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Analysis of Enterprise Resource Planning system using VIKOR Method

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Abstract. Enterprise Resource Planning (ERP) When implementing settings, most of the companies faced some problems, one of them is their requirements and how to decide the best ERP software that meets expectations Choosing Best Custom ERP Software has been around for a long time an important issue, Because the wrongly selected ERP software requires time and A company's expenses and Impact on market share. On the other hand, ERP software selection is Several criteria are used to make the decision MCDM Problems in literature, to assess this type of problem Several methods have been introduced, one of them is Analytical Hierarchy Process (AHP), It is widely used in MCDM selection problems. COPRAS (Complex Proportionality Assessment) and Based on the concepts of AHP (Analytic Hierarchy Process). A new fuzzy MCDM method is proposed to evaluate the potential maintenance strategy. To estimate ratings and weights Linguistic terms are used. Fuzzy AHP estimation used to calculate the weights of criteria; then, fuzzy set theory and A ranking of alternatives is calculated based on COPRAS. The COPRAS method using for Enterprise Resource Planning (ERP) software selection. It includes General System Specifications (GSS), Manufacturing Module (PM), Financial Management Module (FMM), Quality Management Module (QMM), Sales and Distribution Module (SDM), Maintenance Management Module (MMM), We are taken erp, risk, quality, effectiveness, efficiency, user satisfaction, best, worst is alternatives. We are taken corporate vision, technology and system architecture, product functionality, service and support are evaluation parameter. Alternative: ERP, Risk, Quality, Effectiveness, Efficiency, User satisfaction. Evaluation Preference: Corporate vision, Technology and system architecture, Product functionality, Service and support. In this from analysis VIKOR method is the most ideal solution Short-distance and negative-best The solution with the longest distance from the solution Determines, but the comparison of these distances Does not consider importance. From the result it is seen that ERP is got the first rank where as is the Effectiveness is having the lowest rank.
Keywords: Enterprise Resource Planning, Risk, VIKOR method

1. Introduction

The VIKOR system is an important multidimensional criterion stands alone as a decision-making technique. "many criterion optimization and compromise solution " the Serbian word for. It is different for information sources with forms modified. Many of the complex systems the VIKOR system was developed for benchmark upgrading. This is the list of compromise rankings, initial and (given) weights determines the compromise solution obtained. This method focuses on the paradox choosing. An alternative in the presence of criteria ranking from the set and final options for alternative skills calculated using professional knowledge and a type of solution-to-solution proximity (ERP) refers to software. Risk Management, Accounting, Purchasing, Project Management, Compliance and Distribution Chain activities such as daily business activities used by companies to manage. Repeat needs every day of complementary or multiple systems time to execute reports instead of losing, your people and yours on your most important business needs let's focus more on time. Organizational resource planning or ERP software is the main business Processes, sales, Processes, sales, Resources, customer support, CRM and inventory and so on Is a set of applications. Designed for specific business processes unlike personal software it is an integrated the business activities of the organization an effective solution for organizing and planning.

2. ERP system selection

This study is comprehensive on selecting the appropriate ERP system provides the framework. the business environment complexity, within Limitations of available resources and the diversity of ERP alternatives Due, the ERP system was selected Hard and time consuming will take. Substantial funding, however investment and Potential risks and benefits appropriate ERP, taking into account the importance of system selection cannot be overstated. ERP to get an overview of systems and vendors to managers of their professional studies would be very helpful. MCDM-based method by following, the decision maker, the complex and as prerequisites for risky decisions continuing fairness, accountability and to strengthen the selection decision in terms of fairness can. For an MCDM system, the components of the end matrix are dimensionless normalization is necessary to make it comparable. With corresponding values of crisp scale weights default ambiguous criterion values weighted default obtained after multiplication the ambiguous result shows the team. Choose for these five by criteria, risk is the only useless attribute, on the other hand, quality, performance and efficiency and user satisfaction higher values are always desired excellent ERP system. This stands for sap r / 3. Will be implemented a major corporate change ERP seller / developer recently corporate

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view has created. Product function technology and computer architecture current and future transactions the technology is strong enough to handle. This ERP system is overall the requirements are met by ERP vendor.

