



Selection of CRM Systems Using Objective Criteria for the Needs of Small Companies



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Abstract: This research examines customer relationship management (CRM) systems using multi-criteria decision-making (MCDM) methods, with the intention of selecting the most suitable solution for small companies. The main goal of this research is to make a decision when choosing a CRM system by applying an objective approach. For this purpose, objective criteria were used, and an objective evaluation of the observed CRM systems was conducted. By using the MEREC (METHod based on the Removal Effects of Criteria) method, the importance of the criteria was determined, while the CORASO (COMpromise Ranking from Alternative SOLUTIONS) method was applied to rank the CRM systems. These methods were combined using a methodology into a hybrid approach. The results of this approach indicate that CRM systems with a higher degree of integration and automation achieved a higher rank, while systems with limited functionalities and longer implementation times received a lower ranking. This analysis confirms the importance of CRM systems in optimizing business processes, improving customer satisfaction, and enhancing marketing activities in companies. The results of the research can assist small companies in making decisions when selecting a CRM system. The contribution of this research is to provide efficient decision-making in the selection of a CRM system, thereby strengthening the companies' operations and improving their performance.

Keywords: CRM systems; Decision making; Multi-criteria decision-making methods

1 Introduction

Daily changes in the market and increasing competition create pressure on companies' operations [1]. They must enhance their businesses by keeping up with constant changes [2]. To achieve this, companies are increasingly utilizing software solutions in their operations. Customers are essential for every company, as it cannot operate without them [3]. To manage customer relationships, customer relationship management (CRM) systems are employed. CRM systems play a key role in customer relationships, which is a prerequisite for achieving business success. They provide the ability for a personalized approach to each customer. By applying this approach, each customer feels valued, as the company pays attention to them, thereby increasing their satisfaction [4]. A satisfied customer transforms into a loyal customer who remains a long-term partner for the company [5].

CRM systems, besides allowing for a better understanding of the customer, also contribute to the improvement of internal processes within the company [6]. They assist by automating tasks related to tracking sales, managing communications, analyzing data, reducing costs, and increasing efficiency. With these programs, companies can respond faster to customer requests and personalize their offerings. It is possible to integrate CRM systems with other tools, enabling companies to create marketing campaigns more easily and establish better customer support [7]. Customer expectations are steadily increasing, making it increasingly challenging for companies to adapt to their demands. Therefore, the implementation of CRM systems has become a necessity for achieving a strategic advantage over the competition. The goal of every company is to cultivate loyal customers and contribute to sustainable business practices [8]. For companies to adapt to customers, they personalize marketing activities [9]. This is crucial to compete with rivals.

Modern CRM systems can be enhanced with artificial intelligence (AI) tools and machine learning tools to enable more precise analysis and predictions [10]. Such tools allow for the identification of loyal customers and the forecasting of their future needs. This not only reduces marketing costs but also increases effectiveness, as many

more personalized offers can be generated for customers. To successfully implement these systems, a conducive environment within companies must be created [11]. This involves influencing corporate culture and training employees to use these systems. Additionally, employees must also be motivated to utilize these systems. Only in this way can they harness the potential that CRM systems provide.

The application of CRM systems is becoming increasingly important in the era of digital transformation, where data and analytics form the basis for making strategic decisions. However, due to the wide range of available CRM solutions and the diverse needs of organizations, evaluating and selecting the most suitable system presents a complex challenge. To conduct an evaluation of CRM systems for small businesses, this research utilized an objective assessment of these systems through multi-criteria decision-making (MCDM) methods. The criteria were chosen to enable the objective evaluation of selected CRM systems in this study.

In a dynamic environment, CRM becomes a significant tool for achieving company success. Competition is increasing, as are customer demands, so companies must adapt to these demands and thus compete with their rivals. The CRM system helps by allowing greater attention to be given to each customer. The motivation for this research stems from the need to optimize and improve the business processes of small companies through CRM systems. Therefore, this research supports small businesses in selecting a CRM system using MCDM methods. The use of the MEREC (MEthod based on the Removal Effects of Criteria) method for objectively determining weights will establish the importance of the criteria, while the CORASO (COmpromise Ranking from Alternative SOLUTIONS) method will evaluate CRM systems based on their characteristics, thereby facilitating decision-making regarding the choice of CRM system. This will be carried out through a systematic analysis and ranking of CRM systems. The aim is to provide useful information to small companies looking for a CRM system about how to select the most suitable system.

