No-Code Digital Marketing Dashboard for SMES in Laguna: Basis for Business Enhancement Plan

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Abstract
This study developed and evaluated a no-code digital marketing dashboard using Power BI for small and medium enterprises (SMEs) in Laguna, Philippines. The study aimed to determine whether the dashboard improves digital marketing performance across key indicators. A quasi-experimental pre-test and post-test design was employed with 30 purposively selected SME respondents. The study measured campaign effectiveness, budget efficiency, user satisfaction, data-driven decision-making, ROI forecasting accuracy, ad fraud detection, and ad retargeting strategies. The Wilcoxon Signed Rank Test confirmed statistically significant improvements across all indicators after a three-month implementation period ($p < .001$). Mean scores increased from approximately 2.41–2.59 in the pre-test to 3.67–3.81 in the post-test, indicating substantial improvements in all dimensions. The dashboard enabled non-technical business owners to access actionable marketing analytics without programming knowledge. A business enhancement plan was proposed to sustain and scale dashboard adoption among SMEs. The findings highlight the effectiveness of no-code analytics tools in improving marketing performance, supporting data-driven decision-making, and promoting business growth.

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1. Introduction

In today's digital age, businesses worldwide are increasingly relying on online platforms to reach and engage their target audiences. By 2024, platforms such as Facebook Ads, Google Ads, and Instagram Ads are no longer optional promotional tools but essential components of business strategy, particularly for small and medium enterprises (SMEs) seeking to compete in increasingly digitalized markets (Kemp, 2024) [3]. Compared with traditional media, digital advertising offers cost efficiency, precise audience targeting, and real-time performance monitoring.

Despite these advantages, many businesses continue to face difficulty in translating digital marketing activities into measurable business outcomes. SMEs frequently encounter challenges such as inaccurate return on investment (ROI) forecasting, inefficient allocation of advertising budgets, ineffective ad retargeting, and exposure to digital ad fraud. Global studies indicate that digital ad fraud inflates advertising costs significantly through bot clicks and fake impressions (Sadeghpour & Vlajic, 2021), highlighting the financial risks faced by businesses that lack effective analytical safeguards.

In the Philippine context, these challenges are further emphasized as digital marketing has become a central business practice among SMEs. The country consistently ranks among the highest globally in social media usage (Kemp, 2024) [3]. However, Filipino SMEs face persistent issues related to ad fraud, ineffective retargeting, and limited access to integrated marketing analytics. This situation is particularly evident among SMEs in Laguna, where businesses rely heavily on digital advertising to attract and retain customers amid increasing competition. Consequently, there is a critical need for practical and accessible tools

that translate complex marketing data into meaningful business insights.

This study aimed to develop and evaluate a no-code digital marketing dashboard for SMEs in Laguna using Power BI. The dashboard automates key marketing functions, including ROI forecasting, ad fraud detection, and ad retargeting optimization. While prior research has established the value of these functions individually, limited research has examined no-code Power BI dashboards as integrated digital marketing solutions, particularly within the Philippine SME context. Furthermore, there is limited empirical evidence on the effectiveness of such tools among SMEs in local settings. This study addresses this gap using a quasi-experimental pre-test and post-test design.

2. Methodology

2.1. Research Design

This study employed a quantitative, quasi- experimental design using a one-group pre-test and post-test approach. This design was used to measure changes in digital marketing performance within the same group of respondents before and after the intervention.

The pre-test was conducted to establish baseline effectiveness. After a three-month implementation period of the no-code Power BI dashboard, a post-test was administered using the same instrument to determine changes in performance.

2.2. Research Locale

The study was conducted among 30 SME business owners and marketing practitioners in Laguna, Philippines. Respondents were purposively selected based on the following criteria: (1) active engagement in digital advertising platforms such as Facebook, Instagram, or TikTok; (2) willingness to integrate the no-code Power BI dashboard into their operations; and (3) ability to provide relevant marketing performance data.

The majority of respondents (40%) were engaged in retail businesses, 60% were business owners, and 76.7% identified Facebook as their primary advertising platform.

Fig 1: Map of Laguna Province, Philippines

2.3. Population and Sampling

The population of the study consisted of SME owners and digital marketing practitioners in Laguna who utilize digital marketing platforms. A purposive sampling technique was employed to select respondents who are directly involved in managing and analyzing digital marketing campaigns. This ensured that participants possessed the relevant experience and knowledge aligned with the objectives of the study.

2.4. Research Respondents

The study involved 30 respondents composed of SME owners and digital marketing practitioners. These respondents were selected based on their active participation in digital marketing activities, particularly in managing advertising campaigns, analyzing performance metrics, and making data-driven marketing decisions.

2.5. Research Instrumentation

The study utilized a structured survey questionnaire as the primary data-gathering instrument. The instrument was designed to assess digital marketing performance in terms of campaign effectiveness, budget efficiency, user satisfaction, data-driven decision-making, ROI forecasting, ad fraud detection, and ad retargeting.

A four-point Likert scale was used to measure responses. The questionnaire underwent validation to ensure clarity, reliability, and relevance to the objectives of the study.