3. VIKOR

Possible alternatives to this method in selecting and ranking the package focuses, and is final to the decision maker to help achieve action, contradictory for a problem with criteria The compromise solution determines. The best Noted in the vicinity of the solution compromise ranking list based on measurement it determines. the type and need of decision-making problem depending decision maker, VIKOR besides the method, Comprehensive VIKOR, ambiguous VIKOR, grief theory Based VIKOR, modified VIKOR and After different types like interval VIKOR methods Were created. VIKOR, Modified VIKOR and Various types such as interval VIKOR methods were later developed. In this paper, the original VIKOR ranking performance of the system and its five classifications analysis based on two demonstration examples are done. The break VIKOR method did not work satisfactorily that is, the information in the decision-making problem is accurate in the absence of, vague VIKOR mode is preferred to be provided. But, for any end problem, the original VIKOR is related mathematical calculations is the best method for solution without unnecessary complication. In response to this, the interval is 2-double panel with linguistic information for multiple criterion supplier selection this paper proposes the extended VIKOR method. This paper proposes the extended VIKOR method. This article proposes an extension of the VIKOR method. Three realistic supplier selection examples and by comparing it with existing approaches Has been proven. An ambiguous, uncertain and Problem with supplier selection in an incomplete information environment The ITL-VIKOR method proposed to deal with, it is very The results show that it is relevant and effective.

4. Analysis and Discussion

Table 1. Determination of best and worst value Alternative: ERP, Risk, Quality, Effectiveness, Efficiency, User satisfaction. Evaluation Preference: Corporate vision, Technology and system architecture, Product functionality, Service and support. Corporate vision it is seen that Risk is showing the highest value for Efficiency is showing the lowest value. Technology and system architecture it is seen that Efficiency is showing the highest value for ERP is showing the lowest value. Product functionality it is seen that Risk is showing the highest value for User satisfaction is showing the lowest value. Service and support it is seen that Effectiveness is showing the highest value for ERP is showing the lowest value.

TABLE 1. Determination of best and worst value

	Corporate vision	**Technology and system architecture**	**Product functionality**	**Service and support**
ERP	0.154	0.385	0.852	0.034
Risk	0.241	0.431	0.977	0.121
Quality	0.159	0.519	0.673	0.219
Effectiveness	0.235	0.674	0.671	0.314
Efficiency	0.094	0.926	0.786	0.126
User satisfaction	0.226	0.872	0.591	0.236
Best	0.094	0.926	0.977	0.034
Worst	0.241	0.385	0.591	0.314

Table 1. Show the highest value of effectiveness of corporate vision and lowest value of best. efficiency highest value in Technology and system architecture and ERP lowest value. Best highest value in Product functionality and User satisfaction. Effectiveness of highest value in Service and support and best is lowest value.

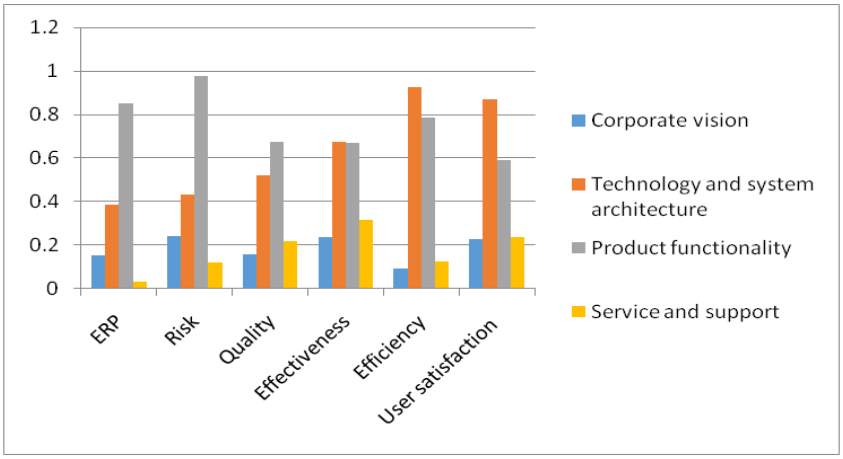

FIGURE 1. determination of best and worst value in VIKOR

Figure 1. shows the graphical view of the highest value of effectiveness of corporate vision and lowest value of best. efficiency highest value in Technology and system architecture and ERP lowest value. Best highest value in Product functionality and User satisfaction. Effectiveness of highest value in Service and support and best is lowest value.
Product functionality in the highest value of efficiency and ERP the lowest value.

TABLE 2. Product functionality in VIKOR

	Corporate vision	**Technology and system architecture**	**Product functionality**	**Service and support**
ERP	0.102041	0.25	0.080959	0
Risk	0.25	0.228743	0	0.077679
Quality	0.110544	0.188078	0.196891	0.165179
Effectiveness	0.239796	0.116451	0.198187	0.25
Efficiency	0	0	0.123705	0.082143
User satisfaction	0.22449	0.024954	0.25	0.180357

Table 2. show the highest value of quality and efficiency is the lowest value.