The main aim of this work is to evaluate CRM systems and select the one that best suits small companies based on the application of MCDM methods and objective criteria for analyzing these systems. By using these methods, the research will facilitate the selection of the most suitable CRM system for small companies, with the goal of optimizing business processes and improving customer relationships. The research will be based on the objective assessment of the observed CRM systems, taking into account key factors that influence their efficiency and acceptability in small companies. Based on this main objective of the research, specific research objectives are set, including:

- Identify key criteria for the evaluation of CRM systems.
- Define and explain the selected criteria for the selection of the CRM system.
- Apply the MEREC method to determine the weight of the criteria.
- Rank CRM systems using the CORASO method.
- Analyze the results and provide recommendations regarding the selection of a CRM system for the needs of small companies.

Based on the established goals of this research, the contribution of this paper is multifaceted and is reflected in theoretical, practical, and methodological terms. The theoretical contribution is evident through the development of a methodology for the application of the MEREC and CORASO methods in the evaluation of CRM systems. Consequently, a systematic approach to the evaluation of CRM systems will be adopted, which can serve for the development of this approach in future similar studies. The practical contribution of this research is manifested by providing useful information to companies that need to select a CRM system. The results obtained from this research can serve as guidelines for small companies on how to choose a CRM system that best fits their operations. The methodological contribution of this research is reflected in the development of a hybrid methodology based on the use of the MEREC and CORASO methods. This represents an innovative approach to CRM system evaluation based on objective analysis. Furthermore, this paper will demonstrate how to use these methods in real situations, which can be very beneficial for both researchers and practitioners, as well as for companies.

2 Methodology

Based on the established goal, research is being conducted on the selection of CRM systems using objective criteria. By applying this approach, the aim was to carry out an evaluation of CRM systems for the needs of small companies as objectively as possible. In addition to the ranking process itself, the application of the MCDM model provides excellent conditions for analyzing alternatives [12, 13], in this particular case, CRM systems. Therefore, it is often applied even when it is not necessary to define rankings but rather to perform a detailed analysis [14, 15].

First, it was necessary to determine the criteria that would be used for evaluating CRM systems. The evaluation of these systems could be applied in several ways, but efforts were made to obtain objective assessments of these systems. For this reason, nine criteria were chosen for the evaluation. The criteria to be used in this paper were selected based on a review of the literature, an analysis of the needs of small companies, and consultation with experts.

The monthly price per user (C1) represents the amount paid for each user of the CRM system on a monthly basis. This represents a cost that the company must allocate to utilize these systems [16]. This is important for small

companies that have a limited budget. However, a lower price for CRM systems usually means less functionality. The higher the price of these systems, the more advanced options and support users can expect to receive. It would be desirable for the price to be balanced with the quality of service and functionality of the CRM system. Therefore, it is very important to achieve a balance between price and quality when selecting a CRM system.

The number of available integrations (C2) represents the capability of the CRM system to connect with other platforms and tools that companies are already using [17]. A higher number of integrations means that better data exchange between these platforms and tools is enabled, contributing to increased efficiency and productivity for companies. Better and greater integration capability allows for the establishment of a centralized software solution within the company.

Implementation time (C3) refers to the period required to implement the CRM system in the operations of a company [18]. If this time is shorter, it means that the company can apply this system sooner and thus gain advantages. However, a shorter implementation time may mean that the system is less demanding or that some aspects of the implementation do not need to be utilized. Therefore, longer implementation time may imply that the system is more complex, has more functions that can be used, and requires more time for employee training. This criterion is crucial if small companies wish to implement this system as quickly as possible.

The number of available automations (C4) in the CRM system denotes the capabilities of the system to carry out specific business processes independently, without the need for human intervention [19]. This reduces the necessary manual work and enhances the efficiency of the business process, as the system can execute it immediately. Productivity is also increased for the company utilizing such a CRM. Furthermore, it can help reduce human errors associated with sending incorrect emails to customers. Of course, it is essential to ensure that the CRM offers a wide range of automation options to meet the demands of the company. This criterion is crucial for companies looking to optimize their business processes and reduce marketing costs.

The average user rating (C5) represents users' opinions about a particular CRM system [17]. The higher the ratings, the greater the user satisfaction with the CRM system. This satisfaction relates to functionality, support, and experience with the systems. This criterion is important because new users have information about the experiences of other users. The better this experience, the more one can assume that the CRM system is reliable for use. It is important to note that individual ratings are not considered, but rather average ratings, as this indicates the general consensus of users.

The number of analytical reports (C6) assists in data analysis and serves as support in decision-making within companies [20]. The greater the number of reports, the deeper the analysis of various aspects of the company's operations becomes possible. However, for these reports to help in decision-making, they need to be relevant, clear, and useful, providing quality information. The better the quality of the data, the easier and faster a decision can be made. This criterion is beneficial for companies that apply strategic planning and allows for monitoring company performance.

