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Prioritizing Factors Influencing Customer Satisfaction at Credit Corporation using the Analytical Hierarchy Process (AHP)

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ABSTRACT

Customer satisfaction is a critical determinant of organizational success in the financial services sector, particularly for credit institutions facing increasing competition and evolving customer expectations. For any company or organization, meeting customer satisfaction is crucial, as it cultivates customer loyalty and a sense of belonging. This study aims to identify and ranking the factors that influence customer satisfaction with the loan services provided by the Credit Corporation in Sabah, with a particular emphasis on personal loan services. Using the Analytical Hierarchy Process (AHP), this study evaluates five key factors: service quality, human resources, organizational culture, skills, and technology. Primary data were collected through a questionnaire distributed to 25 selected customers. The AHP methodology facilitated the construction of pairwise comparison matrices, the calculation of normalized weights, and the assessment of consistency indices to ensure reliable and unbiased results. The findings indicate that service quality is the most influential factor affecting customer satisfaction, followed by human resources, organizational culture, skills, and technology. The management of the Credit Corporation can leverage these insights to enhance customer satisfaction. These findings provide actionable insights for credit institutions seeking to enhance their customer satisfaction strategies.

Keywords: customer satisfaction, analytical hierarchy process, credit institution, personal loan services

1 INTRODUCTION

In today's service organizations, customer satisfaction is a crucial element in achieving organizational success. In the late 20th century, improving organizational performance to enhance customer satisfaction was a fundamental priority in workplaces [1]. Customer satisfaction refers to the extent to which products or services provided by a company, organization, or individuals meet or exceed the expectations of customers. In this context, every organization, along with its management and employees, plays a significant role in understanding what satisfies their customers. In general, satisfaction refers to a state of being easily contented with something, as it is an outcome that can be achieved by an individual. Customers' satisfaction is one of the key determinants of an institution's success and a major source of disruption for businesses and institutions [2]. Providing for the needs of their customers is a top priority for every business or organization. This is due to the fact that it can foster a feeling of loyalty and belonging among clients. Providing excellent customer service can significantly influence customer satisfaction. Ensuring customer satisfaction, in turn, plays a crucial role in a business's success. Assessing customer satisfaction offers organizations an effective tool for monitoring overall performance, diagnosing weaknesses and addressing them, and enabling organizations to recognize their economic advantages based on current conditions [3]. According to [4], achieving customer satisfaction requires delivering a high-quality service that aligns with the specified requirements. This includes meeting consumer expectations and ensuring a fair exchange of value at an appropriate price, while also offering potential for effective utilization of the service to fulfill customer needs.

This study addresses a significant gap in the literature regarding customer satisfaction in credit institutions within the Malaysian context, particularly in Sabah. While extensive research exists on banking sector customer satisfaction, fewer studies have focused specifically on credit corporations and their unique customer base. Understanding these dynamics is crucial for financial institutions operating in diverse regional markets.

In banking and other financial institutions, customer satisfaction is assessed based on how well the services provided by the organization exceed customer expectations. Customer satisfaction is regarded as the key to success in the highly competitive banking and other financial institution [5]. In banking or any financial institution, customer satisfaction is evaluated based on how well the services provided by the organization exceed customer expectations. High levels of customer satisfaction and positive expectations lead to increased profitability and help the company achieve its goals. Conversely, customer dissatisfaction can negatively impact the organization in various ways. One consequence is that the organization may lose both prospective and existing customers. Therefore, it is crucial for the organization to identify and understand the various factors and variables that impact and influence customer satisfaction. Customer satisfaction is undoubtedly one of the key factors in global market competition. It represents the ultimate objective of an organization’s activities. For instance, banks and other financial institutions, today face rapidly changing markets, economic uncertainties, and increasingly demanding customers. As noted by [1], providing high-quality services and products is a critical factor in enhancing customer satisfaction, which in turn leads to a competitive advantage for the organization. This study is designed to identify the key factors influencing customer satisfaction at Credit Corporation in Sabah and to prioritize these factors based on their importance.

