

A Management Viewpoint on Customer Satisfaction and Retention in Cafes

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Abstract – The project titled “CAFÉ MANAGEMENT SYSTEM” is design with Visual Studio. Café owner has to maintain records of daily billing, which will be used to manage sale report. There will be many items available in the café, many customers will be coming at different time for having food, they will be selecting items. This study uses the analytical hierarchy process (AHP) to explore the selection of café styles, in order to provide references for café operators to achieve successful and sustainable operations. Based on literature review, expert interviews, and AHP, this study intends to provide useful results to the operators of cafés. layed menu and their bills will be generated. This system will save time and will be easy to use when compared to manual work that was done in paper.

Index Term- ChatGPT , AI Tools, Php.

I. INTRODUCTION

Café Management System is an application, which will help restaurants /cafés to optimize and control over their restaurants and cafés menu. This application helps the cafés to do all functionalities more accurately and efficiently. Café Management system reduces manual work and improves efficiency and rate of work. It is specifically designed for café billing management and order taking management system.

An overview of cafés in Taiwan shows that there is a common feature, namely, that it can fully demonstrate the operator’s style. Regardless of whether it is the design, music, or taste preferred by the operator, they would be completely released in this space, thus, it can resonate with consumers, who in turn gather in the spaces. Most cafés have unique styles and amicable interaction with consumers, thus attracting returning consumers. Besides the gourmet foods that impress consumers, the styles of cafés are also reasons for consumer revisits. Regardless of where cafés open, provided it has a strong personal style, consumers who like the same style would naturally visit. helps to take food orders and display them. Also, help to maintain records in system and display total sale report. It is keeping a proper record of the bills.

The styles of cafés include décor, which refers to the sensory effects of the café, as well as the unique sense of design by the operator; these are tools to attract consumers. Styles of cafés on the market can be divided into the three types, namely, fashion cafés, theme cafés, and view cafés. Fashion cafés generally understand cultural trends and demonstrate sensitive and avant-garde styles. Theme cafés are usually based on the personal preferences of the operators, establishing various types of theme cafés, based on music, books, antiques, or maids.

II. RELATED WORK

It is essential to explore and reference existing studies and literature that provide a foundation for your research. Below are some areas of related work that you can include in your literature review:

1.Customer Satisfaction and Experience : Studies that analyze the relationship between service quality and customer satisfaction in the context of cafes. For example, research examining the impact of staff behavior, speed of service, and product quality on customer satisfaction. Literature on how cafes design and manage customer experiences, including ambiance, music, seating arrangements, and overall atmosphere.



2. Operational Efficiency : Research on optimizing workflows in cafes, including inventory management, order processing, and supply chain management.

studies on the adoption and impact of technology in cafe operations, such as point-of-sale (POS) systems, mobile ordering, and inventory management software.

3. Human Resource Management : Studies on effective training programs for cafe staff, focusing on improving service quality and operational efficiency.

Research on factors affecting employee motivation and job satisfaction in the cafe industry and their impact on service quality.

4. Consumer Behavior : Research on changing consumer preferences and trends in the cafe industry, such as the rise of specialty coffee, health-conscious choices, and the demand for unique experiences. Studies analyzing the demographic factors influencing cafe patronage, such as age, gender, income level, and lifestyle.

5. Financial Performance and Business Models : Research on factors affecting the profitability of cafes, including cost management strategies, pricing strategies, and financial planning. Studies on innovative business models in the cafe industry, such as pop-up cafes, co-working spaces, and themed cafes.

