

How to write Chapter 3 and 4

Chapter 3: Results and Discussions

This chapter presents your research findings without interpretation. Your goal here is to objectively report the data you have collected.

Introduction

Briefly restate the purpose of the study and the main objectives.

Mention the structure of the results chapter (e.g., organized by research questions or themes).

Project Capabilities and Testing Process Details

Involves explaining the features, functions, and performance of a system that you've designed, developed, or studied. It's important to address both what the system can do and how well it does it, while also considering how the system meets user needs, technical requirements, or other specific criteria.

Present the Results

Organize the data: Use headings that align with your SOPs and SOOs.

Use tables, figures, or graphs to display numerical data clearly to make your data more understandable.

If applied to the sample table 4 Summary of Sentiment Analysis results for Year

Level 1, the data yields the following:

Year level	Module	Number of Sentiments
1	1	67
Method of Analysis		
Sentiment	Human-annotated (Manual)	Lexicon-based (VADER)
Positive	61	55
Neutral	4	12
Negative	2	0

Label all figures and tables appropriately and provide captions explaining what they represent.

Mention any significant and non-significant results, but don't interpret them here.

- You can use screenshots of your system while discussing the features and what problems it solves, or output it produce.

Teachers can easily create classrooms and open subjects available for students to join. The following figures are screenshots of the actual pages for teachers:

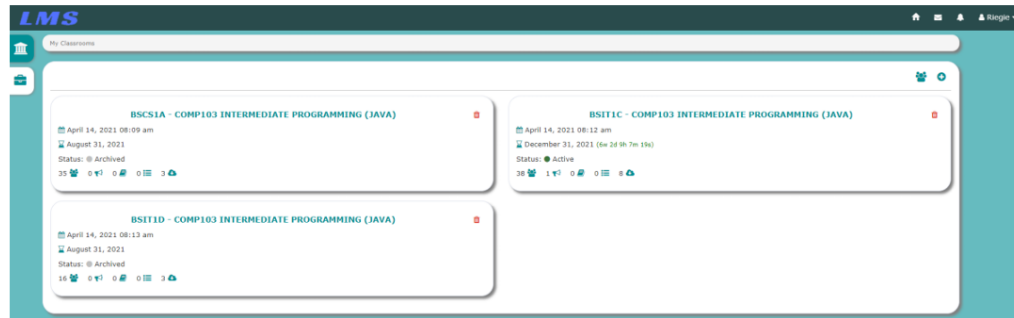


Figure 17. My Classroom

design of learning materials supporting a more constructive and inclusive teaching-learning process. Below figures provide visualization:

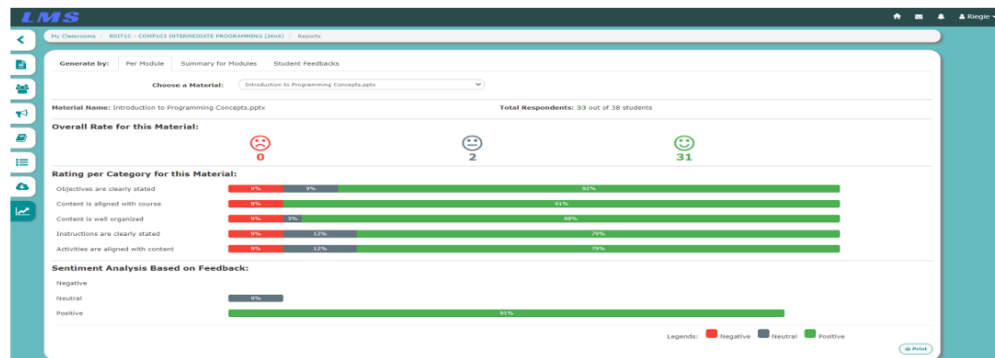


Figure 24. Sentiment Analysis Reports (Summary of Student Feedbacks per learning material)



A Test plan is a detailed document that outlines the test strategy, objectives, resources needed, schedule, and success criteria for testing a specific new feature or piece of software; including its accuracy.

A test plan ensures your software meets the requirements that guided its design and development , revisit your SOPs and SOOs

- A System Evaluation Tool is provided as a guide to your testing efforts

The results of your system, based on accuracy should also be discussed.

Percent Error

$$\text{Percent_Error_of_Pos} = (| 61 - 55 |) / 67 * 100 = 8.96\%$$

$$\text{Percent_Error_of_Neu} = (| 4 - 12 |) / 67 * 100 = 11.94\%$$

$$\text{Percent_Error_of_Neg} = (| 2 - 0 |) / 67 * 100 = 2.99\%$$

The Accuracy rate is also computed to determine the viability and usefulness of the system. Given the combined results from Year Level 1 (Table 4. Summary of Sentiment Analysis results for Year Level 1); the following is provided:

The accuracy is then calculated using the given formula below:

$$\text{Accuracy} = \frac{\text{TN} + \text{TP}}{\text{TN} + \text{FP} + \text{FN} + \text{TP}}$$

To compute for the accuracy of the Positive sentiments of 0.8244.