2.6. Data Gathering Procedure

The data-gathering process was conducted in two phases: pre-test and post-test. During the pre-test phase, the questionnaire was administered to assess the initial level of digital marketing performance of the respondents prior to the implementation of the no-code Power BI dashboard.

Following a three-month implementation period, a post-test was conducted using the same instrument to measure changes in performance. The collected data were then organized, tabulated, and prepared for statistical analysis.

2.7. Ethical Consideration

The researchers followed ethical guidelines, ensuring data privacy and participant confidentiality in accordance with the Data Privacy Act of 2012. Informed consent was obtained from all participants, and they were fully informed about the purpose of the study, including its expected benefits. Participation was voluntary, and respondents were given the right to withdraw at any time, with their autonomy respected throughout the research process.

3. Results and Discussion

This section presents the results of the study in a systematic and coherent manner, utilizing tables and relevant visual aids to provide a comprehensive analysis of the findings.

The presentation of results and discussion is organized into four major components: (1) the level of digital marketing performance prior to the implementation of the no-code Power BI dashboard, (2) the level of digital marketing performance after the implementation of the dashboard, (3) the test of significant difference between pre-test and post-test results, and (4) the proposed enhancement plan developed based on the outcomes of the study.

Table 1: Level of Digital Marketing Performance Before Implementation of the No-Code Dashboard

Indicator	Mean	Interpretation
Campaign Effectiveness	2.53	Highly Effective
Budget Efficiency	2.44	Highly Effective
User Satisfaction	2.43	Highly Effective
Data-Driven Decision-Making	2.59	Highly Effective
ROI Forecasting	2.42	Highly Effective
Ad Fraud Detection	2.46	Highly Effective
Ad Retargeting	2.41	Highly Effective
Overall Mean	2.47	Highly Effective

Table 1 shows that the level of digital marketing performance before the implementation of the no-code dashboard was highly effective, with an overall weighted mean of 2.47. The weighted means ranged from 2.41 to 2.59, indicating that all indicators fall within the highly effective level.

Among the indicators, data-driven decision-making obtained the highest mean of 2.59, indicating that respondents already demonstrate the use of data in guiding marketing strategies. On the other hand, ad retargeting recorded the lowest mean of 2.41, suggesting limitations in optimizing audience segmentation and conversion strategies.

Similarly, relatively lower means were observed in ROI forecasting (2.42) and user satisfaction (2.43), indicating that while SMEs possess basic digital marketing practices, they face challenges in maximizing advanced analytical tools.

These findings suggest that although digital marketing performance is already at a functional level, there remains a need for accessible and integrated tools to enhance analytics, improve targeting strategies, and support more effective decision-making.

Table 2: Level of Digital Marketing Performance After the Implementation of the No-Code Dashboard

Indicator	Weighted Mean	Verbal Interpretation
Campaign Effectiveness	3.80	Very Highly Effective
Budget Efficiency	3.67	Very Highly Effective
User Satisfaction	3.73	Very Highly Effective
Data-Driven Decision-Making	3.73	Very Highly Effective
ROI Forecasting	3.79	Very Highly Effective
Ad Fraud Detection	3.81	Very Highly Effective
Ad Retargeting	3.79	Very Highly Effective
General Assessment	3.76	Very Highly Effective

Table 2 reveals that after the implementation of the no-code Power BI dashboard, the level of digital marketing performance significantly improved to very highly effective, with an overall weighted mean of 3.76. The weighted means ranged from 3.67 to 3.81, indicating that all indicators fall within the very highly effective level.

Among the indicators, ad fraud detection obtained the highest mean (3.81), indicating that the dashboard effectively enhances the identification of suspicious activities and reduces wasted advertising spend. Campaign effectiveness (3.80) and ROI forecasting (3.79) also demonstrated high levels, showing that the dashboard enables more accurate performance tracking and predictive analysis.

Meanwhile, budget efficiency (3.67) obtained the lowest mean among the indicators, although it still falls within the very highly effective level, suggesting that while resource allocation improved, further optimization may still be required.

These results indicate that the implementation of the dashboard significantly enhanced all aspects of digital marketing performance, particularly in areas that previously showed limitations, such as forecasting, fraud detection, and retargeting. This improvement supports more efficient budget utilization, better targeting strategies, and stronger data-driven decision-making among SMEs.

Table 3: Test of Significant Difference Between Pre-Test and Post-Test Results

Indicator	Pre-Test Mean	Post-Test Mean	Test Statistic (Z)	p-value	Decision	Interpretation
Campaign Effectiveness	2.53	3.80	-4.85	< .001	Reject Ho	Significant
Budget Efficiency	2.44	3.67	-4.72	< .001	Reject Ho	Significant
User Satisfaction	2.43	3.73	-4.80	< .001	Reject Ho	Significant
Data-Driven Decision-Making	2.59	3.73	-4.78	< .001	Reject Ho	Significant
ROI Forecasting	2.42	3.79	-4.83	< .001	Reject Ho	Significant
Ad Fraud Detection	2.46	3.81	-4.86	< .001	Reject Ho	Significant
Ad Retargeting	2.41	3.79	-4.82	< .001	Reject Ho	Significant

Table 3 presents the test of significant difference between the pre-test and post-test results on digital marketing performance. All indicators yielded a p-value of less than .001, leading to the rejection of the null hypothesis. This indicates that there is a statistically significant difference between the levels of digital marketing performance before and after the implementation of the no- code dashboard. Mean scores increased from 2.41–2.59 in the pre-test to 3.67–3.81 in the post-test.