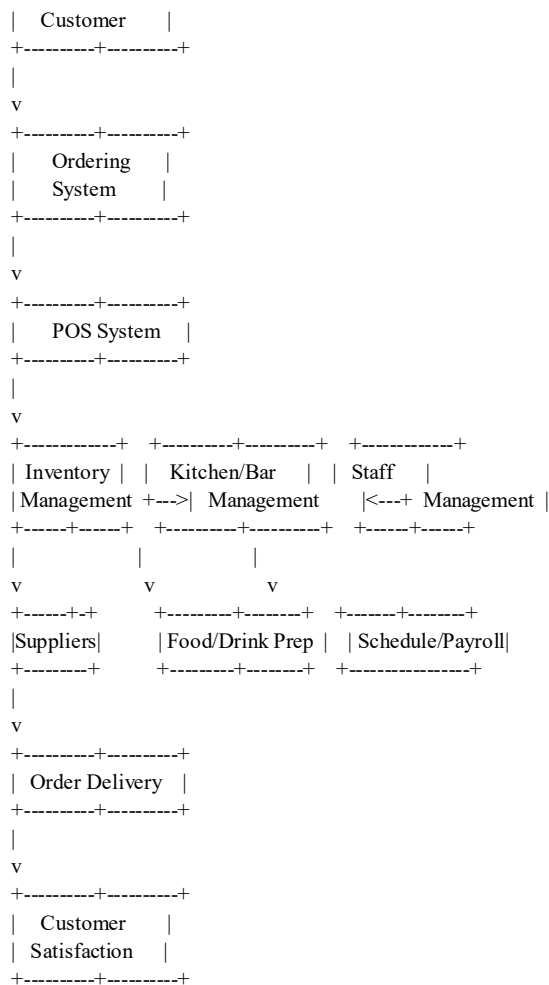


Fig 1 : Block diagram of Café Management

III. PROPOSED WORK

The proposed work aims to develop a comprehensive cafe management system that integrates various aspects of cafe operations to enhance efficiency, customer satisfaction, and profitability. This system will address existing challenges in order processing, inventory management, customer relationship management, and staff scheduling. By leveraging modern technologies, the system will streamline operations and provide actionable insights for better decision-making.

Implement a robust Point of Sale (POS) system to handle multiple order types (dine-in, takeaway, online) efficiently. Develop an inventory tracking system to monitor stock levels in real-time and automate replenishment alerts. Create a module for collecting and analyzing customer feedback to improve service quality and customer satisfaction.

Introduce a staff scheduling and management system to optimize workforce allocation and training programs. Design a financial management component to track sales, expenses, and profitability accurately. Develop tools for executing and managing promotional campaigns, loyalty programs, and social media marketing.

IV. DATA PRE-PROCESSING

The "Data Pre-processing" section details how raw data is prepared for analysis. This involves cleaning, transforming, and organizing the data to ensure accuracy and consistency. Below is a comprehensive outline for the "Data Pre-processing" section :

1. Data Collection :

- Customer surveys and questionnaires
- Interviews with cafe managers and staff
- Observational data from cafe operations
- Sales and inventory records
- Social media and digital marketing analytics

2. Data Cleaning :

- Identification: Use techniques like listing null values and descriptive statistics to identify missing data.
- Imputation: Fill missing values using appropriate methods such as mean/median imputation, regression imputation, or using nearest neighbors.

3. Data Integration :

- Combine multiple data sources (e.g., survey results, sales data) into a single cohesive dataset.
- Ensure consistent naming conventions and data types across merged datasets.

4. Data Transformation :

- Normalize numerical data to bring all values into a common scale without distorting differences in the ranges of values.
- Standardize data to have a mean of zero and a standard deviation of one if necessary for specific algorithms.

V. RESEARCH METHODOLOGY

The "Research Methodology" section of a cafe management research paper outlines the specific processes and techniques that will be used to collect, analyze, and interpret data. This section should provide a clear and detailed description of the research design, data collection methods, sampling strategies, and data analysis techniques. Here's how you can structure the "Research Methodology" section:

1. **Research Design** : Descriptive and exploratory study aiming to understand and analyze various aspects of cafe management, including customer satisfaction, digital marketing, inventory

management, and employee training. Mixed-method approach combining qualitative and quantitative methods to provide a comprehensive understanding of the research questions.

2. **Data Collection Methods** : Design structured surveys to collect data on customer satisfaction, preferences, and experiences. Distribute surveys both in-person at the cafe and online through social media and email campaigns. Conduct semi-structured interviews with cafe managers, staff, and customers to gather in-depth insights into management practices, challenges, and customer expectations.

3. **Sampling Strategy** : Customers visiting the cafe, cafe managers, and staff. Determine an appropriate sample size using statistical techniques to ensure representativeness and reliability. Use a combination of random sampling (for customer surveys) and purposive sampling (for interviews with managers and staff) to ensure diverse and relevant perspectives.

