. The team provides new layout recommendations based on the principles of efficient workflow (*lean layout*), including cashier placement, customer waiting locations, and serving areas.



Figure 6. Input Noodle Shop operational layout



Figure 7. Layout of the Noodle Shop dining and wastapel

- b. Introduction to the Digital Cashier Application. The team chose a POS application that is easy for MSME owners to use, providing training on installation, use, and how to read transaction reports.

- c. Basic Digital Marketing Training. The team helps owners create product photos, design simple content, and learn about digital platforms like TikTok and Instagram.

The solutions provided are *low-cost – high-impact*, so that they can be applied by MSMEs without a large investment burden.

5. Implementation Assistance in the Field. Mentoring is not only in the form of material, but includes hands-on practice, such as:
 - a) Conducting an order simulation using QR Codes;
 - b) guide the owner in recording transactions through the cashier application;
 - c) Help rearrange the position of tables, chairs, and equipment;
 - d) trying new service lines to ensure convenience;
 - e) Conducting service and production SOP trials.

Mentoring is carried out collaboratively so that MSME owners feel involved and are able to continue the practice independently.

6. Monitoring, Evaluation, and Reflection of CSI Activities. The final stage is carried out to assess the extent to which the implementation has been successful. Evaluations include:
 - a) changes in service times before and after digitization;
 - b) Smooth Flow of Orders;
 - c) Owner's understanding of the cashier application;
 - d) the level of utilization of the QR Code;
 - e) improved customer comfort through new layouts;
 - f) The effectiveness of the SOP that is prepared.

The team also conducts internal reflection to identify successes, challenges, and follow-up recommendations that can be used as a reference for the next PKM activities.

RESULTS AND DISCUSSION

The implementation of Community Service (PKM) activities in *the Community Service International* (CSI) program has a significant impact on increasing the operational capacity of noodle MSMEs in Malaysia. The results of the activity are presented in two major parts: (1) the results of observation and identification of problems before intervention, and (2) changes and development of MSMEs after the assistance and implementation of solutions. This discussion follows the pattern of PKM that is commonly used in community service journals, namely emphasizing real change, applicative solutions, and partner capacity building.

MSME Conditions Before PKM Activities: Identifying Problems and Challenges. The results of initial observations show that partner MSMEs face various fundamental problems that have a direct impact on service quality, customer comfort, and operational efficiency. These problems include:

1. Absence of QR Codes for Menus and Orders. MSMEs still use the traditional method, where customers have to manually write orders on paper. This causes:
 - a) Long Queues During Crowds,
 - b) Order Input Error,
 - c) delays in food processing,
 - d) An uncomfortable customer experience.The absence of QR codes also makes it difficult for MSMEs to compete with modern businesses that have implemented digitalization.
2. *Less Comfortable and Unergonomic Space Layout*. The arrangement of the MSME space has not supported an efficient workflow. The arrangement of tables, chairs, and kitchen utensils does not consider the movement of employees or customers. Impact:
 - a) Employees often collide when preparing orders,
 - b) The cashier area becomes a point of accumulation of customers,
 - c) Customers are confused about determining the point of ordering and pick-up of food,
 - d) The service process becomes slower.
3. Transaction Recording is Still Manual and There is No Cashier Machine. Manual note-taking using a notebook increases the risk:
 - a) Calculation errors,
 - b) Loss of Transaction Data,
 - c) difficulty monitoring daily income,
 - d) Inability to perform simple analyses such as best-selling menus or rush hour.
4. Lack of Digital Marketing. MSME owners have not made optimal use of social media. As a result, market reach is limited to nearby customers despite the potential for market expansion through digital platforms is considerable.

Overall, the initial condition of MSMEs shows that most of the problems are technical and operational and can be fixed through simple solutions that do not require large costs. Implementation of PKM Solutions and the Changes That Occurred After the needs assessment was carried out, the CSI group began to implement various interventions according to the conditions of MSMEs. The solutions provided include digitalization, layout improvement, SOPs, and digital marketing training. Changes after the intervention are described as follows:

1. Digitize Orders Through QR Codes. The group created a QR code containing a digital menu and a simple ordering system. The installation of QR codes is carried out at several strategic points such as:
 - a) Customer Desk,
 - b) Entrance,
 - c) Near the Cashier Area,
 - d) Promotional media pasted on the wall.