2 LITERATURE REVIEW

The literature review analyzed the factors affecting customer satisfaction, underscoring the complexity of the decision-making process influenced by numerous factors. It also investigated the use of the Analytic Hierarchy Process (AHP) for examining the factors impacting customer satisfaction across different areas.

2.1 Factors Affecting Customer Satisfaction

2.1.1 Service Quality

Service quality is increasingly acknowledged as a crucial determinant of business success [6], and the banking industry and other financial institutions is no exception to this [7]. Banks recognize that customers will remain loyal if they receive superior service compared to competitors [8]. Additionally, banks can achieve higher profits by positioning themselves more effectively than their competitors within a given market [9]. Service quality refers to a provider's ability to meet customer needs efficiently, thereby enhancing business outcomes [10]. Service quality plays a crucial role in ensuring customer satisfaction [11]. The study conducted by [12], found that service quality does influence customer satisfaction to a certain extent, though the two concepts are distinct, and the relationship between them is casual. [11] in their study, suggest that service organizations, such as the auto repair industry in Saudi Arabia, can increase customer satisfaction by improving the quality of their services.

2.1.2 Human Resources

Human resources are considered the most important asset of any organization, as they are crucial for achieving a competitive advantage. Over the past decade, numerous international researchers have highlighted the positive relationship between Human Resources Management (HRM) policies and practices and organizational performance [13], [14], [15]. The collective attitudes and behaviors of employees in organizations can significantly influence customer satisfaction due to their direct interaction with customers [16]. [17] identifies the manner in which service is delivered as a key variable in achieving the objectives of HRM. Empirical analysis has demonstrated that employees' actions are essential for delivering high-quality service, and their morale also affects consumer satisfaction [18]. Long-term customer satisfaction is closely linked to organizational culture, which influences employees' enthusiasm for serving customers [19].

2.1.3 Organizational Culture

An organization's culture is shaped by its experiences and responses to both external and internal challenges. The goal of organizational culture is to foster unity and cohesion, while also encouraging employee enthusiasm and innovation to enhance the company's economic efficiency [20]. Connecting organizational culture with customer satisfaction presents certain empirical challenges [21]. Customer satisfaction directly impacts organizational profitability by drawing customers away from competitors, encouraging frequent transactions, enhancing the business's reputation, reducing costs associated with attracting new customers, and gaining a competitive advantage [22]. [23] investigated the impact of organizational culture on customer satisfaction within the Nigerian banking industry in Benin City. The study found that factors such as the firm's involvement, consistency, adaptability, and mission significantly affect customer satisfaction.

2.1.4 Skills

Customer satisfaction is heavily reliant on the capabilities of employees, making them essential to the success of any company. Employees who interact directly with consumers often play a crucial role in determining their level of satisfaction, thereby ensuring customer contentment and reducing the likelihood of customers seeking alternatives [24]. Employees' abilities and skills in handling customers critically influence a company's success by delivering exceptional service that leads to customer satisfaction [25].

2.1.5 Technology

Rising competition among financial service providers has heightened pressure on profit margins and underscored the strategic importance of technology as a potential means for differentiation and cost reduction [26]. The most prevalent applications of technology in financial services include ATMs for depositing and withdrawing cash, checking account balances and activity, and telephone banking for making payments and transferring funds between accounts. [27] propose that the lack of human interaction could be a primary factor contributing to lower customer satisfaction rates among e-bank users. [28] found positive relationships between the use of electronic banking and customer commitment, between customer satisfaction and commitment, and between trust and commitment. They suggested that customers who trust their bank are likely to use electronic banking effectively, which, in turn, improves their overall satisfaction with the bank.