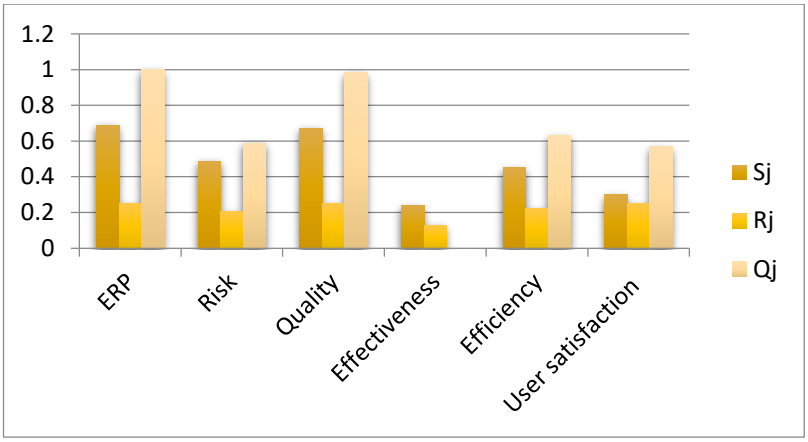

FIGURE 2. Calculation the SJ value and RJ value and QJ value.

Figure 2. Shows the Calculation the SJ value and RJ value and QJ value.

TABLE 3. SJ and RJ and QJ value.

	Sj	**Rj**	**Qj**
ERP	0.689394	0.25	1
Risk	0.487471	0.204545	0.589218
Quality	0.672203	0.25	0.980956
Effectiveness	0.238054	0.128521	0
Efficiency	0.452506	0.223485	0.628439
User satisfaction	0.299242	0.25	0.567785
Best	0.238054	0.128521	
worst	0.689394	0.25	

Table 3 ERP the high value in Sj value and low value the effectiveness. Effectiveness the highest value in Rj and user satisfaction the lowest value.

TABLE 4. Rank value for ERP system selection

	Rank
ERP	1
Risk	4
Quality	2
Effectiveness	6
Efficiency	3
User satisfaction	5

Table 4. Rank final result of this paper the ERP is in 1st rank, the Quality is in 2nd rank, the Efficiency is in 3rd rank. the Risk is in 4th rank the User satisfaction is in 5th rank, and the Effectiveness is in 6th rank The final result is done by using the WSM method.

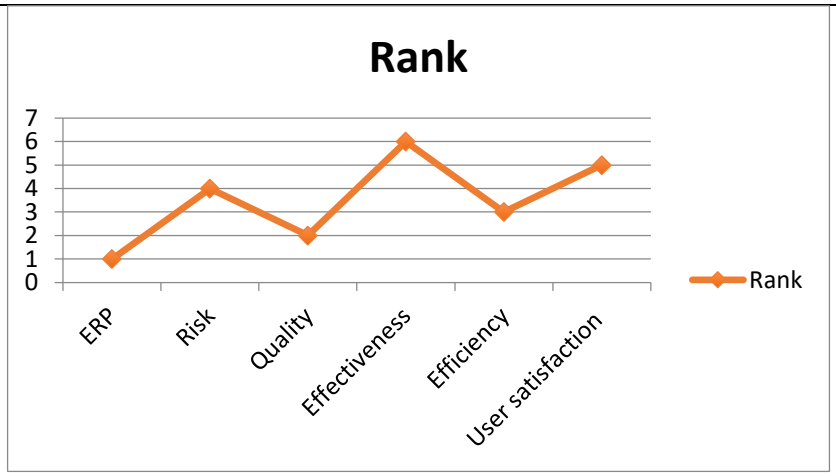

FIGURE 3. Rank value for ERP system selection

Figure 3 shows the graphical view of the final result of this paper the ERP is in 1st rank, the Quality is in 2nd rank, the Efficiency is in 3rd rank. the Risk is in 4th rank the User satisfaction is in 5th rank, and the Effectiveness is in 6th rank The final result is done by using the WSM method.

Conclusion

This method sets out a set of possible alternatives focuses on selective ranking, also the final step for the decision maker to help achieve, one with conflicting criteria determines a compromise solution to the problem. For the best solution based on the specific measure of intimacy it determines the compromise ranking list. Appropriate ERP system to select, review this provides a comprehensive framework. the business environment complexity, within available resources due to the limitations and ERP system selection diversity of ERP alternatives, Hard and time consuming. Substantial financial investment, however and risks and benefits considering, the appropriate ERP the importance of system selection Cannot be exaggerated. ERP systems and to get an overview of vendors, to managers of their professional studies would be very helpful. Also, decision makers do this extract important attributes from statements can. They cover a variety of fields includes complex business operations, highly updated information required, upstream and downstream to name a few more important connections with partners. Enterprise resource planning systems many businesses proven solution to information needs, but for many it is a costly mistake. Proven solution to information needs, ERP first quality and last ranking of performance. From the result it is seen that ERP is got the first rank whereas is the Effectiveness is having the lowest rank.

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