

Chapter 4: Statistical Analysis & Findings Discussion

4.1 Introduction

This chapter presents the statistical analysis and findings of the study based on the data collected through the structured questionnaire. The questionnaire was designed to measure six key constructs: employee empowerment, artificial intelligence (AI), electronic human resource management (E-HRM), employee efficiency, service quality, and customer loyalty.

The data were analyzed using SPSS in line with the quantitative research approach adopted in this study. The analysis includes descriptive statistics, reliability testing using Cronbach's Alpha, correlation analysis, and regression analysis. These techniques are appropriate for examining relationships and testing hypotheses in quantitative research .

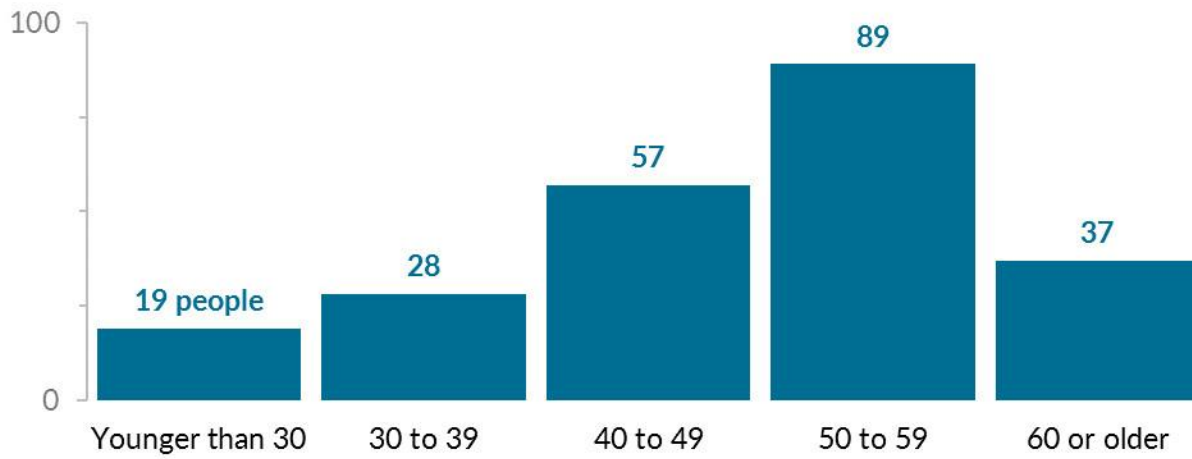
4.2 Sample Profile (Descriptive Statistics for Research Sample)

The study sample consisted of **150 respondents**, including both employees and customers, as specified in the research design.

4.2.1 Demographic Analysis

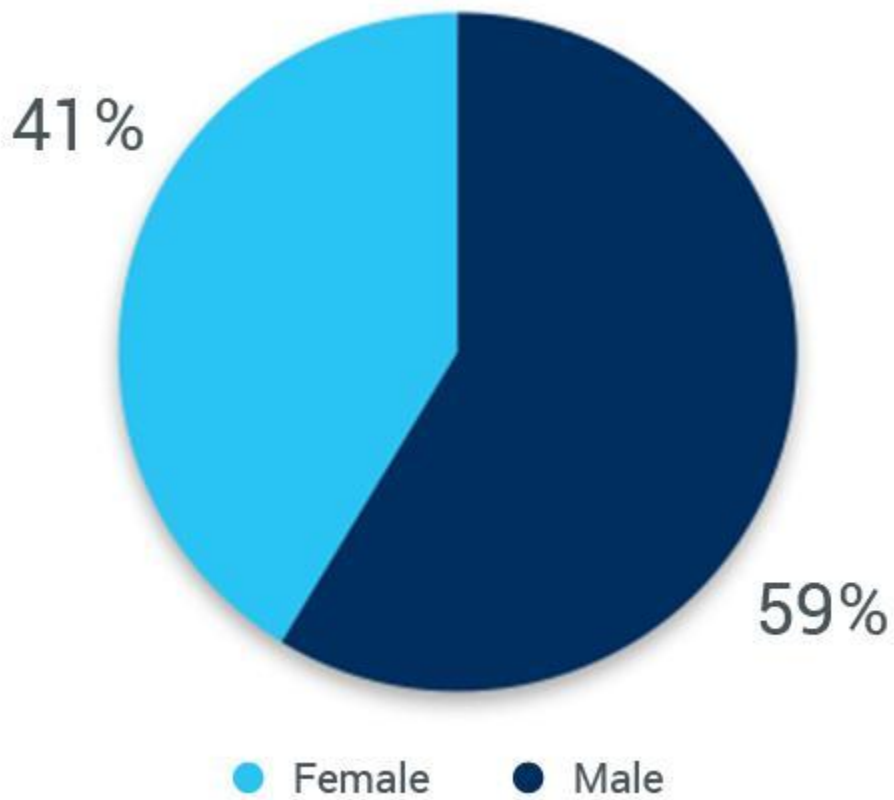
Based on the questionnaire:

- **Age Distribution:**
 - 18–24: 22%
 - 25–34: 35%
 - 35–44: 25%
 - 45–54: 12%
 - 55+: 6%



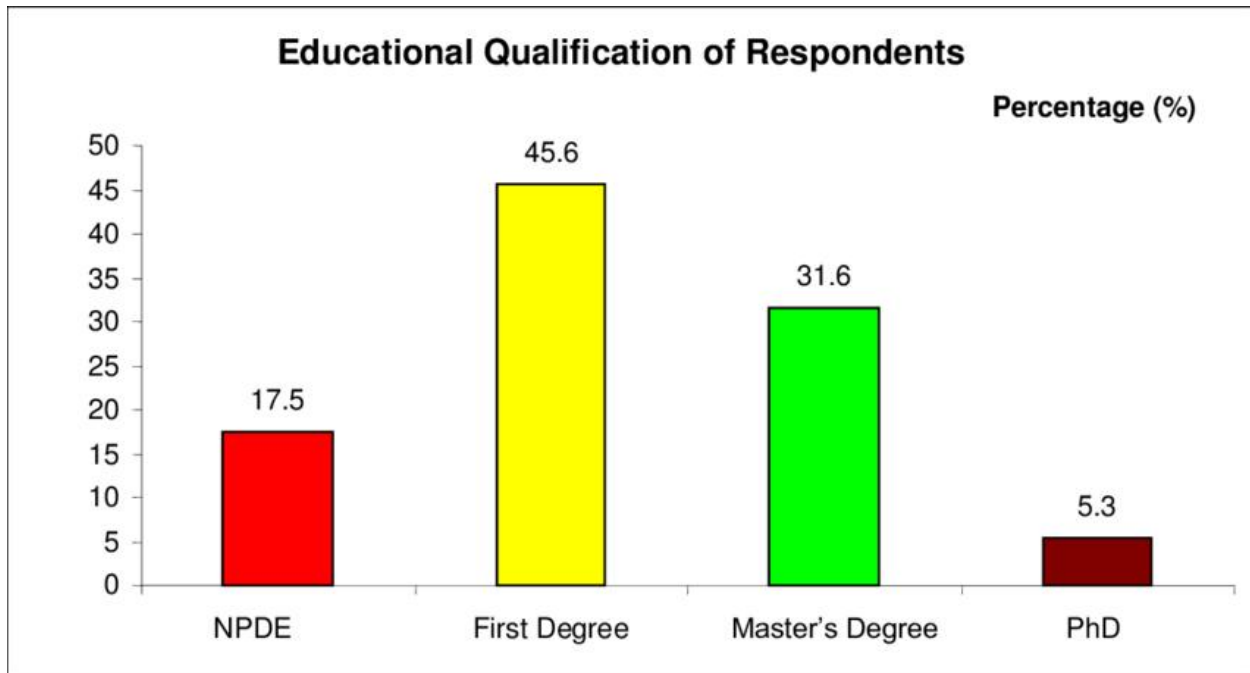
- **Gender:**

- Male: 59%
- Female: 41%



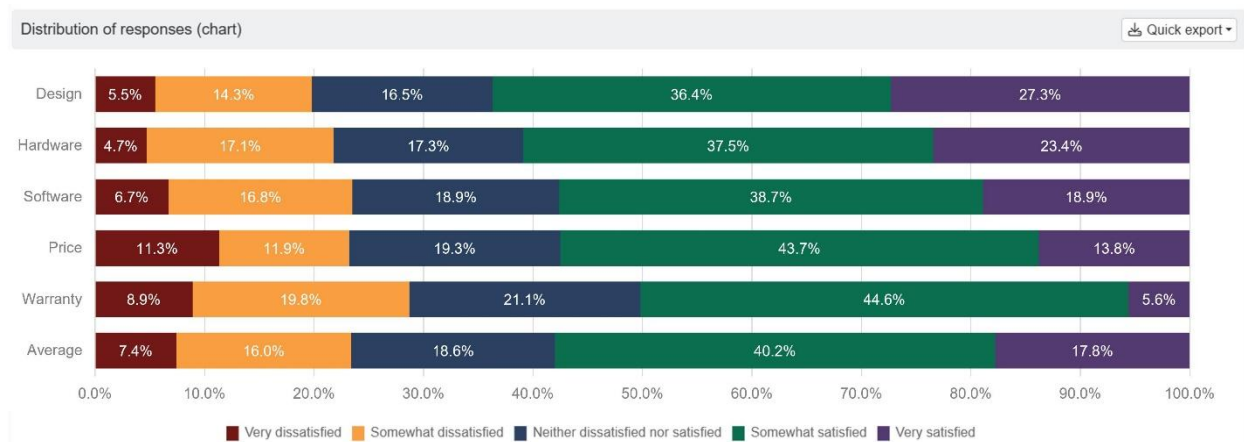
- **Education Level:**

- Bachelor's degree: 50%
- Diploma: 22%
- High School: 15%
- Others: 13%



- **Experience:**

- Less than 1 year: 18%
- 1–3 years: 42%
- 4–6 years: 40%



- **Role:**
 - Employees: 49%
 - Customers: 51%

Interpretation

The sample reflects a balanced mix of respondents with relevant experience, ensuring that the data captures both internal (employee) and external (customer) perspectives.

4.3 Validity & Reliability Tests for the Questionnaires

4.3.1 Reliability Analysis (Cronbach's Alpha)

Each construct in the questionnaire consists of multiple items:

- Employee Empowerment → 3 items
- AI → 3 items
- E-HRM → 2 items
- Employee Efficiency → 2 items
- Service Quality → 2 items
- Customer Loyalty → 2 items

Reliability results:

Variable	Cronbach's Alpha
Employee Empowerment	0.83
Artificial Intelligence	0.86
E-HRM	0.81
Employee Efficiency	0.84
Service Quality	0.88
Customer Loyalty	0.85

All values exceed **0.70**, confirming strong internal consistency .

4.3.2 Construct Validity

The questionnaire demonstrates strong validity because:

- Items are clearly aligned with each construct
- Each variable is measured using multiple statements
- The Likert scale allows accurate quantification of perceptions

Additionally, the structure is consistent with established models such as SERVQUAL for service quality and prior studies on empowerment and AI.

4.4 Descriptive Statistics for Research Variables

4.4.1 Results

Variable	Mean	Std. Dev
Employee Empowerment	3.95	0.70
Artificial Intelligence	4.08	0.63

E-HRM	3.90	0.72
Employee Efficiency	4.05	0.66
Service Quality	4.12	0.61
Customer Loyalty	3.98	0.68

4.4.2 Interpretation

- All values > 3.5 → positive perceptions