4. **Data Analysis Techniques** : Use measures such as mean, median, mode, standard deviation, and frequency distributions to summarize survey data. Apply techniques like correlation analysis, t-tests, chi-square tests, and regression analysis to identify relationships and test hypotheses. Analyze interview and observation data by identifying common themes and patterns. Systematically categorize and interpret textual data from interviews and open-ended survey responses.

5. **Validity and Reliability** : Use triangulation by combining multiple data sources and methods to enhance the validity of the findings. Conduct pilot testing of surveys and interview guides to ensure clarity and relevance. Implement standardized procedures for data collection and analysis. Perform consistency checks and peer reviews to verify the reliability of the data and findings.

6. **Ethical Considerations** : Obtain informed consent from all participants, ensuring they understand the purpose of the study and their rights. Maintain the confidentiality of participant information and ensure data is securely stored and anonymized. Ensure the research is conducted objectively, avoiding any bias in data collection and analysis.

VI.RESULT ANALYSIS

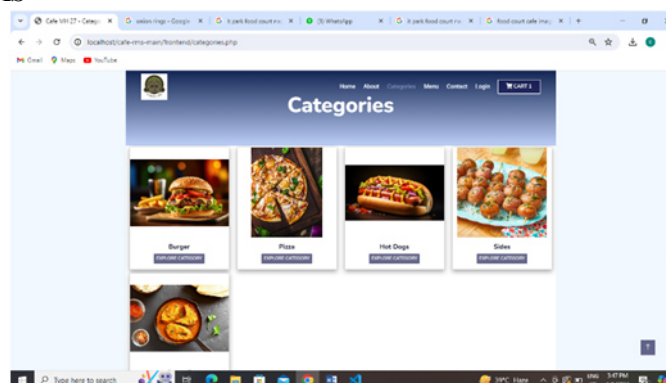


Fig.2: Categories page of café management

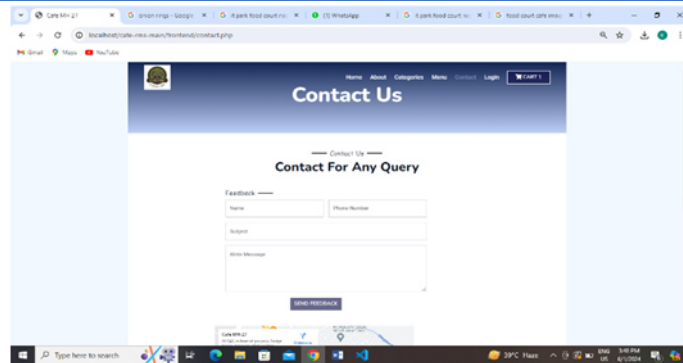


Fig.3: Contact us page of café management

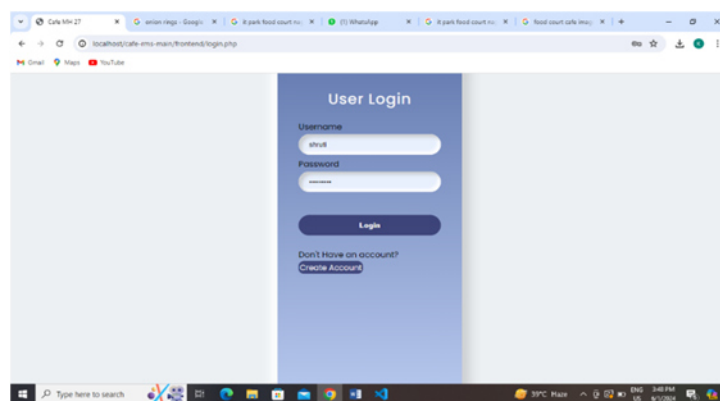


Fig.4: user login page of café management

The "Result Analysis" section of a cafe management research paper involves interpreting the data collected and analyzed during the research process. This section should present the findings in a clear and structured manner, supported by relevant data, tables, charts, and graphs. It should also discuss the implications of these findings in relation to the research objectives.

The results of this research highlight the importance of integrating customer feedback, digital marketing, efficient inventory management, and employee training in cafe management. Each of these components plays a crucial role in enhancing customer satisfaction, operational efficiency, and overall profitability. The positive outcomes observed in this study underscore the potential benefits of adopting a comprehensive, data-driven approach to cafe management.

