

# Technology Report and Presentation

*Design and Creative Technologies*

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**Student:** Luis Guilherme de Barros Andrade Faria - A00187785

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**Lecturer:** Dr. Dyvia Leekha

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# Cloud Computing for ABC Enterprise: Key Contributions to Business Automation

## 1. Executive Summary

Cloud computing has become embedded in our lives: we use it from the moment we wake up to the time we go to sleep – we’re constantly connected. Emails, social media, streaming, file storage, smart home devices are all examples of cloud computing. This technology is a powerful enabler to our personal lives alone, even more to the business context, which is this report’s focus, as we will dive on ABC Enterprise app case scenario.

ABC app offers delivery services, providing an interesting link between customers-restaurants and has already experienced great success on leveraging cloud for expanding the business. The app’s customer base has already grown 10x in a single month, and this report will take it to another level by planning accordingly to support the possibility of scaling even more.

## 2. Benefits of Cloud Computing vs. Traditional IT Infrastructure

### 2.1. Cost Efficiency and Pay-as-you-grow Model

Across service industries, patient or customer experience has become a measurable business asset. Godovsky and Pizam (2023) emphasize that in healthcare, experience extends beyond satisfaction, it encompasses emotional safety, empathy, and trust. Positive encounters build loyalty, which in turn drives repeat visits and referrals, translating indirectly into revenue stability. Their work positions experience management as a strategic investment rather than a marketing accessory.

Shankar and Yip (2024) complement this view by demonstrating how natural language processing (NLP) can convert qualitative feedback into operational insights. Using large-scale patient comments, their model identified themes affecting satisfaction (e.g., waiting time, staff tone) and provided managers with actionable dashboards. However, both studies stop at operational improvement, neither tests whether these experiential gains actually correlate with financial growth.

This missing bridge between experience analytics and business performance motivates the present study. By applying statistical correlation between NPS and revenue, it provides the quantitative validation that connects loyalty outcomes with financial reality, an essential step before building predictive or AI-enhanced models.

## 2.2. Rapid Scalability for Business Growth

Since Reichheld (2003) introduced the Net Promoter Score (NPS), it has become a near-universal loyalty metric. Dawes (2024) critiques its simplicity, noting that it measures intention to recommend rather than actual behavior and may suffer cultural bias, promoters in one region may rate lower in another due to response norms. Nevertheless, NPS persists because executives value its clarity and benchmarking power.

Scholars remain divided. Proponents argue that high NPS correlates with retention and word-of-mouth; detractors caution that context, culture, and income level moderate outcomes. Within healthcare, where emotions and trust dominate, these biases may distort interpretation.

This research will align with Dawes's call for empirical validation by testing whether NPS predicts objective financial performance in clinics. By doing so, it shifts discussion from perceptual satisfaction to quantifiable business impact, grounding managerial reliance on NPS in evidence rather than assumption.



*Figure 2 – Conceptual Model of the Relationship Between Patient Experience, NPS, and Revenue Growth.*

### 3. Cloud Service and Deployment Models

#### 3.1. Service Model Analysis

This research will adopt a quantitative correlational design under a pragmatic–positivist paradigm (Morgan, 2014). The aim is to test whether Net Promoter Score (NPS) statistically correlates with revenue growth in healthcare clinics. The design focuses on what works to generate actionable knowledge, combining business intelligence with empirical validation.

Quantitative analysis is justified because the research questions are relational rather than exploratory. It allows statistical testing of two hypotheses:

- H0: No significant correlation exists between NPS and revenue.
- H1: NPS is positively correlated with revenue.

The pragmatic stance recognizes that understanding this link is essential before introducing advanced AI feedback systems, thus aligning with ICT research-and-development principles of incremental validation (Wohlin & Runeson, 2021).

### 3.2. Deployment Model Analysis

The study uses secondary data from Pro-Corpo Estética, a healthcare group with multiple clinic branches across Brazil. The dataset contains approximately 27,000 aggregated NPS survey responses collected between 2022–2025. Each record includes:

- Clinic ID / Store name
- Month & Year
- Average NPS score (0–10 scale)
- Monthly revenue (BRL)
- Number of responses per month

Because the population of available data is finite and fully accessible, no sampling technique is required. Instead, the full dataset is analyzed (a population study) to ensure statistical power and eliminate sampling bias (Cohen, 1988).