The speed of customer support (C7) refers to the time it takes for a user to receive information that will enable problem resolution [21]. A shorter response time is desirable because when there is a problem during the application of the CRM system, quicker resolution contributes to a faster continuation of using the CRM system. Faster support allows for a reduction in business downtime, thereby increasing user satisfaction. For this reason, this criterion is useful for companies, as a CRM system that offers faster support demonstrates better reliability. It is very important to receive prompt assistance with technical difficulties in the application of these systems.

The total number of functionalities (C8) indicates how many different tasks a particular CRM system can perform [20]. In addition, it shows how versatile that system is. A higher number of functionalities are desirable for a company's operations, as it provides greater flexibility and can be better adapted to the company's needs. However, with the increase in functionalities, the cost of using the CRM system usually rises. If there are more functionality, the system allows companies to use it for multiple business processes. This criterion is very important for companies seeking a comprehensive solution.

The number of available languages (C9) indicates how well the CRM system is adapted to specific regions and countries [20]. A greater number of available languages enable multinational companies to use the same system in all of these countries. Moreover, the number of available languages increases user satisfaction since the same system can be applied in multiple regions. Additionally, companies can use CRM systems to collaborate with partners located in other countries and obtain the necessary information for the company from them. However, this criterion is more important for larger companies than for smaller ones, as small companies usually operate within the territory of a single country. To evaluate these criteria as objectively as possible, data from official websites, user reviews, and other independent analyses will be used. Special attention will be paid to ensuring the objectivity and accuracy of the information collected for this research. Of course, in order to evaluate CRM systems, it is also necessary to select the systems that will be assessed. In this research, five CRM systems have been selected, but to protect data, their full names will not be used; only the abbreviation CRM and the corresponding number will be mentioned. Another reason for not using the actual names is that ranking may promote some CRM systems and give them preference

over others. In this way, some systems would be privileged while others would be discriminated against. However, it is up to each company to conduct its own research and choose the system that suits it best. Therefore, this research will use objective evaluations and provide guidelines on how to select CRM systems. The characteristics of these systems are as follows:

- CRM 1 is a very popular CRM system due to its simplicity and the availability of a free basic version. However, this research will evaluate the paid version because a fee is charged for using other systems. The free version offers basic tools and is suitable for small companies that are just starting to use a CRM system, while the advanced functions of this system are available for an additional fee. This system provides the ability to generate real-time reports and offers analyses and tools for improving marketing processes. Additionally, it offers tools for managing contacts, tracking interactions with customers, and automating marketing operations.

- CRM 2 is a versatile and flexible CRM system that enables efficient management of marketing activities. It includes all advanced functions for managing customer relationships. Additionally, it is recognized for its features that allow users to customize this CRM to their needs. It offers good integration with many other popular applications. Compared to some other systems, it can be a bit complex for beginners. It is suitable for companies of various sizes.

- The CRM 3 system is essentially a simplified version of a more advanced CRM system. This system offers basic functions for managing marketing activities. Furthermore, it provides a modular framework suitable for small and medium-sized companies. As a result, it can be upgraded based on the functions required by a specific company. It also offers robust support through integration with other tools and applications, making it a highly flexible system.

- The CRM 4 system presents a simple yet capable solution that focuses on supporting sales teams. This system includes functions for executing marketing activities. It is highly adaptable to business needs and can integrate with other business applications. It is renowned for its well-designed user interface, and the cost of using this system is affordable. A mobile application is also available as part of this system. However, the number of functionalities is limited compared to some competitors.

- The CRM 5 system is not a traditional solution like other CRM systems, but it provides flexible tools for managing customer relationships. It is suitable for companies seeking a more visually oriented system. Through visual solutions, it allows users to easily identify tasks and deadlines associated with those tasks. However, compared to other CRM systems, it lacks certain functionalities, which can be a limitation for some companies. Like other systems, this one also provides the possibility of automation and integration with other business systems.

After briefly explaining the CRM systems that will be evaluated, it is necessary to clarify the methods that will be used in this evaluation. In this research, a combination of the MEREC and CORASO methods will be employed. These two methods will be combined to create a hybrid methodology. The MEREC method is a process for objectively determining the weights of criteria. It was developed by Keshavarz-Ghorabae et al. [22]. In this method, the normalization process will be adjusted to apply the same normalization as the CORASO method. This adjustment is necessary because the original form of this method transforms all criteria into cost criteria; then, the weights of the criteria are sought [23, 24]. The CORASO method was initially used for ranking drones in agriculture by Puška et al. [25]. This method ranks alternatives based on the distance from alternative solutions. The method is very simple and easy to use. The hybrid methodology combining these two methods consists of the following steps:

Step 1. Establishing the decision matrix.