Among the indicators, ad fraud detection and campaign effectiveness showed the greatest improvement, as reflected in the increase between pre-test and post-test mean scores. Similarly, ROI forecasting and ad retargeting also exhibited substantial improvements, indicating that the dashboard

significantly enhanced predictive analytics and targeting strategies.

The results confirm that the observed improvements in digital marketing performance are not due to chance but are directly associated with the implementation of the no-code Power BI dashboard. This demonstrates that accessible business intelligence tools can improve marketing efficiency, reduce advertising waste, and enhance data-driven decision-making among SMEs.

Table 4: Proposed Enhancement Plan

Key Area	Objective	Proposed Action	Expected Outcome
Dashboard Usability	Improve user experience	Conduct user training and interface improvements	Increased adoption and satisfaction
ROI Forecasting	Enhance prediction accuracy	Integrate advanced forecasting models	Better budget planning
Ad Fraud Detection	Strengthen fraud monitoring	Implement automated fraud alerts	Reduced wasted ad spend
Retargeting Optimization	Improve audience targeting	Apply behavioral segmentation	Increased conversion rates
Data-Driven Decision-Making	Promote analytics usage	Provide regular reporting and insights	Better strategic decisions

Table 4 presents the proposed enhancement plan based on the findings of the study. The plan focuses on key areas such as dashboard usability, ROI forecasting, ad fraud detection, retargeting optimization, and data-driven decision-making.

The results of the study indicate that while the dashboard significantly improved digital marketing performance, continuous enhancement is necessary to sustain and further develop these improvements. The proposed actions—including conducting user training, improving interface design, integrating advanced forecasting models, implementing automated fraud alerts, and enhancing audience segmentation—are intended to strengthen the overall effectiveness of the system.

The expected outcomes of the enhancement plan include increased user adoption, improved accuracy in forecasting, reduced advertising losses due to fraud, higher conversion rates, and enhanced data-driven decision- making. These initiatives support more efficient marketing operations and are aligned with the goal of promoting sustainable business growth and maximizing the benefits of no-code analytics tools for SMEs.

4. Discussion

Based on data gathered from SMEs located in Cabuyao, Laguna, the proposed Enhancement Plan was developed to address the gap between existing digital marketing practices and the effective use of data-driven tools for decision-making, campaign optimization, and performance analysis.

Consistent with previous studies, while businesses recognize the importance of digital marketing, the effective use of advanced analytics tools remains limited, particularly among non-technical users. Many SMEs rely on basic metrics and manual analysis, which restricts their ability to accurately forecast return on investment (ROI), detect fraudulent activities, and optimize retargeting strategies. This study addresses this gap by examining how the implementation of a no-code Power BI dashboard enhances digital marketing performance across key indicators.

The findings show that prior to the implementation of the dashboard, digital marketing performance was already at a highly effective level; however, limitations were evident in areas such as ROI forecasting, ad fraud detection, and retargeting optimization. Mean scores ranged from 2.41 to 2.59, indicating that while SMEs possess foundational knowledge and practices, they lack accessible tools that support advanced analytics and automation.

Following the implementation of the no-code dashboard, all indicators significantly improved to a very highly effective level, with mean scores ranging from 3.67 to 3.81. These results demonstrate that the integration of user-friendly analytics tools enhances marketing efficiency, accuracy, and data-driven decision-making. The dashboard enabled respondents to better analyze campaign performance, allocate budgets more effectively, detect suspicious activities, and improve audience targeting strategies.

Using the results of the study, the proposed enhancement plan provides a practical approach to sustaining and further improving digital marketing performance. By incorporating continuous training, system enhancements, and wider adoption of no-code analytics tools, organizations can strengthen their data- driven capabilities. This approach can lead to improved budget allocation, reduced advertising waste, increased customer engagement, and support long-term business growth and sustainability among SMEs.

References

1. Chaffey D. Digital marketing: Strategy, implementation, and practice. 8th ed. Pearson; 2022. Available from: Pearson Digital Marketing Book
2. Kotler P, Keller KL. Marketing management. 16th ed. Pearson; 2021. Available from: Pearson Marketing Management Book
3. Kemp S. Digital 2024: Global overview report. DataReportal; 2024. Available from: DataReportal Digital 2024 Report
4. Oberoi P, Patel C, Haon C. Technology sourcing for website personalization and social media marketing: A systematic review. J Bus Res. 2021. Available from: Journal of Business Research Article DOI
5. Statista. Global digital advertising market size and growth. Statista; 2023. Available from: Statista Advertising Topic Page

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