The figure displays two side-by-side screenshots of a satisfaction survey instrument. Both screenshots feature a header with the logo 'PRÓ-CORPO' and the text 'ESTÉTICA AVANÇADA'. The left screenshot shows a standard form with the following fields:

- 'Por favor, digite o seu CPF:' with a placeholder 'Your answer'.
- 'Em qual unidade foi seu atendimento? \*' with a dropdown menu showing 'Choose'.
- 'Como você avalia o atendimento recebido em seu procedimento ou avaliação realizada aqui na Pró-Corpo?' with a dropdown menu showing 'Choose'.
- 'Você tem sugestões, críticas ou comentários? Escreva pra nós!' with a placeholder 'Your answer'.

At the bottom are buttons for 'Next', 'Clear form', and 'Clear form'. The right screenshot is identical but highlights the dropdown menu for the NPS score with a green border, containing the value '10 - Excelente!'. It also features the same set of buttons at the bottom.

*Figure 3 – Existing NPS survey instrument used by Pro-Corpo Estética (2022-2025). This study will analyze aggregated responses from Question 1 (NPS score) and monthly revenue data, with Question 2 text comments available for future qualitative analysis.*

### 3.3. Recommended Models for ABC Enterprise

Data cleaning follows best practices in quantitative analytics (Field, 2018):

1. Duplicate removal based on timestamp and clinic ID.
2. Handling missing values:
  - a. Missing NPS → excluded (non-imputable).
  - b. Missing revenue → interpolated only for isolated gaps.
3. Outlier analysis: Revenue outliers  $>3$  SD are flagged and compared against prior months for validation.

4. Transformation:
  - a. NPS aggregated by month per clinic.
  - b. Derived variables: Revenue Growth %, Lagged NPS (t-1, t-2) for temporal testing.
5. Integration: Merged on (*clinic\_id + month + year*) ensuring chronological consistency.

All operations are executed in Python (Pandas, NumPy) with transparent logging for reproducibility.

## 4. Cost Model Analysis

### 4.1. Cloud Cost Model Options

This research will adopt a quantitative correlational design under a pragmatic–positivist paradigm (Morgan, 2014). The aim is to test whether Net Promoter Score (NPS) statistically correlates with revenue growth in healthcare clinics. The design focuses on what works to generate actionable knowledge, combining business

### 4.2. Recommended Cost Model for ABC Enterprise

This research will adopt a quantitative correlational design under a pragmatic–positivist paradigm (Morgan, 2014). The aim is to test whether Net Promoter Score (NPS) statistically correlates with revenue growth in healthcare clinics. The design focuses on what works to generate actionable knowledge, combining business

## 5. Cloud Service Provider Recommendation

### 5.1.Provider Comparison

This research will adopt a quantitative correlational design under a pragmatic–positivist paradigm (Morgan, 2014). The aim is to test whether Net Promoter Score (NPS) statistically correlates with revenue growth in healthcare clinics. The design focuses on what works to generate actionable knowledge, combining business intelligence with empirical validation.

### 5.2.Recommended Provider for ABC Enterprise

This research will adopt a quantitative correlational design under a pragmatic–positivist paradigm (Morgan, 2014). The aim is to test whether Net Promoter Score (NPS) statistically correlates with revenue growth in healthcare clinics. The design focuses on what works to generate actionable knowledge, combining business intelligence with empirical validation.

### 5.3.Essential Computing Elements for Industry Automation

This research will adopt a quantitative correlational design under a pragmatic–positivist paradigm (Morgan, 2014). The aim is to test whether Net Promoter Score (NPS) statistically correlates with revenue growth in healthcare clinics. The design focuses on what works to generate actionable knowledge, combining business intelligence with empirical validation.

## 6. Conclusion

This research proposal will establish a systematic framework to investigate whether Net Promoter Score (NPS) serves as a valid predictor of revenue performance in healthcare clinics. The study addresses a critical gap in healthcare business intelligence: while NPS is widely adopted to measure patient loyalty, its correlation with financial outcomes remains empirically unvalidated. Two research questions guide the inquiry: (1) To what extent is NPS correlated with clinic-level revenue? and (2) Can NPS trends predict short-term financial fluctuations?

To answer these questions, the study employs a quantitative correlational design situated within a pragmatic-positivist paradigm, analyzing three years of longitudinal data (27,000 records) from Pro-Corpo Estética's multi-site healthcare network. The methodology will integrate descriptive statistics, Pearson and Spearman correlation analyses, and regression modeling with temporal lag variables, triangulated across time periods, clinic locations, and statistical approaches to ensure robustness. By establishing empirical evidence, or lack thereof, regarding the NPS-revenue relationship, this research will inform both managerial practice (validating or challenging current performance measurement systems) and academic research (providing a quantitative foundation for future AI-enhanced sentiment analysis in healthcare). The 12-week timeline ensures systematic execution from data preparation through statistical validation, with findings positioned to guide evidence-based healthcare management and responsible ICT innovation aligned with Torrens University's "Here for Good" ethos.