Step 2. Normalizing the decision matrix.

$$n_{ij} = \frac{x_{ij}}{\max x_j}; \text{ for benefit criteria} \quad (1)$$

$$n_{ij} = \frac{\min x_j}{x_{ij}}; \text{ for cost criteria} \quad (2)$$

where, $x_{j \min}$ – minimum criterion value, and $x_{j \max}$ – maximum criterion value.

This first step is the same for both methods. After that, the steps of the MEREC method are applied.

Step 3. Calculation of the total performance of the alternatives (S_i).

$$S_i = \ln \left(1 + \left(\frac{1}{m} \sum_j |\ln (n_{ij}^x)| \right) \right) \quad (3)$$

Step 4. Calculating the effects of alternatives.

$$S'_{ij} = \ln \left(1 + \left(\frac{1}{m} \sum_{k, k \neq j} |\ln (n_{ik}^x)| \right) \right) \quad (4)$$

Step 5. Calculation of the sum of deviations.

$$E_j = \sum_i |S'_{ij} - S_i| \quad (5)$$

Step 6. Calculating criterion weights.

$$w_j = \frac{E_j}{\sum_k E_k} \quad (6)$$

After that, the steps of the CORASO method are carried out.

Step 7. Determination of alternative solutions.

Step 8. Making normalized alternatives more difficult.

$$v_j = w_j \cdot n_{ij} \quad (7)$$

Step 9. Calculation of aggregate values.

$$S_j = \sum_{i=1}^n \tilde{v}_j \quad (8)$$

Step 10. Calculation of deviations from alternative solutions.

$$R_j = \frac{S_j}{S_{j \max AS}} \quad (9)$$

$$R'_j = \frac{S_{\min AS}}{S_j} \quad (10)$$

Step 11. Determining the value of the CORASO method.

$$Q_i = \frac{R_j - R'_j}{R_j + R'_j} \quad (11)$$

After the ranking list is formed, a sensitivity analysis will be conducted. This analysis aims to examine how changing the weights of the criteria affects the final ranking of the CRM systems.

3 Results

As stated in the research methodology, a decision matrix is established first. This decision matrix is created by visiting the websites of these CRM system manufacturers to gather data on technical characteristics. Then, user rating websites are consulted, followed by other independent analyses to objectively evaluate these CRM systems based on the selected criteria (Table 1).

Table 1. Decision matrix

| | C1 | C2 | C3 | C4 | C5 | C6 | C7 | C8 | C9 |
|-------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | min | max | min | max | max | max | min | max | max |
| CRM 1 | 16 | 500 | 2 | 50 | 4.5 | 20 | 2 | 100 | 10 |
| CRM 2 | 14 | 800 | 5 | 100 | 4.4 | 50 | 3 | 200 | 20 |
| CRM 3 | 25 | 3000 | 9 | 200 | 4.6 | 100 | 1 | 300 | 25 |
| CRM 4 | 15 | 400 | 3 | 50 | 4.3 | 20 | 2 | 100 | 10 |
| CRM 5 | 10 | 200 | 2 | 30 | 4.2 | 10 | 3 | 50 | 50 |

After establishing the decision matrix, it is necessary to determine which criteria values should be higher and which lower in order for a CRM system to be better. This is indicated by the min and max labels. For example, the price per user should be lower in order for the CRM system to be more convenient to use, while the available integrations should be as large as possible. In this way, it is determined for all criteria. This is important because of the fact that which normalization will be used, which is the next step of this methodology. In the example of CRM 1 and criteria C1 and C4, the normalization calculation is performed as follows:

$$n_{11} = \frac{10}{16} = 0.625; n_{14} = \frac{50}{200} = 0.250$$

This step is the same for both methods. First, the steps of the MEREC method are applied. After normalization, the total performance of the alternatives (S_i) is calculated. This step is applied by first calculating the absolute value of the natural logarithm, then dividing this sum by the number of criteria and adding the value one. Finally, the natural logarithm of this obtained value is calculated. The calculation of the effects of the alternatives (S'_{ij}) is done in the same manner, except that the criterion for which this value is computed is not included in the sum. Lastly, the sum of the deviations is calculated (E_j) and weight of criteria (w_j) (Table 2). The results of this method indicate that the most important criterion is C2-Number of available integrations, followed by C6-Number of analytical reports, while the least important criterion is C5-Average user rating.

