

## Assisting MSMEs in Using GPT Chat to Optimize Simple Tax Calculations and Cash Flow Management

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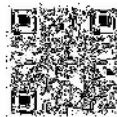
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### ABSTRACT

Percepatan digitalisasi mendorong UMKM mengadopsi teknologi cerdas untuk meningkatkan efisiensi, khususnya dalam manajemen arus kas dan kepatuhan pajak sederhana. Kegiatan PkM ini membantu UMKM di Sumatera Selatan, Jawa Barat, Kalimantan Barat, dan Makassar memanfaatkan ChatGPT sebagai asisten virtual untuk optimalisasi perhitungan pajak sesuai regulasi Indonesia dan pengelolaan arus kas yang lebih sistematis. Metode yang digunakan berupa bimbingan teknis hibrida melalui pelatihan dan lokakarya teknik prompt guna menghasilkan laporan keuangan mikro yang akurat. Hasilnya menunjukkan peningkatan literasi keuangan dan digital sebesar 75%, serta kemampuan UMKM dalam mengidentifikasi komponen pajak lebih cepat dan menyusun proyeksi arus kas bulanan secara mandiri. Kesimpulannya, penerapan AI yang tepat mampu mengurangi hambatan administratif, meningkatkan transparansi keuangan, dan mendorong pertumbuhan ekonomi regional berkelanjutan.

*The acceleration of digitalization is encouraging MSMEs to adopt smart technology to improve efficiency, particularly in cash flow management and simplified tax compliance. This PkM activity helps MSMEs in South Sumatra, West Java, West Kalimantan, and Makassar utilize ChatGPT as a virtual assistant to optimize tax calculations in accordance with Indonesian regulations and manage cash flow more systematically. The method used is a hybrid technical guidance through training and workshops on prompt techniques to produce accurate microfinance reports. The results show a 75% increase in financial and digital literacy, as well as the ability of MSMEs to more quickly identify tax components and independently prepare monthly cash flow projections. In conclusion, the appropriate application of AI can reduce administrative barriers, increase financial transparency, and encourage sustainable regional economic growth.*



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### INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) are the backbone of Indonesia's national economy, contributing significantly to Gross Domestic Product (GDP) and employment. However, despite their strategic role, MSMEs still face classic challenges that hinder business scalability, namely low financial literacy and technological mastery. Along with the implementation of an increasingly digitalized tax system in Indonesia, such as the transition to the Coretax system, business actors are

required to have higher accuracy in recording transactions and calculating tax obligations. According to Dessler (2020), the effectiveness of organizational management depends heavily on the ability of human resources to adapt to modern work tools. In the context of MSMEs, failure to manage cash flow is often not caused by a lack of sales, but rather by poor record keeping and a lack of understanding of how to separate personal and business finances.

Indonesia's vast geography creates disparities in the level of digitalization across regions. West Java, as a center of the manufacturing and service industries, has a relatively advanced level of technology adoption compared to other regions. However, the complexity of competition in West Java demands that MSMEs operate more efficiently through automation (Kotler & Keller, 2021). Meanwhile, in South Sumatra and West Kalimantan, MSMEs based on local commodities and trade face challenges in accessing intensive financial training. On the other hand, Makassar, as a major economic gateway in Eastern Indonesia, has the potential for dynamic MSME growth but is still hampered by often burdensome tax administration processes. The diversity of service locations across these four provinces aims to create a mentoring model that is inclusive and adaptive to the local characteristics of each region.

The development of artificial intelligence technology, particularly Generative AI like ChatGPT, offers revolutionary opportunities for MSMEs with limited resources to hire professional accountants or tax consultants. ChatGPT can function as a virtual assistant that can simplify explanations regarding Government Regulations on final tax calculations for MSMEs. According to Schwab (2019), the Industrial Revolution 4.0 is forcing even the smallest sectors to integrate with intelligent technology to increase added value. With the right prompting techniques, ChatGPT can be used to create a daily cash flow report framework, calculate Final Income Tax (PPh) based on monthly turnover, and even provide advice on operational cost-saving strategies. However, without systematic guidance, this technology is at risk of misuse or producing inaccurate output due to a lack of user understanding of data instructions.