## 7. Proposed Timeline

The proposed study will be conducted over a twelve-week period, reflecting a structured and iterative approach to quantitative research. The timeline follows a logical flow, beginning with

conceptual refinement and ethical compliance, moving into data preparation and statistical analysis, and concluding with synthesis, validation, and dissemination. Each phase is intentionally sequenced to ensure the study progresses from theoretical grounding to empirical results while maintaining data integrity and ethical governance.

*Table 2 – Timeline in details with Phase/Task and Description*

Phase/Task	Description
1 - Literature Refinement & Problem Definition	Consolidate prior studies on NPS, revenue correlation, and patient-experience metrics. Confirm research gap & finalize RQs.
2 - Data Acquisition & Ethics Clearance	Obtain signed consent letter from Pro-Corpo; verify anonymization and data-use boundaries.
3 - Data Cleaning & Preparation	Remove duplicates, handle missing values, compute monthly averages, merge NPS + revenue tables.
4 - Descriptive & Correlation Analysis	Run Pearson / Spearman tests, generate scatterplots, and check temporal lags.
5 - Regression Modelling & Validation	Build regression model, test assumptions, interpret coefficients, cross-validate by clinic/year.
6 - Results Interpretation & Draft Writing	Integrate findings with theoretical implications; draft report chapters and visualizations.
7 - Final Editing & Presentation Prep	Review structure, apply feedback, edit references (APA 7th), design slides, rehearse presentation.

Post-Study Dissemination (Beyond Week 12): Following completion of the 12-week research cycle, findings will undergo extended validation and dissemination through journal publication (targeting *International Journal of Market Research* or *Journal of Healthcare Management*) and conference presentations. This extended phase (estimated 20-28 additional weeks) will involve manuscript preparation, peer review, and knowledge translation to both academic and practitioner audiences, ensuring research impact beyond the immediate assessment period.

This schedule ensures that analytical tasks are interleaved with reflection and validation, minimizing risks of data misinterpretation and ensuring that findings are actionable and reproducible. By Week 12, both the written report and the presentation materials will be complete, demonstrating a clear, ethical, and technically sound workflow from research conception to dissemination.

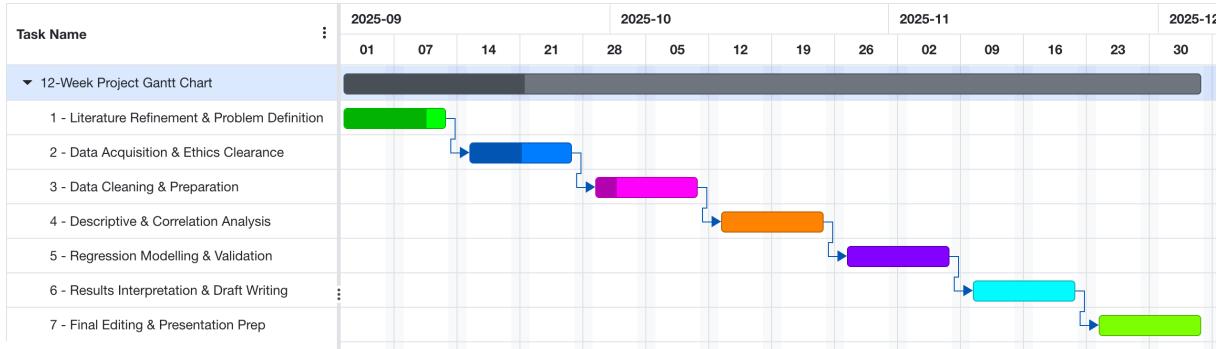


Figure 7 – Project timeline showing overlapping phases throughout the 12-week research cycle.

## 8. Appendices

### 8.1. Appendix A – Company Consent Letter

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End of Appendix Section

### **Statement of Acknowledgment**

I acknowledge that I have used the following AI tool(s) in the creation of this report:

- OpenAI ChatGPT (GPT-5): Used to assist with outlining, refining structure, improving clarity of academic language, and supporting APA 7th referencing conventions.

I confirm that the use of the AI tool has been in accordance with the Torrens University Australia Academic Integrity Policy and TUA, Think and MDS's Position Paper on the Use of AI. I confirm that the final output is authored by me and represents my own critical thinking, analysis, and synthesis of sources. I take full responsibility for the final content of this report.

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