Table 2. Steps of the MEREC method

| | | C1 | C2 | C3 | C4 | C5 | C6 | C7 | C8 | C9 | S_i |
|-----------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | CRM 1 | 0.4700 | 1.7918 | 0.0000 | 1.3863 | 0.0220 | 1.6094 | 0.6931 | 1.0986 | 1.6094 | 0.6752 |
| | CRM 2 | 0.3365 | 1.3218 | 0.9163 | 0.6931 | 0.0445 | 0.6931 | 1.0986 | 0.4055 | 0.9163 | 0.5388 |
| | CRM 3 | 0.9163 | 0.0000 | 1.5041 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.6931 | 0.2971 |
| | CRM 4 | 0.4055 | 2.0149 | 0.4055 | 1.3863 | 0.0674 | 1.6094 | 0.6931 | 1.0986 | 1.6094 | 0.7091 |
| | CRM 5 | 0.0000 | 2.7081 | 0.0000 | 1.8971 | 0.0910 | 2.3026 | 1.0986 | 1.7918 | 0.0000 | 0.7414 |
| | | C1 | C2 | C3 | C4 | C5 | C6 | C7 | C8 | C9 | |
| | CRM 1 | 0.6483 | 0.5684 | 0.6752 | 0.5936 | 0.6740 | 0.5798 | 0.6353 | 0.6111 | 0.5798 | |
| | CRM 2 | 0.5168 | 0.4492 | 0.4776 | 0.4928 | 0.5359 | 0.4928 | 0.4649 | 0.5122 | 0.4776 | |
| S'_{ij} | CRM 3 | 0.2184 | 0.2971 | 0.1645 | 0.2971 | 0.2971 | 0.2971 | 0.2971 | 0.2971 | 0.2382 | |
| | CRM 4 | 0.6867 | 0.5924 | 0.6867 | 0.6303 | 0.7054 | 0.6170 | 0.6705 | 0.6472 | 0.6170 | |
| | CRM 5 | 0.7414 | 0.5866 | 0.7414 | 0.6355 | 0.7365 | 0.6114 | 0.6814 | 0.6417 | 0.7414 | |
| | E_j | 0.1501 | 0.4679 | 0.2162 | 0.3123 | 0.0127 | 0.3635 | 0.2124 | 0.2524 | 0.3077 | |
| | W_j | 0.0654 | 0.2039 | 0.0942 | 0.1361 | 0.0055 | 0.1584 | 0.0926 | 0.1100 | 0.1341 | |

After the importance of the criteria is calculated, an evaluation is performed using the CORASO method. After normalization, alternative solutions are determined, namely maximum and minimum. The maximum alternative solution is identified by finding the highest values of the alternatives for each individual criterion, while the minimum alternative solutions are determined by locating the lowest values of the alternatives for each criterion. Then, the weighting of the normalized alternatives is applied. In the example of CRM 1 and criterion C1, this looks like this:

$$v_{11} = 0.0654 \cdot 0.6250 = 0.0409$$

In the same way, the weighting values of the alternatives are then calculated and then the summary values are calculated (S_j) difficult alternatives. After that, the deviations from the alternative solutions are calculated (R_j) and (R'_j). In the example of CRM 1, this looks like this:

$$R_1 = \frac{0.3459}{1.0000} = 0.3459, R'_j = \frac{0.1771}{0.3459} = 0.5119$$

When deviations from alternative solutions are calculated, the final value of the CORASO method is calculated (Q_i). In the example of CRM 1, this looks like this:

$$Q_1 = \frac{0.3459 - 0.5119}{0.3459 - 0.5119} = -0.1935$$

The results of the CORASO method (Table 3) show that the CRM 3 system is ranked best, followed by the CRM 2 system, while the CRM 4 system is ranked worst.

After the evaluation of the CRM system is completed, a sensitivity analysis is performed. According to Więckowski and Sałabun [26], sensitivity analysis is an extremely important and unavoidable step in the model's development. Different approaches to sensitivity analysis exist. The most common method involves changing the weight coefficients of the criteria, and this approach has been presented in numerous papers [27–29]. This analysis will be conducted such that in the first scenario, all criteria will hold the same importance, and then the subsequent scenarios will be formed by assigning one criterion three times more importance than the other criteria. Given that there are nine criteria, nine scenarios will be formed. Thus, ten scenarios were created (Table 4).