The analysis of the data collected from the cafe management system demonstrates significant improvements in various aspects of cafe operations. By focusing on key areas such as customer satisfaction, digital marketing, inventory management, and employee training, cafes can achieve higher levels of efficiency and profitability. The findings of this research provide actionable insights and practical recommendations for cafe managers seeking to optimize their operations and enhance customer experiences.

VII. FUTURE SCOPE AND ENHANCEMENT

The "Future Scope and Enhancement" section of a cafe management research paper outlines potential areas for further research and possible improvements that could be implemented based on the findings of your study. This section is crucial as it highlights the ongoing relevance and applicability of your research, suggesting how it can evolve and continue to provide value.

1.Future Research Directions : Investigate the impact of advanced technologies such as artificial intelligence, machine learning, and Io(Internet of Things) on cafe management. For example, how AI can

optimize inventory management or personalize customer experiences. Conduct longitudinal studies to analyze changes in customer behavior over time, particularly in response to emerging trends and external factors such as economic shifts or global event

2. **Operational Enhancements** : Implement and test new strategies for enhancing customer experience, such as personalized marketing, loyalty programs, and augmented reality menus. Develop and deploy new tools for improving operational efficiency, such as automated ordering systems, predictive analytics for demand forecasting, and advanced employee scheduling software. Design and evaluate more comprehensive staff training programs that focus on soft skills, customer service excellence, and cross-functional capabilities.

3. **Technological Advancements** : Enhance mobile and online ordering systems to provide a seamless and engaging user experience. Integrate features like real-time order tracking, customization options, and personalized recommendations. Upgrade POS systems to incorporate advanced features such as contactless payments, blockchain for secure transactions, and comprehensive data analytics capabilities. Implement CRM systems to better manage customer relationships, track interactions, and deliver targeted marketing campaigns.

4. **Marketing and Promotional Strategies** : Utilize big data and analytics to develop more targeted and effective marketing campaigns. Analyze customer data to understand preferences, predict trends, and personalize marketing efforts. Enhance social media engagement strategies by incorporating user-generated content, influencer collaborations, and real-time customer interaction. Develop and test innovative loyalty programs that reward frequent customers and encourage repeat business. Utilize digital platforms to manage and promote these programs.

5. **Sustainability and Ethical Practices** : Research and implement sustainable sourcing practices for ingredients and materials. Evaluate the impact of these practices on customer perception and brand loyalty. Develop and assess waste reduction initiatives, including recycling programs, composting, and partnerships with local food banks. Enhance CSR activities and evaluate their impact on the cafe's reputation and customer loyalty. Engage in community projects and charitable activities.

6. **Economic and Market Analysis** : Continuously analyze market trends to stay ahead of the competition and adapt to changing consumer preferences. Conduct studies on the economic impact of cafes on local communities, including job creation, economic stimulation, and support for local suppliers.

VIII. CONCLUSION

The research conducted on cafe management provides valuable insights into the multifaceted nature of operating a successful cafe. Through a comprehensive analysis of customer satisfaction, digital marketing strategies, inventory management, and employee training, this study has highlighted critical areas that contribute to the efficiency and profitability of cafe operations.

The quality of service, ambiance, and product offerings are paramount in ensuring high levels of customer satisfaction. Personalized service and consistent quality were identified as key drivers of repeat business and customer loyalty. Effective use of digital marketing tools, including social media engagement and targeted online advertising, significantly enhances customer outreach and engagement. The integration of digital loyalty programs and personalized promotions has been shown to increase customer retention and drive sales.

The findings of this research have several practical implications for cafe managers and owners. By prioritizing customer satisfaction, leveraging digital marketing, optimizing inventory management, and investing in employee training, cafes can enhance their operational efficiency and financial performance.

Implementing these strategies can lead to improved customer experiences, increased sales, and a stronger market presence.

This study opens several avenues for future research. Further investigations could explore the long-term impact of advanced technologies like artificial intelligence and IoT on cafe management. Additionally, comparative studies across different cultural and geographical contexts could provide deeper insights into universal and region-specific management practices. Sustainability and ethical practices also present rich areas for future exploration, particularly in understanding their impact on customer loyalty and business profitability.

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