2.2 Application of AHP in Customer Satisfaction

AHP, developed by [29], is a flexible decision-making tool employed across various domains to handle complex decisions with multiple criteria. It facilitates the decomposition of decisions into more manageable components and quantifies subjective judgments, proving useful in areas such as supply chain management [30], agricultural field [31], resource management [32]. AHP has been effectively applied to understand and enhance customer satisfaction across various industries. By breaking down complex decision-making problems into hierarchical structures of objectives, criteria, and alternatives, AHP facilitates the identification and prioritization of factors influencing customer satisfaction. Studies have utilized AHP to rank the relative importance of different factors affecting customer satisfaction. For instance, [33] applied AHP to assess factors impacting customer satisfaction in the telecommunications sector, while [34]) used AHP to determine the factors affecting consumer satisfaction with mobile payment services. Similarly, [35] employed AHP to identify and analyze criteria relevant to customer satisfaction in bakeshops in Argao and Dalaguete, Philippines.

3 METHODOLOGY

This section discusses the research design, sample selection, data collection process and the application of AHP method to rank factors influencing customer satisfaction at Credit Corporation in Sabah.

3.1 Research Design

This study adopts a quantitative approach, utilizing the Analytical Hierarchy Process (AHP) to assess customer preferences and rank the factors influencing customer satisfaction. The research was conducted from July to October 2014 at Credit Corporation branches in Sabah, Malaysia.

3.2 Sample Selection

The sample size of 25 respondents was determined based on AHP methodology requirements, which emphasize the quality and consistency of expert judgments over large sample sizes. Respondents were selected using purposive sampling to ensure they had recent experience with the corporation's personal loan services.

3.3 Data Collection

In this study, questionnaire was developed based on the important factors that had been identified from the literature review. This study involves five important factors: service quality, human resources, organizational culture, skills, and technology. A questionnaire was distributed to 25 selected customers at Credit Corporation in Sabah. Respondents are required to provide information about their demographic profile and to make comparisons among five important factors. The demographic information of the 25 respondents involved in this study is presented below.

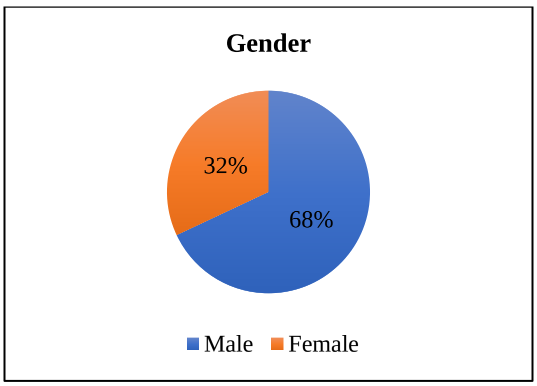

Figure 1 : The gender of respondents

Figure 1 presents the gender distribution of the respondents. Males constitute 68% (17 respondents) of the total, while the remaining respondents are female. This indicates that a higher proportion of male apply for personal loans compared to female.

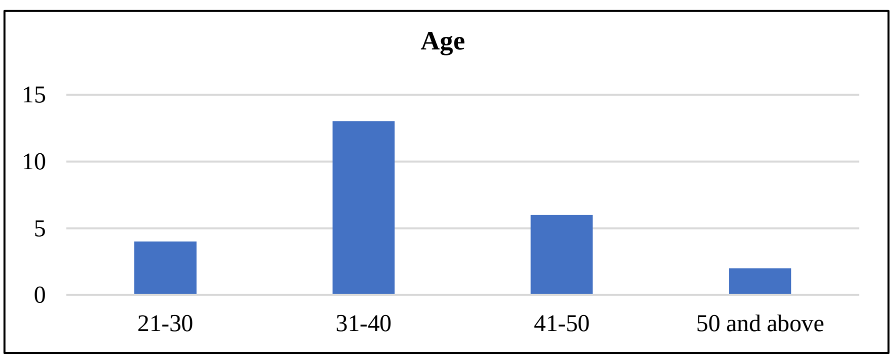

Figure 2: The age of respondents

Figure 2 displays the age distribution of respondents who applied for personal loans at Credit Corporation in Sabah. The results reveal that the majority of applicants were between 31 and 40 years old. Therefore, it can be concluded that this age group exhibits a higher level of financial commitment compared to other age groups.