By applying these scenarios, the results obtained show that in the tenth scenario, the ranking of CRM systems changes, and CRM 2 and CRM 5 altered their rankings. This is due to the fact that, in this scenario, the C9 criterion was prioritized over the other criteria (Figure 1). When the values of these two CRM systems for this criterion are examined, it can be seen that the CRM 2 system has a value for this criterion that is 2.5 times lower than that of the CRM 5 system, which is why the CRM 5 system performed better in this scenario. The other scenarios had no impact on the final ranking of the CRM systems.

Table 3. Steps of the CORASO method

| | S_j | R_j | R'_j | Q_i | Rank |
|--------|--------|--------|--------|---------|------|
| CRM 1 | 0.3459 | 0.3459 | 0.5119 | -0.1935 | 4 |
| CRM 2 | 0.4490 | 0.4490 | 0.3944 | 0.0647 | 2 |
| CRM 3 | 0.8258 | 0.8258 | 0.2144 | 0.5877 | 1 |
| CRM 4 | 0.3116 | 0.3116 | 0.5683 | -0.2918 | 5 |
| CRM 5 | 0.3912 | 0.3912 | 0.4527 | -0.0729 | 3 |
| Max AS | 1.0000 | | | | |
| Min AS | 0.1771 | | | | |

Table 4. Scenarios in sensitivity analysis

| | C1 | C2 | C3 | C4 | C5 | C6 | C7 | C8 | C9 |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| S1 | 0.1111 | 0.1111 | 0.1111 | 0.1111 | 0.1111 | 0.1111 | 0.1111 | 0.1111 | 0.1111 |
| S2 | 0.3000 | 0.1000 | 0.1000 | 0.1000 | 0.1000 | 0.1000 | 0.1000 | 0.1000 | 0.1000 |
| S3 | 0.1000 | 0.3000 | 0.1000 | 0.1000 | 0.1000 | 0.1000 | 0.1000 | 0.1000 | 0.1000 |
| S4 | 0.1000 | 0.1000 | 0.3000 | 0.1000 | 0.1000 | 0.1000 | 0.1000 | 0.1000 | 0.1000 |
| S5 | 0.1000 | 0.1000 | 0.1000 | 0.3000 | 0.1000 | 0.1000 | 0.1000 | 0.1000 | 0.1000 |
| S6 | 0.1000 | 0.1000 | 0.1000 | 0.1000 | 0.3000 | 0.1000 | 0.1000 | 0.1000 | 0.1000 |
| S7 | 0.1000 | 0.1000 | 0.1000 | 0.1000 | 0.1000 | 0.3000 | 0.1000 | 0.1000 | 0.1000 |
| S8 | 0.1000 | 0.1000 | 0.1000 | 0.1000 | 0.1000 | 0.1000 | 0.3000 | 0.1000 | 0.1000 |
| S9 | 0.1000 | 0.1000 | 0.1000 | 0.1000 | 0.1000 | 0.1000 | 0.1000 | 0.3000 | 0.1000 |
| S10 | 0.1000 | 0.1000 | 0.1000 | 0.1000 | 0.1000 | 0.1000 | 0.1000 | 0.1000 | 0.3000 |