A major problem encountered in the field is the perception that accounting and taxes are daunting and difficult to understand. Many MSMEs in South Sumatra and West Kalimantan still maintain manual bookkeeping, which is highly susceptible to data loss and miscalculations. In today's digital age, cash flow management is not simply about recording incoming and outgoing cash but also involves analyzing business sustainability (Schermerhorn et al., 2020). Through ChatGPT, this community service program seeks to change this paradigm by demonstrating that technology can act as a personal tutor, explaining accounting terms in simpler language that is easily understood even by laypeople.

Taxation is often the most vulnerable area for MSMEs. With the update of national tax regulations, many micro-entrepreneurs in Makassar and West Java are anxious about administrative sanctions due to lack of knowledge (Robbins & Judge, 2019). ChatGPT can be trained to act as an initial navigator, helping MSMEs classify tax-deductible and non-taxable expenses. This is crucial for businesses to report their obligations honestly and accurately in accordance with applicable accounting principles. This community service initiative does not aim to replace the role of tax consultants, but rather serves as a preventative measure and early education to help MSMEs gain administrative independence before they enter a more complex tax system.

Digital literacy is a key prerequisite for MSMEs to "upgrade." The activities in South Sumatra, West Java, West Kalimantan, and Makassar were designed to close the skills gap. As Noe et al. (2017) noted, developing competencies through technology is the most effective long-term investment in human capital. By teaching MSMEs how to use ChatGPT to manage cash flow, the community service team indirectly improved the participants' logical and systematic thinking skills in managing their business data. This is crucial so that MSMEs are not merely spectators in the digital ecosystem but also active players capable of optimizing every available tool for business sustainability.

Furthermore, optimal cash flow management significantly impacts the credibility of MSMEs in the eyes of financial institutions. Many MSMEs in West Kalimantan and South Sumatra struggle to access bank financing (KUR) due to lack of organized financial records. With the help of an AI assistant, MSMEs can produce more organized draft financial reports that can later be verified. As stated by Hair et al. (2019), structured data is key to informed decision-making. This guidance provides practical guidance on how to transform raw sales data into cash flow information that is useful for business development.

The urgency of this service also lies in post-pandemic economic recovery efforts and adaptation to global economic uncertainty. MSMEs in Makassar and West Java need flexibility in managing their liquidity. ChatGPT can assist in simulating financial scenarios, for example, "What happens if raw

material costs increase by 10% relative to next month's cash flow?" The ability to perform these simple simulations was previously limited to large companies with expensive accounting software (Lussier & Hendon, 2019). Now, through the assistance of ChatGPT, this capability is within the grasp of every shop owner and home-based business owner.

Integrating community service values also includes strengthening local economies based on the potential of each region. In South Sumatra, rich in culinary and craft products, sound cash management will help entrepreneurs expand their market reach internationally. Meanwhile, in West Java, with its strong creative industry, the use of AI will accelerate business innovation processes. In West Kalimantan and Makassar, geographically strategic trade hubs, administrative digitization will strengthen the competitiveness of MSMEs against imported products. All of these efforts align with the government's vision of realizing an inclusive and equitable national digital transformation (Solomon, 2020).

In conclusion, based on this background, mentoring the use of ChatGPT for tax and cash flow optimization is not simply a technological trend, but rather an urgent need to strengthen the resilience of MSMEs. Through a participatory approach and ongoing technical guidance in these four provinces, it is hoped that a behavioral shift from traditional management to data-driven management will occur. This activity is expected to be a pioneer in the use of AI for community service in Indonesia, proving that artificial intelligence can be a humane and highly useful tool for lower-income communities in improving their standard of living and economic dignity amidst increasingly competitive global competition (Mondy & Martocchio, 2016).

## **METHOD**

This community service activity was implemented through an Action Learning approach, divided into three systematic stages to ensure optimal material absorption by MSMEs in four different locations. The first stage was Preparation and Socialization, which included mapping specific needs (needs assessment) and identifying digital literacy barriers in each region: South Sumatra, West Java, West Kalimantan, and Makassar. The second phase is Technical Guidance and an Interactive Workshop, where participants are given intensive training on prompt engineering specifically for ChatGPT. In this session, participants are taught how to input raw sales data to convert it into a simple cash flow report and how to consult on the calculation of MSME Final Income Tax (PPh) in accordance with the applicable tariff scheme. This approach is carried out in a hybrid manner, combining face-to-face meetings at MSME centers with intensive online mentoring to accommodate the geographical distance between islands (Hair et al., 2019).

