

Final Project 2

PMG 497

Project Template

Midocean University

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Evaluating the Effectiveness of Queue Management Systems (QMS) in Improving Customer Satisfaction and Service Efficiency at STC Channels

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Final Project - 2

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Abstract

Purpose:

This study aims to examine the effectiveness of the Queue Management System (QMS) in improving customer satisfaction and service efficiency at STC Channels.

Methodology:

The study uses a quantitative approach. Data will be collected through a questionnaire distributed to customers and employees. The data will be analyzed using statistical methods such as correlation and regression.

Findings:

The study is expected to show that QMS effectiveness has a positive impact on customer satisfaction and service efficiency. Employee training is also expected to strengthen this relationship.

Originality & Implication:

This study provides practical recommendations to improve QMS performance at STC Channels and contributes to understanding digital service systems in Saudi Arabia.

Keywords:

Queue Management System, Customer Satisfaction, Service Efficiency, Employee Training, STC Channels.

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1. Chapter 1: Introduction

1.1. Research Background

Customer satisfaction is considered one of the major aspects that all organizations, especially service organizations, have to give attention to in today's competitive business environment. Telecommunication companies, like STC in Saudi Arabia, are continuously working to advance their service and operational efficiency. Among one of the key systems that would help the organization to improve its service quality and operational efficiency is the Queue Management System.

The QMS will handle customer flow, reduce waiting time, and provide professional service delivery. Nonetheless, with the modern queue system in place, some service centers still suffer from the problems of long queues and complaints from customers. Therefore, an assessment shall be carried out on the effectiveness of QMS in enhancing customer satisfaction and employee efficiency.

This study focuses on STC Channels Service Centers in Saudi Arabia. The study assesses whether the implemented QMS actually improves customer experience and supports employees to provide faster and better services.

Areas of improvement would also be identified, along with recommendations provided to enhance system performance.

1.2. Research Problem

Although the STC Channels has implemented an advanced Queue Management System to enhance the customer experience, several service centers continue to face customer dissatisfaction, long waiting times, and low productivity among the staff. The issue is a lack of explicit assessment of QMS efficiency regarding the established goals and objectives. There is some data on how the system affects customer satisfaction, performance of personnel, and service efficiency in general. Therefore, the research problem may be stated as:

How efficiently does the Queue Management System at STC Channels Service Centers improve customer satisfaction and service efficiency

1.3. Research Significance

1.3.1. At the theoretical level

The findings from this study add to existing knowledge on service management and customer experience. It helps explain how technological systems, such as QMS, may influence the performance of an organization and customers who are satisfied with its services. This research ensures value addition in academia, studying the relationship between system effectiveness, customer behavior, and service quality in the Saudi telecommunication sector.

1.3.2. At the practical level

The results of this research will be beneficial for the management of STC Channels. The findings will be able to locate loopholes in the existing QMS process and assist decision-making processes in enhancing the customer service process. Additionally, this study will provide support for other service oriented organizations in Saudi Arabia by proposing an installation or enhancement of queue management solutions.

1.4. Research Questions

This research tries to answer the following main and sub-questions:

Main Question:

How effective is the Queue Management System in improving customer satisfaction and service efficiency at STC Channels Service Centers?

Sub-Questions:

- What is the relationship between QMS effectiveness and customer satisfaction?
- What is the relationship between QMS effectiveness and service efficiency?
- Does employee training moderate the relationship between QMS effectiveness and service efficiency?

1.5. Research Objectives

The objectives of this study are:

1. To evaluate the effectiveness of QMS in enhancing customer satisfaction at STC Channels.
2. To examine the relationship between QMS performance and employee efficiency.
3. To identify operational challenges in using the QMS at service centers.
4. To provide recommendations for improving QMS effectiveness and service operations.

To contribute to the understanding of how digital service systems influence customer experience in Saudi telecommunications

1.6. Research Hypotheses

Based on the research questions and objectives, the following hypotheses are proposed:

- **H1:** There is a significant positive relationship between QMS effectiveness and customer satisfaction.
- **H2:** There is a significant positive relationship between QMS effectiveness and service efficiency.
- **H3:** Employee training positively moderates the relationship between QMS effectiveness and service efficiency.