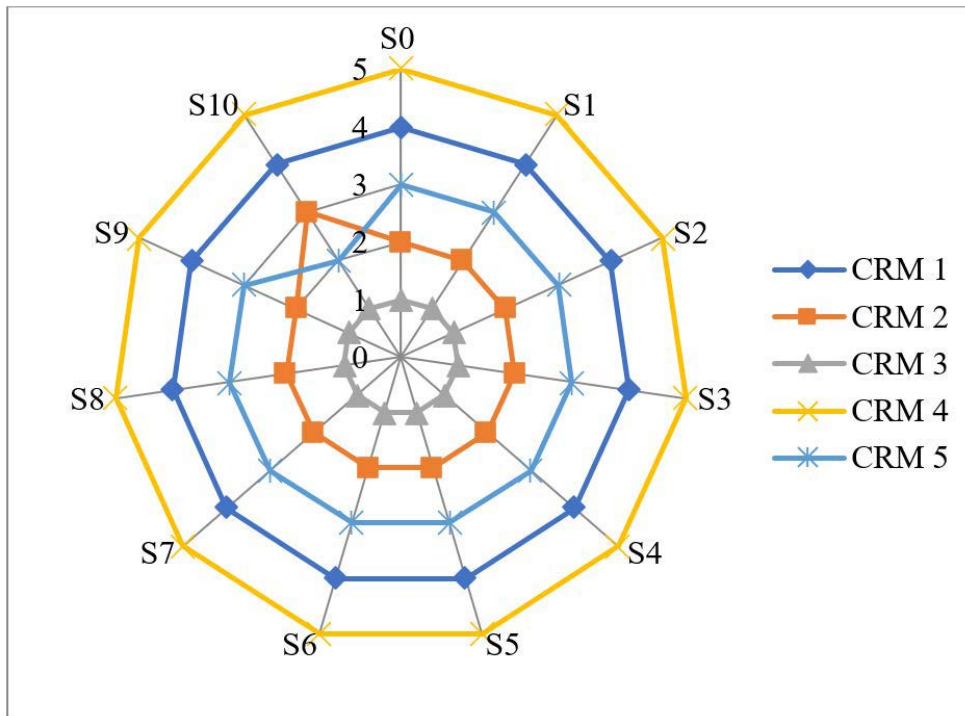


Figure 1. Sensitivity analysis results

4 Discussion

In order for small companies to succeed in the market, they must pay attention to each customer. Companies use CRM systems that help them do this [20]. These systems can perform various functions in marketing operations. However, there are numerous systems on the market that small companies can utilize. Therefore, it is necessary to choose the CRM system that will best help improve the company's business. In this research, the evaluation of CRM systems was carried out using the MCDM method to enable a precise and objective analysis of these systems. In

doing so, a hybrid methodology was formed with the MEREC and CORASO methods. The possibility was used that the MEREC method employs the same decision matrix as the CORASO method. This is because MEREC and other objective methods use the initial decision matrix from the ranking of alternatives to calculate the importance of these criteria based on the deviation of these values in the alternatives. On this basis, the same first step was utilized for both methods, after which the steps of these methods were used to determine which observed CRM system has the best indicators for small companies.

This research applied an objective evaluation of CRM systems in such a way that data about these systems were collected from their websites, user reviews, and other independent sources in order to make the data as objective as possible. However, to accomplish this, criteria had to be selected that could objectively evaluate these systems. Therefore, nine criteria were used in this research, with values that were numerical and objective. Determining the importance of these criteria was performed using the MEREC method. This method prioritizes those criteria that exhibit greater dispersion. Thus, the results of this method showed that the most important criteria are C2 - Number of available integrations and C6 - Number of analytical reports. The reason these criteria were deemed most important is due to the greatest dispersion observed in these criteria. The least dispersion was in the criterion of average user rating, so this criterion was given the least importance. When viewed realistically, almost all companies would value this criterion more when choosing a CRM system. These ratings are provided by users who have already employed these systems. The greater the number of users, the more realistic the ratings. However, this criterion can be misused, so nine criteria were selected to ensure that the results encompass different aspects of these systems.

The research results were obtained by applying a hybrid methodology with the MEREC and CORASO methods. Based on these methods and objective assessments of CRM systems, it was shown that the CRM 3 system has the best outcomes. This is because this CRM system offers the greatest number of functionalities and allows integration with more advanced tools. This system represents an ideal choice for small companies seeking a comprehensive solution. It should be noted that this system embodies a simplified version of a more advanced CRM system. If companies achieve good results with this system, they can then purchase a more advanced version that has additional options that can be utilized in business. However, what limits this system is the high price per user and the longer implementation time, which can be an obstacle for small companies with constrained budgets.

The CRM 2 system was rated as the second-ranked system, but it stood out in terms of the best price-quality ratio. This system, along with the CRM 5 system, is among the most affordable options and possesses a wide range of integrations and advanced functionality, which makes it recognizable among these systems. The CRM 2 system is a viable solution for small companies looking for a flexible and modular CRM system. The third-ranked system was CRM 5, which is not a classic CRM system; however, its tools set it apart from other CRM systems. Nonetheless, the fact that this system is not specialized in implementing CRM in companies makes it a less acceptable solution. Although this system has excellent tools for project management and teamwork, its CRM functionalities are limited compared to those of other observed CRM systems. The worst-ranked systems exhibited great ease of use and quick implementation, but they have a limited number of functions, which can be a disadvantage for a small, growing company. Additionally, these systems lack the advanced functions that other CRM systems provide.

4.1 Implications of the Results

The results of this research have essential implications and address the question of how to objectively choose a CRM system for small companies. When selecting a CRM system, it is crucial to strike a balance between the price and functionality of the system. Some systems may be too expensive for small companies, but they offer advanced options and features. Conversely, some systems are free but provide only basic functions. These free versions are ideal for small companies that are just beginning to utilize CRM systems. This research has demonstrated that small companies must first consider their financial capabilities and needs when selecting a system, as the most expensive solution is not always the best, since it may not align with the company's specific goals. For small companies, the implementation time and ease of use of these systems are particularly important. Systems such as CRM 1, CRM 4, and CRM 5 are characterized by their quick implementation and intuitive user interfaces, making them suitable for companies seeking a swift and simple solution. In contrast, CRM 3 requires a longer implementation and training time, posing a challenge for companies with limited resources. However, this CRM solution offers advanced options, meaning that employee training must be prolonged and the implementation time extended.