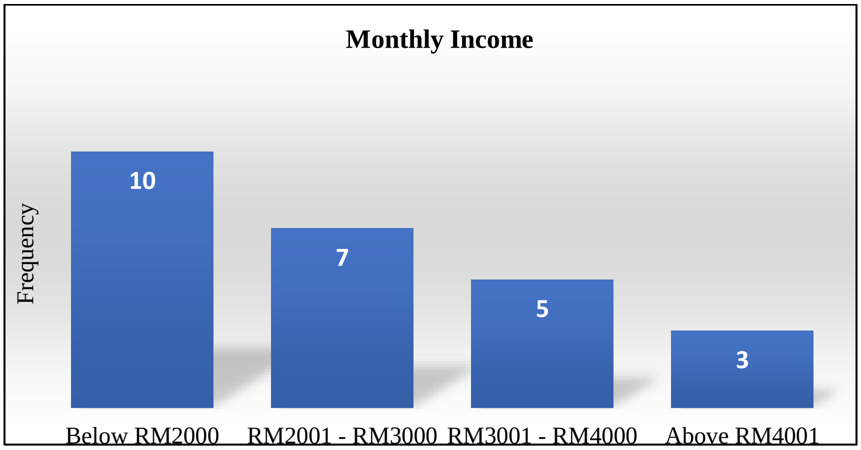

Figure 3: The monthly income of respondents

Figure 3 illustrates the monthly income distribution of the respondents. The results show that the majority of applicants have a monthly income of less than RM2000.

3.4 Analytical Hierarchy Process (AHP)

Pairwise comparison matrix is the first step of developing the AHP model. The weightings of the comparison for each criterion is rated using nine scales of importance [29], as shown in Table 1. Respondents were required to rank the criteria (factor) based on their preference level by comparing them one pair at a time.

Table 1 : Preference scale of AHP pairwise comparison

Scale	Preference
1	Equally Preferred
3	Moderately Preferred
5	Strongly Preferred
7	Very Strongly Preferred
9	Extreme Strongly Preferred
2,4,6, and 8	Intermediate values

Using the AHP, researchers can rank the variables subjected to a comparison that contribute to customer satisfaction. This ability to quantify sets the AHP apart from other decision-making techniques. The completed questionnaires are first analyzed and then converted into matrix format, as shown in equation (1).

$$M = \begin{bmatrix} 1 & a_{12} & \dots & a_{1n} \\ a_{21} & 1 & \dots & a_{2n} \\ \dots & \dots & 1 & \dots \\ a_{m1} & a_{m2} & \dots & 1 \end{bmatrix} \tag{1}$$

The above matrix is used to compute the weight for each criterion using Microsoft Excel. The synthetization process is then conducted to derive the preference matrix, which allows for the calculation of the overall score for each decision criterion. The next stage in the AHP calculation involves determining the Consistency Ratio (CR) of the ratings. The consistency ratio assesses the degree of consistency in the respondents' judgments, who are regarded as experts, in relation to one another. For decisions to be considered trustworthy and reliable, the Consistency Ratio (CR) must be equal to or less than 0.10 (29.). The Consistency Index (CI) must be determined prior to calculating the Consistency Ratio (CR). Equation (2) presents the formula for calculating Consistency Index (CI).

$$Consistency\ Index\ (CI) = \frac{Average\ of\ Consistency\ Measure - n}{n-1} \tag{2}$$

where *n* denotes the number of rows in the matrix.

The Consistency Ratio (CR) calculation is as presented in equation (3):

$$Consistency\ Ratio\ (CR) = \frac{Consistency\ Index\ (CI)}{Random\ Index\ (RI)} \tag{3}$$

The Random Index (RI), established by [29] is outlined in Table 2:

Table 2 : Random index (RI)

n	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
RI	0.00	0.58	0.90	1.12	1.24	1.32	1.41	1.45	1.51

If the degree of consistency is below 0.10, the results are considered acceptable; otherwise, the pairwise comparison procedure must be reevaluated and repeated until an acceptable result of 0.10 or lower is achieved.