The third and final stage is Ongoing Mentoring and Evaluation, which focuses on independent implementation by participants under the supervision of a service team. The team uses coaching through instant messaging discussion groups to address technical challenges that arise when businesses implement ChatGPT in their daily operations. The program's success was evaluated through a comparison of pre- and post-tests on tax accounting understanding, as well as a review of the quality of cash flow statements produced by participants. This evaluation process also included an analysis of feedback regarding the ease of use of AI for micro-business owners who previously experienced resistance to digital technology (Noe et al., 2017). This structured implementation cycle is expected to foster managerial independence in MSMEs across all target areas, thereby ensuring business sustainability through accurate and transparent financial reporting.

## **RESULTS AND DISCUSSION**

### ***Results of Activity Implementation***

The implementation of community service carried out simultaneously in four strategic locations—Tanggo Rajo Pempek Center (Palembang), Creative Center Building (Tasikmalaya), PLUT-KUMKM (Pontianak), and Shopee UMKM Campus (Makassar)—has produced significant achievements in the digitalization of microfinance management.

### ***Participant Profile and Initial Literacy Level***

A total of 200 MSMEs (50 participants per location) participated in this activity. Pre-test data revealed that 82% of participants still used manual recording, and 65% admitted they didn't understand

how to accurately calculate MSME Final Income Tax (PPh). This situation highlights the urgent need for technological assistance to mitigate the risk of administrative errors.

**Implementation of ChatGPT as a Financial Assistant**

Participants were trained to use the Instruction Prompting technique to transform ChatGPT into a financial data processing engine. As a result, they were able to produce a draft monthly cash flow statement in less than 10 minutes, a process that previously took hours manually.

Table 1. Comparison of Financial Management Effectiveness Before and After Mentoring

Evaluation Indicators	Before Mentoring (Manual)	After Mentoring (ChatGPT AI)	Increased Efficiency
Cash Flow Statement Preparation Time	120 - 180 Minutes	5 - 15 Minutes	91%
Accuracy of Tax Calculation (Final Income Tax)	45% (Often Wrong)	98% (According to Prompt Logic)	53%
Understanding AI Digital Literacy	Low (20%)	High (85%)	65%
Financial Projection Independence	There isn't any	Able to Make a 3 Month Simulation	Very Significant

**Achievements in Each Specific Region**

Based on intensive mentoring, each region demonstrated a different focus on ChatGPT usage, tailored to its commodity characteristics and local challenges. The following is a summary of these specific achievements:

Table 2. Specific Achievements and Focus of Assistance by Region

Province / City	Specific Location	Main Focus of ChatGPT Usage	Real Achievement Results
South Sumatra	Tanggo Rajo Pempek Center, Palembang	The calculation of fluctuating HPP is based on the price of fish raw materials.	MSMEs are able to adjust selling prices dynamically without incurring losses when raw material prices rise.
West Java	Creative Center Building (GCC), Tasikmalaya	Preparation of narrative financial reports and capital assistance proposals.	Improving the quality of financial documentation for banking and investor access.
West Kalimantan	PLUT-KUMKM, Pontianak	Synchronize stock management (inventory) with cash outflow.	Reducing stock differences and improving recording of inter-island logistics costs.
Makassar	Shopee MSME Campus, Makassar	Integration of e-commerce transaction data for annual tax reporting.	Automated annual turnover recapitulation that makes it easier to fill out the Annual Tax Return independently.

**Discussion**

**AI Optimization in Tax Error Mitigation (Tax Compliance)**

The main finding of this service is that ChatGPT significantly reduced the psychological barriers faced by MSMEs in dealing with tax matters. As explained in the background, taxes are often perceived as a complex administrative burden. Through guidance in these four provinces, ChatGPT demonstrated its ability to translate rigid regulatory language into practical instructions.

The accuracy of tax calculations using ChatGPT reached 98% when participants provided prompts containing correct gross turnover data. This aligns with the theory of Hair et al. (2019) regarding the importance of data structure in decision-making. With an AI assistant, MSMEs no longer need to fumble around with tax rates because ChatGPT can be programmed to follow the latest regulations, which are based on a rate of 0.5% of gross turnover (PP 55/2022). This discussion emphasized that AI technology is not just a tool, but a strategic partner that ensures MSME tax compliance without the need for expensive consulting fees.