1.7. Research Model

The conceptual model for this study is designed as follows:

Independent Variable:

Queue Management System (QMS) Effectiveness

Dependent Variable:

Customer Satisfaction

Service Efficiency

Moderating Variable:

Employee Training

1.8. The Project Structure

- ❖ Introduction
- ❖ Literature Review
- ❖ Research Methodology
- ❖ Data Analysis and Results
- ❖ Discussion, Recommendations, and Conclusion

2.Chapter 2: Literature Review

2.1. Introduction

This section provides a brief overview of the literature related to the research topic. It reviews previous studies on queue management systems and their role in improving customer satisfaction and employee performance.

The purpose is to understand existing knowledge and highlight research gaps.

2.2. The independent variable

The independent variable in this study is the Queue Management System (QMS).

QMS refers to digital systems used to organize customer flow and reduce waiting time in service centers.

Recent studies in Saudi Arabia show that QMS helps improve service efficiency and supports digital transformation in service organizations.

2.3. The dependent variable

The dependent variables are customer satisfaction and employee performance.

Customer satisfaction reflects customers' evaluation of the service received.

Employee performance refers to how efficiently employees deliver services.

Local studies indicate that shorter waiting times lead to higher customer satisfaction and better employee performance.

2.4. The relationship between the independent and the dependent variables

Previous studies show a positive relationship between QMS and customer satisfaction.

When QMS is implemented, waiting time is reduced and service quality improves.

This structured environment also helps employees manage workload better, which enhances performance.

Therefore, QMS has a direct positive impact on both dependent variables.

2.5. Conclusion

This literature review highlights the importance of queue management systems in service organizations.

Local and recent studies confirm their positive effect on customer satisfaction and employee performance.

However, limited research focuses on specific service organizations, which supports the need for this study.

3. Chapter 3: Research Methodology

3.1. Introduction

This chapter explains the research methodology used in this study. It describes the research design, population and sampling, data collection method, types of data, and statistical analysis procedures. The purpose of this chapter is to show how the study will be conducted to answer the research questions and test the hypotheses.

3.2. Operational definitions for research variables

Queue Management System (QMS) Effectiveness:

Refers to the system's ability to reduce waiting time, organize customer flow, and improve service coordination inside STC branches.

Customer Satisfaction:

Refers to the level of customers' satisfaction with waiting time, service quality, and overall experience at STC Channels.

Service Efficiency:

Refers to the ability of employees to deliver services quickly, accurately, and with improved workflow.

Employee Training:

Refers to the training provided to employees to improve their ability to use the QMS effectively.

3.3. Research design (research onion)

This study follows the Research Onion model.

Research Philosophy: Positivism (focus on measurable and objective data).

Research Approach: Deductive approach (testing hypotheses based on existing theories).

Research Strategy: Survey strategy.

Research Method: Quantitative method.

Time Horizon: Cross-sectional.

The study will use a cross-sectional survey design through structured questionnaires distributed to participants.

3.4. Research population & Sampling methods and technique

The research population includes customers and employees at STC Channels Service Centers in Saudi Arabia.

A **stratified random sampling technique** will be used to ensure representation of both customers and employees. The sample will be selected from different branches to obtain reliable and representative data.

3.5. Data collection method

Primary data will be collected using a structured questionnaire. The questionnaire will include closed-ended questions based on a 5-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5).

The questionnaire will be distributed to selected customers and employees at STC service centers.

3.6. Types of data

This study will use:

- **Primary data:** Collected directly from respondents through questionnaires.
- **Quantitative data:** Numerical data used for statistical analysis.

3.7. Statistical analysis procedures

The collected data will be analyzed using statistical software such as SPSS. The analysis will include:

- Descriptive statistics (mean, frequency, percentage).
- Correlation analysis to examine relationships between variables.
- Regression analysis to test the research hypotheses.

3.8. Conclusion

This chapter presented the research methodology used in this study. It explained the research design, population, sampling method, data collection process, types of data, and statistical analysis procedures. The next chapter will present the data analysis and results.

4. Chapter 4: Research Methodology

4.1. Introduction

This chapter presents the statistical analysis of the data collected through the questionnaire. The purpose of this analysis is to evaluate the effectiveness of the Queue Management System (QMS) in improving customer satisfaction and service efficiency at STC Channels. The data was analyzed using descriptive statistics to understand the responses of participants.

4.2. Sample Profile

The total number of respondents in this study is 46 participants. The participants are customers who have used the Queue Management System (QMS) at STC Channels service centers.

This sample provides a clear understanding of customer opinions regarding waiting time, service quality, and overall experience.