4 RESULTS AND DISCUSSION

The pairwise comparison matrix is the initial step in developing the AHP model. Table 3 provides an example of a pairwise comparison matrix, where each factor is compared against another, as completed by one respondent. This matrix is used to assess the relative importance of each factor in relation to the others.

Table 3 : Pairwise comparison matrix of each factor

Factor	Service Quality	Human Resource	Organizational Culture	Skills	Technology
Service Quality	1	3	5	7	3
Human Resource	1/3	1	3	4	3
Organizational Culture	1/5	1/3	1	1/2	1/3
Skills	1/7	1/4	2	1	2
Technology	1/3	1/3	3	1/2	1

After completing the pairwise comparisons, it is necessary to evaluate the consistency of these matrices to ensure the validity of the comparisons. The next step in the AHP process is to obtain the normalized matrix and compute the weights associated with each pairwise comparison matrix, as shown in Table 4. To normalize the pairwise comparisons in Table 3, each cell is divided by the column sum. Table 4 presents the normalized matrix for each pairwise comparison. The weight of each factor is then determined by calculating the average of the values in each row.

Table 4 : Normalized matrix of each factor

Factor	Service Quality	Human Resource	Organizational Culture	Skills	Technology	Weight
Service Quality	0.4976	0.6102	0.3571	0.5385	0.3214	0.4650
Human Resource	0.1659	0.2034	0.2143	0.3077	0.3214	0.2425
Organizational Culture	0.0995	0.0678	0.0714	0.0385	0.0357	0.0626
Skills	0.0711	0.0508	0.1429	0.0769	0.2143	0.1112
Technology	0.1659	0.0678	0.2143	0.0385	0.1071	0.1187

The degree of consistency is then calculated, if the value less than 0.10 (CR < 0.10), the questionnaire is accepted for the next stage of the process. Using the row averages obtained for each criterion, an overall ranking can be established. In this study, all pairwise comparisons were confirmed to be consistent, as the calculated CR values were found to be less than 0.10. The overall score for each factor is calculated by summing the weights for that factor across all respondents and dividing the result by the total number of respondents.

Table 5 : Overall score and rank for factor

Factor	**Score**	**Rank**
Service Quality	0.3676	1
Human Resource	0.2105	2
Organizational Culture	0.1867	3
Skills	0.1223	4
Technology	0.1129	5

Table 5 presents the ranking of the five factors. Service quality is identified as the most important factor, followed by human resources as the second most significant. Organizational culture ranks third, with skills and technology occupying the fourth and fifth positions, respectively.

5 CONCLUSION

In conclusion, this study examined the factors influencing consumer satisfaction with loan services provided by the Credit Corporation in Sabah, particularly focusing on personal loan services. The findings revealed that quality service is the most significant factor affecting customer satisfaction. Furthermore, the study demonstrated the effectiveness of the AHP method in quantifying and integrating complex criteria within a unified decision-making framework, which aids management in minimizing errors in decision-making. By classifying the factors that impact customer satisfaction, the study identifies their priorities, providing valuable insights for the organization's top management. This understanding underscores their crucial role in ensuring the organization's survival in the competitive financial industry. Ultimately, the study emphasizes the necessity of delivering not only high-quality services and products but also maintaining an effective human resource team with the requisite skills. Additionally, it highlights the importance of fostering a positive organizational environment and effectively utilizing technology to meet the needs of customers at the Credit Corporation in Sabah within the required time frame.

This study has several limitations that should be considered. First, the sample size, while appropriate for AHP methodology, may limit generalizability to larger populations. Second, the study focused on personal loans, and findings may differ for other financial products. Future research could expand the scope to include other financial services and geographical regions.

For practitioners, the findings highlight several actionable strategies to improve customer satisfaction. These include investing in service quality training and implementing effective monitoring systems, strengthening human resource development programs, integrating technology in ways that support and enhance human interaction rather than replacing it, and initiating cultural transformation efforts that align with customer expectations.

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