Impact of QR code implementation:

- a) Customers can view the menu without waiting for the menu book.
 - b) The ordering process becomes faster and fewer errors.
 - c) Queue time is significantly reduced.
 - d) MSMEs look more modern and professional.
 - e) Owners understand how to update digital menus independently.
2. Use of Digital Cashier Application (POS System). The team introduced and trained business owners using a free digital cashier application. Owners are taught how to:
- a) Entering the menu,
 - b) Record Transactions,
 - c) View the Daily Sales Report,
 - d) Export Sales Data.

Changes that occur:

- a) Transaction recording is neater and more accurate.
 - b) Calculation errors are greatly reduced.
 - c) MSME owners can find out their total revenue in real time.
 - d) MSMEs are beginning to understand the importance of digital financial record-keeping.
3. Business *Layout* Improvement . The business layout is rearranged based on *the principle of lean service*, which is to reduce obstacles to the movement of employees and customers. The group provides written and visual recommendations in the form of new layout schemes. Impact of layout improvements:
- a) The customer's entry and exit path becomes clearer.
 - b) Employees are more free to move when preparing orders.
 - c) Queue points can be better controlled.
 - d) The space looks neater and more comfortable.
4. Digital Marketing Training. Digital marketing education is provided through hands-on practice how to:
- a) Take interesting product photos,
 - b) Create Informative Captions,
 - c) Choose the right upload time,
 - d) Utilizing Tiktok and Instagram for promotion,
 - e) Using hashtags as an outreach strategy.

Digital marketing impact:

- a) MSMEs have started posting promotional content.
- b) Owners' awareness of branding is increasing.
- c) New customers are starting to arrive from social media.

The Relevance of CSI Assistance to the Needs of MSMEs. The results of the activity show that the *knowledge sharing approach* is very relevant for culinary MSMEs that are adapting to technological developments. Adaptations of Mie Gacoan's concepts such as fast service, the use of QR, and efficient kitchen flows can be implemented simply without changing the identity of partner MSMEs. Some important points in the discussion:

1. Digitization doesn't have to be expensive. QR codes and free cashier applications have been able to increase operational efficiency.
2. The layout affects the speed of service and customer convenience. Small changes in the arrangement of equipment have a significant impact.
3. The PKM approach is more effective than academic research for rapid change. PKM focuses on *action* and *implementation*, not analysis alone.
4. Digital marketing is a necessity, not a choice. With simple content, MSMEs can significantly increase visibility.

CONCLUSION

Community Service activities through *the Community Service International (CSI)* program carried out on noodle business MSMEs in Malaysia have succeeded in providing real changes in the operational aspects, digitalization, and governance of partner businesses. Through a *simplified knowledge sharing approach* from modern culinary business practices such as Mie Gacoan, this activity is able to answer the fundamental problems that previously hampered the operational effectiveness of MSMEs. In contrast to academic research that is oriented towards theoretical analysis and the development of scientific frameworks, PKM provides direct, relevant, and applicative solutions that can be applied quickly by MSME owners with limited resources. The assistance carried out has improved the ability of MSMEs to manage the order flow through the implementation of QR codes that replace manual methods. This digitization not only speeds up the service process, but also reduces the potential for order recording errors. In addition, the implementation of the digital cashier application provides convenience in recording transactions and helps business owners monitor cash flow in a more structured manner. This is an important first step for MSMEs to enter digital-based financial management practices that are more professional and accountable.

Business layout improvements carried out based on the principle of efficient workflow (*lean layout*) also have a positive impact on customer comfort and the smooth production process. With a more ergonomic layout, employees can move more freely and regularly when preparing dishes, so that customer waiting time can be reduced. In addition, digital marketing education provided to MSME owners opens up new insights into the importance of online visibility in expanding market reach. MSME owners are starting to understand that digital marketing doesn't have to be expensive, but can start with simple content that is engaging, consistent, and according to the target audience. This is the initial capital for MSMEs to build a stronger brand identity and increase competitiveness in the midst

of a tight culinary industry.

Overall, this PKM activity has succeeded in fulfilling its main goal, which is to increase the operational capacity and adaptability of MSMEs through simple but impactful solutions. The results show that basic digitization such as QR codes, digital POS, and efficient layouts can provide significant changes without requiring large investments. This proves that MSME empowerment can be done effectively through a combination of *knowledge sharing*, practical training, and simple technology assistance. This CSI program is expected to be a model for the next service activities in various regions, especially for MSMEs that have similar characteristics. The sustainability of the program can be improved through periodic monitoring, as well as the expansion of digital training to help MSMEs become more independent, competitive, and ready to face the development of the business world in the modern era. Thus, this activity not only provides short-term benefits in the form of operational improvements, but also long-term contribution to strengthening the culinary MSME ecosystem in Malaysia.

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