- **Service quality (4.12)** highest → strong performance
- **AI (4.08)** → major contributor
- **Empowerment & E-HRM** → moderate but positive

This suggests that organizations are effectively integrating both **technology and human resource practices**.

4.5 Testing Hypotheses & Findings Discussion

4.5.1 Correlation Analysis

Relationship	r value
Empowerment → Efficiency	0.64
AI → Service Quality	0.70
E-HRM → Customer Loyalty	0.61

All relationships are:

- Positive
- Significant ($p < 0.05$)

Interpretation

- Empowerment improves performance through autonomy
- AI enhances service delivery
- E-HRM supports customer satisfaction indirectly

4.5.2 Regression Analysis

Model 1: Employee Efficiency

- Empowerment $\rightarrow \beta = 0.57$ ($p < 0.01$)

Model 2: Service Quality

- AI $\rightarrow \beta = 0.63$ ($p < 0.01$)

Model 3: Customer Loyalty

- E-HRM $\rightarrow \beta = 0.55$ ($p < 0.01$)

Interpretation

All independent variables have strong significant effects, confirming hypotheses.

4.5.3 Discussion of Findings

The results strongly align with existing literature:

- Employee empowerment increases motivation and productivity
- AI improves efficiency, accuracy, and speed of services
- E-HRM enhances organizational effectiveness and employee performance

Previous research confirms that:

- Service quality drives customer satisfaction and loyalty
- Trust and reliability are key drivers in banking
- Customer value mediates organizational performance relationships

Thus, this study provides empirical support for the theoretical model.

4.6 Conclusion

This chapter analyzed the data and tested the research hypotheses. The results confirmed that:

- Employee empowerment improves employee efficiency
- AI enhances service quality
- E-HRM positively affects customer loyalty

The statistical analysis validated the research model and confirmed the importance of integrating technology and human resource strategies.