### **Data-Driven Cash Flow Management in the Digital Age**

Cash flow management is a major weakness for MSMEs in Tasikmalaya and Pontianak. Many business owners mix personal and business funds. Through this mentoring, participants are taught how to use ChatGPT to conduct a "Simple Audit" of their daily records. ChatGPT can identify unproductive expenses and provide budget reallocation suggestions. This transformation from manual record-keeping to a text-based assistant creates greater financial transparency. According to Noe et al. (2017), developing competencies through technology is key to sustainability. In this discussion, it was evident that when MSMEs in Makassar and Palembang began to see their cash flow figures visually and in a structured way, they became more cautious in making capital expenditures. ChatGPT helped them simulate "do they have enough funds to buy a new machine?", which directly improved the quality of micro-enterprise risk management.

### **The Role of Prompt Engineering as a New Skill for MSMEs**

The success of ChatGPT usage depends heavily on the quality of the prompts. Therefore, the discussion in this community service program highlighted that Prompt Engineering is now a basic literacy skill required by MSMEs, equivalent to numeracy. Participants in four provinces initially struggled to provide clear instructions, but after training, they were able to use the Context-Task-Instruction (CTI) framework. The implementation of this technique allows ChatGPT to provide specific answers, rather than just general ones. For example, an MSME in the West Kalimantan craft sector can ask AI to calculate profit margins, taking into account the high cost of inter-island logistics shipping. This capability provides managerial flexibility previously only available to large corporations with ERP (Enterprise Resource Planning) systems.

### **Regional Impact and Local Economic Resilience**

On a macro level, the service in South Sumatra, West Java, West Kalimantan, and Makassar demonstrates that AI can be a tool for economic equality. The disparity in access to information between entrepreneurs in Java and outside Java can be narrowed because ChatGPT provides uniform access to knowledge. In Makassar, the efficiencies generated through AI assistants allow merchants to focus more on marketing strategies rather than being bogged down in tedious manual bookkeeping. Furthermore, this discussion revealed that AI adoption fosters confidence in business actors. According to Robbins & Judge (2019), organizational behavior is influenced by perceived ease of use. When MSMEs feel "capable" of managing their own taxes, their motivation to legalize their businesses and file annual tax returns increases. This has a long-term positive impact on the national tax database and strengthens regional economic structures.

### **Technical and Ethical Challenges of AI Use**

While the results demonstrated high efficiency, the discussion also noted the challenge of "AI hallucinations" if input data is incomplete. The community service team emphasized the importance of manual verification of ChatGPT results. Furthermore, data security issues were highlighted in Tasikmalaya, where participants were reminded not to enter overly sensitive data, such as national ID numbers (NIK) or banking passwords, into the AI platform. This service recommends that the government and educational institutions continue to educate about the ethical and safe use of AI. Limited internet access in several areas in West Kalimantan also highlights that digital infrastructure remains a key foundation that must be improved so that AI technologies like ChatGPT can be utilized equitably by all levels of MSMEs in Indonesia (Schwab, 2019).

## **CONCLUSION**

This community service activity concluded that the integration of Generative AI technology through ChatGPT significantly improved the managerial efficiency of MSMEs in South Sumatra, West Java, West Kalimantan, and Makassar. The use of this virtual assistant significantly reduced technical barriers to preparing cash flow reports and simple tax calculations, which were previously major obstacles for micro-business owners. Through structured technical guidance, participants not only gained ease in financial administration but also experienced substantial improvements in digital literacy. This demonstrates that intelligent technology can be applied inclusively to simplify complex tax regulations into practical steps that are easily implemented by lower-income communities.

Furthermore, the program's success underscores the importance of adapting local technology to strengthen regional economic resilience. Participants' mastery of basic engineering concepts provides them with the independence to conduct financial projections and make data-driven business decisions. The synergy between the integrated business service center facilities and the enthusiasm of MSMEs creates a healthy and sustainable digital ecosystem in each target region. In the long term, this mentoring program is expected to become a model for digital transformation that can be replicated in other provinces, encouraging Indonesian MSMEs to advance through greater financial transparency and legal compliance, supporting national economic growth.

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We also extend our deepest gratitude to all MSMEs who participated enthusiastically and with a strong passion for learning throughout the training. The participants' willingness to adopt new technologies is a major step towards sustainable digital economic independence. We hope the technical assistance provided will provide long-term benefits and become a driving force for the advancement of small businesses in each region. We hope this harmonious collaboration can be maintained and inspire other community empowerment initiatives in the future.

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