POSITIVE SENTIMENTS	
TP	103
FN (Cells 2 + 3)	19
FP (Cells 4 + 7)	4
TN (Cells 5 + 6 + 8 + 9)	5

Confusion Matrix for Year Level 1

		Predicted Values (VADER result)		
		Positive	Neutral	Negative
Actual Values (Human-Annotated)	Positive	103 <small>1</small>	19 <small>2</small>	0 <small>3</small>
	Neutral	0 <small>4</small>	5 <small>5</small>	0 <small>6</small>
	Negative	4 <small>7</small>	0 <small>8</small>	0 <small>9</small>

To determine the accuracy rate, a representation of counts from predicted and actual values is illustrated as a confusion matrix that represents the following:

Present a summary of results from the System Evaluation Tool; explaining the basis of your data based on your test plan.

Present the results using a table and graph or any visual aids

Include citations from journals to support your process in testing the system

Avoid Interpretation. Do not explain or interpret the meaning of the results. That will be covered in the discussion chapter.

Chapter 4: Conclusion and Recommendations

Conclusion

There should be a brief statement about:

The main purpose of the study

The population of respondents

The instrument used for testing

Restate the SOPs or SOOs

The primary objective of this study was to analyze the impact of digital marketing strategies on consumer behavior in the retail industry. This research aimed to fill the gap in understanding how social media platforms influence purchasing decisions.

Conclusion

With the developed LMS having the facility to allow students to assess the content and design of learning materials, mining students' opinions provided actionable information to teachers on how to improve the design of learning materials. And as proven by the accuracy rate of the results, the developed LMS with content evaluation system can achieve more than 80% accuracy, hence, simplifying the process of sentiment analysis improving LMS implementation.

The findings should be a textual generalization, that is a summary of the important data consisting of text and numbers.

The findings indicate that social media marketing significantly influences consumer behavior, with platforms such as Instagram and Facebook accounting for 60% of online purchases in the surveyed population. Furthermore, targeted ads and influencer endorsements were found to have a greater impact on younger demographics.

Only the important findings, the highlights of the data, should be included in the summary – focusing on the SOPs. Explain how your findings relate to the original research problem or questions.

These results align with previous studies on digital marketing, but they expand the understanding of how specific social media platforms can be leveraged to target different demographic groups, providing new insights for marketers.

The conclusions relate directly to the research questions or objectives. They represent the contribution to knowledge. They also relate directly to the significance of the study, which is always, in some way, to improve the human condition. These are the major generalizations, the answer to the problem(s) revealed in Chapter 1.

No new data should be introduced in the summary

Conclusions should appropriately answer the specific questions raised at the beginning of the investigation in the order they are given under the SOPs.

Conclusions should point out what was factually learned from the inquiry. No conclusions should be drawn from the implied or indirect effects of the findings.

Conclusions should only be based upon the responses to the System Evaluation Tool.

Conclusions should be supported by text and numbers, results from testing, and nothing else.

Conclusions should not be repetitions of any statements anywhere in the thesis.

Conclude with a final statement that underscores the significance of your research.

Overall, this study highlights the growing importance of social media marketing in shaping consumer behavior and provides actionable insights for retailers seeking to enhance their digital marketing strategies.

Guidelines for writing Recommendations

Recommendations

These can take two forms: recommendations for further study, or recommendations for change, or both. Each recommendation should trace directly to a conclusion.

Recommendations for Action. Recommendations should aim to solve or help solve problems discovered in the investigation.

Retailers should consider investing more in Instagram and Facebook advertising, with a focus on influencer partnerships and targeted ads for younger audiences. A shift toward video-based content, such as Instagram Reels or TikTok, may further enhance engagement and conversion rates.

Recommendations for Future Research.

Future research should expand the sample size to include a broader geographic range and explore how social media marketing affects consumer behavior in other industries, such as fashion or electronics. Additionally, studies could investigate the long-term impact of influencer marketing on brand loyalty.

Recommendations for System or Process Improvement. Recommendations should only include considerations for future enhancements. It is useless to recommend the impossible.

The current digital marketing tools could be improved by integrating AI-driven personalization, allowing retailers to deliver more targeted content to specific customer segments in real-time. Additionally, incorporating user-generated content into marketing campaigns could boost customer engagement.

Recommendations

The high accuracy rate of the lexicon-based sentiment analysis is inspiring. Given that the mode of learning nowadays is mostly blended, with the feedback mechanism embedded in the developed LMS, the approach to learning became holistic and inclusive. Of course, the automated system remains to be just a tool. Without proper interventions, the results produced by the system, regardless of how relevant it is, will be put to waste.

Change in institutional policies

Implementation of the LMS should start with the introduction of institutional policies, setting a standard of acceptability. Validation of the student sentiments can be determined by comparing the results of the Likert-style scale and sentiment analysis to see

Keep it Concise: Both sections should be concise and to the point. Avoid repeating too much of what you've already discussed in detail in earlier chapters.

Actionable Suggestions: Ensure that recommendations are practical and based on the data you've gathered.

Avoid New Information: The conclusion should not introduce new concepts, findings, or research data. Stick to summarizing and drawing implications from what has already been presented.

Use a Positive Tone: Especially in the recommendations, focus on constructive suggestions and ways to improve or build on your findings.