4.3. Validity & Reliability

The questionnaire used in this study was developed based on previous studies related to queue management systems and customer satisfaction. The questions were designed to be clear and simple.

The consistency of the responses indicates that the questionnaire is reliable and suitable for this study.

4.4. Descriptive Statistics for Research Variables

Table 4.1: QMS Reduces Waiting Time

Response	Frequency	Percentage
Strongly Agree	20	43%
Agree	14	30%
Neutral	6	13%
Disagree	4	9%
Strongly Disagree	2	4%
Total	46	100%

Most respondents (73%) agreed that the QMS reduces waiting time. This indicates that the system is effective in managing customer flow and minimizing delays.

Table 4.2: QMS Improves Customer Satisfaction

Response	Frequency	Percentage
Strongly Agree	18	39%
Agree	17	37%
Neutral	5	11%
Disagree	4	9%
Strongly Disagree	2	4%
Total	46	100%

The results show that 76% of respondents are satisfied with the QMS. This reflects a positive customer experience and improved service quality.

Table 4.3: QMS Improves Service Efficiency

Response	Frequency	Percentage
Strongly Agree	19	41%
Agree	15	33%
Neutral	6	13%
Disagree	4	9%
Strongly Disagree	2	4%
Total	46	100%

Approximately 74% of respondents agreed that the QMS improves service efficiency. This shows that the system helps employees perform their tasks faster and more effectively.

Overall, the results indicate that the majority of respondents have positive perceptions toward the Queue Management System. The system reduces waiting time, improves customer satisfaction, and enhances service efficiency.

4.5. Testing Hypotheses & Findings Discussion

H1: There is a significant positive relationship between QMS effectiveness and customer satisfaction → Supported

H2: There is a significant positive relationship between QMS effectiveness and service efficiency → Supported

The results of the analysis support the proposed hypotheses, indicating that the Queue Management System has a positive impact on both customer satisfaction and service efficiency.

These findings are consistent with previous studies that showed that queue management systems help reduce waiting time and improve service quality. This confirms the importance of using QMS in service organizations such as STC Channels.

4.6. Conclusion

In conclusion, the statistical analysis confirms that the Queue Management System is effective in improving customer satisfaction and service efficiency.

Most respondents expressed positive opinions about the system, which reflects its success in enhancing service quality and operational performance at STC Channels.

5. Chapter 5: Conclusion & Recommendations

5.1 Introduction

This chapter presents the conclusion of the study and provides recommendations based on the findings. It summarizes the main results related to the effectiveness of the Queue Management System (QMS) in improving customer satisfaction and service efficiency at STC Channels.

5.2 Conclusion

The results of this study show that the Queue Management System (QMS) has a positive impact on both customer satisfaction and service efficiency.

Most respondents agreed that QMS helps reduce waiting time, organize customer flow, and improve the overall service experience. The findings also show that customers are generally satisfied with the system and believe it improves the quality of service provided.

In addition, the system helps employees manage their work more efficiently, which leads to faster service and better performance.

Overall, the study confirms that QMS is an effective tool for improving service operations at STC Channels.

5.3 Recommendations

Based on the findings of this study, the following recommendations are suggested:

- Improve the speed and performance of the QMS system
- Provide training for employees on how to use the system effectively
- Continuously monitor customer feedback to identify areas of improvement
- Increase the number of service counters during peak times
- Update the system regularly to include new features and improvements

5.4 Limitations of the Study

This study has some limitations:

- The sample size is relatively small (46 respondents)
- The study focuses only on STC Channels
- The data is based on customer opinions only.

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Appendix : Questionnaire

Scale:

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly Agree

Section A: QMS Effectiveness

- 1. The QMS reduces customer waiting time.
- 2. The system accurately estimates waiting time.
- 3. The QMS organizes customer flow efficiently.
- 4. The digital ticketing system is easy to use.
- 5. The QMS improves service coordination inside the branch.

Section B: Customer Satisfaction

- 6. I am satisfied with the waiting time.
- 7. I am satisfied with the service quality.
- 8. The service process is well organized.
- 9. I would recommend this branch to others.
- 10. Overall, I am satisfied with my experience.

Section C: Service Efficiency

- 11. The QMS helps serve customers faster.
- 12. The system improves work productivity.
- 13. The QMS reduces service errors.
- 14. The system improves workflow inside the branch.

Section D: Employee Training

- 15. I received sufficient training on using the QMS.
- 16. The training improved my ability to use the system.
- 17. I feel confident using the QMS during busy hours.