Automation and the number of integrations are also vital for the functionality of a CRM system, as they allow specific tasks to be performed automatically. Small companies must be aware that these features of a CRM system may necessitate additional technical resources for maintenance. Therefore, it is very important to choose a CRM system that provides sufficient integration and automation while also considering the technical capabilities of the company. The average user rating is significant for the decision-making process, but this criterion was assigned the least importance due to the uniform ratings of CRM systems. These ratings indicate that users are satisfied with these systems. Companies should also take customer support into account, as the results of this research have shown that quality customer support is essential to resolve technical problems promptly. For small companies that aim to grow,

it is necessary for CRM systems to have modular solutions, allowing the system to be upgraded as needed. Therefore, when purchasing these systems, it should be considered that this system can be enhanced so that the system does not need to be changed as the company expands, as employees are accustomed to that system. The results of this research hold significant implications for small companies facing the challenge of choosing the optimal CRM system. These findings not only provide clear guidance for decision-making but also emphasize key factors that small companies should consider when evaluating CRM systems.

4.2 Research Limits and Directions for Future Research

Although the research provided useful insights into the choice of a CRM system, certain limitations exist. The data used for this research was collected from the official websites of CRM system manufacturers and platforms that review these systems. However, this data can also be manipulative because both negative and positive reviews may be intentional. Additionally, the data from the manufacturer can be presented optimistically, as few people will highlight the negative aspects of their system. Therefore, despite the data being collected independently and efforts made to be as objective as possible, achieving true objectivity is challenging. The data cannot be entirely accurate, so everything must be taken with a grain of salt. This research considered only five CRM systems, while many more exist in the market. However, no single study can encompass all CRM systems available, leading to the decision to use these five as examples to demonstrate the methodology for objectively choosing a CRM system. Future research should cover more CRM systems. By considering additional systems, there may be lesser-known options more suited to specific companies. It should be noted that this research was conducted as a general study and is not focused on a specific company, but rather on small businesses. Therefore, in future studies involving a specific company, it is essential first to examine what type of system the company needs before selecting potential CRM systems and making a choice. This paper should be viewed as conceptual and utilized for future research. Limitations may also arise from the selected criteria, as only those that objectively determine CRM systems were included. Subjective assessments were not employed. Consequently, future research must adapt to the needs of the company for which the research is being conducted. Limitations of this research may also pertain to data that is current and can change daily. Furthermore, the methods used, particularly the MEREC method, may impose limitations. This method assigns weights based on data ranking alternatives, leading to greater importance being assigned to criteria that exhibit greater dispersion among the alternatives. Hence, some crucial criteria for companies may receive less weight, and vice versa. Therefore, future research must also incorporate subjective assessments that represent the specific needs of individual companies.

5 Conclusions

CRM systems are becoming indispensable tools for companies' business operations. They are especially important for achieving competitiveness in the market. By utilizing the functions offered by these systems, it is possible to personalize marketing activities through modern technology in the form of CRM systems. These systems enable companies not only to attract new customers but also to retain existing ones, which ensures the long-term growth and development of the company. This research was designed to objectively examine selected CRM systems and evaluate them using the MCDM method. For this purpose, a hybrid methodology combining the MEREC and CORASO methods was developed. This methodology has proven to be an effective decision-making tool in evaluating software solutions. The MEREC method determined the importance of criteria in an objective manner and indicated that the most significant criteria are the number of available integrations and analytical reports. On the other hand, the CORASO method was employed to rank CRM systems, and its results showed that the CRM 3 system had the best indicators and is recommended for use in small companies. The combination of these methods ensured transparency and reliability throughout the CRM system evaluation process. The results obtained can serve as a reference framework for decision-making when selecting a CRM solution. Introducing this system into small companies enhances their efficiency and productivity. The findings of this research provide guidelines for choosing a CRM system. This study emphasizes the importance of balancing criteria, so it is necessary to balance price, functionality, simplicity, and modularity. Furthermore, it is essential to consider other criteria that may be useful for particular companies. Data on these CRM systems and the outcomes indicate that there is no single system that is best for all companies. The choice depends on the characteristics of each company, and the selection must be tailored to that company. The research conducted serves as a starting point for small companies when choosing a CRM system and lays the groundwork for future research.

Data Availability

The data used to support the research findings are available from the corresponding author upon request.

Conflict of Interests

The author declares no conflict of interest.

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