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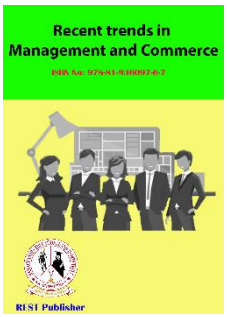

Evaluating Enterprise Resource Planning Adoption Using the EDAS Method: A Strategic Approach

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Abstract: *Adoption of enterprise resource planning (ERP) systems is the process of putting ERP systems into use inside an organisation. It entails the fusion of diverse corporate operations into a centralised software platform, including finance, human resources, and supply chain management. By enabling real-time utilisation of integrated data and automated processes, ERP adoption attempts to improve decision-making, increase efficiency, and streamline operations. To achieve successful installation and user acceptance, rigorous planning, arrangement, and instruction are needed. For businesses looking to streamline operations and obtain a competitive edge in today's digital environment, ERP adoption is essential. The implementation of enterprise resource planning (ERP) is significant for research since it can help to better understand and manage organisational operations. Scientists can learn more about the elements that contribute to successful implementation, pinpoint best practises, and address issues that organisations have throughout the adoption process by researching ERP adoption. By optimising resource allocation, increasing operational efficiency, and implementing ERP, this research will assist organisations in making knowledgeable judgements. Additionally, research on ERP adoption aids in the creation of frameworks and theories in the discipline of information technology and offers advice to practitioners and decision-makers working on ERP projects. A technique for making decisions that takes into account an alternative's distance from the mean answer is called evaluation based on distance from the average solution (EDAS). It gauges the performance of the alternatives using the distance between them and the typical solution. When evaluating options, EDAS takes both positive and negative distances into account. To rank and choose the best alternative in multi-criteria decision-making issues, this method is frequently utilised. Decision-makers can use EDAS to make well-informed decisions by taking into account how far away various options are from the typical solution. The Shipping took the first place while Tracking took the Last place in the Enterprise resource planning adoption. In this paper Enterprise resource planning adoption, The Shipping took the first place while Tracking took the Last place*

1. INTRODUCTION

Implementing and integrating sophisticated software tools to manage and streamline an organization's essential business activities is referred to as enterprise resource planning (ERP) adoption. ERP systems offer a centralised platform that unites diverse organisational divisions and functions, facilitating information exchange, teamwork, and effective resource management. ERP systems are adopted by businesses for a variety of reasons. By automating repetitive processes, lowering manual errors, and offering real-time insights for wise decision-making, ERP, in the first place, increases operational efficiency. It enhances departmental cooperation and communication, resulting in greater production and less effort duplication. Additionally, implementing ERP enables businesses to improve customer relationship management, supply chain efficiency, and inventory management. Organisations are able to provide timely and precise information for compliance with regulations and strategic planning because to its facilitation of data integration and standardisation. Planning, customisation, and employee training are necessary for a successful ERP installation. During the migration process, organisations must maintain data integrity and align their business operations with the ERP system. The ERP system must also receive continual support and maintenance to be effective and meet changing corporate needs. Adopting an ERP is, in general, a strategic step made to equip organisations with a cohesive, scalable, and effective system. The process of putting an ERP system into place can be difficult and complex. Employee aversion to change, substantial data transfer and

integration, customisation to fit unique business demands, and guaranteeing interoperability with current IT infrastructure are a few prevalent hurdles. For effective ERP adoption, organisations have to carefully tackle these issues.Many businesses are choosing cloud-based ERP systems as cloud technology develops. Scalability, cost effectiveness, and availability from any place with a web connection are all benefits of cloud ERP. This eliminates the requirement for premises infrastructure and makes maintenance and upgrade simple.

2. ENTERPRISE RESOURCE PLANNING ADOPTION

The Technology Acceptance Model (TAM) is one of the frameworks that is most frequently used to study ERP adoption. The Theory of Reasoned Action (TRA), from which TAM is derived, is concerned with explaining and foreseeing how members of an organisation would act in a certain circumstance. "Attitudes" & "subjective standards" are two important variables determining behavioural intentions, according to TRA. While subjective standards are influenced by normative views and the desire to fit in, attitude are impacted by a person's beliefs and assessment of the consequences they perceive. After been created in the area of psychology, Davis later applied the TAM model to information systems (IS). Perceived utility (PU) and perceived ease of use (PEOU) are the two key constructs that Davis claims can be used to explain IT adoption. These factors have a big impact on how people feel about using computers. Through their direct impact on PU and PEOU, system design elements for IS have an indirect impact on perceptions of system use [1]. Understanding the justifications organisations make for implementing ERP systems can be quite insightful into the fundamental principles that underpin this choice. As the organisation gains a deeper understanding of the situation by reviewing team reports and potential outcomes regarding IS/IT issues, certain justifications are purposefully intended to persuade the sceptics. Since it serves as the starting point for the implementation process, expressing the choice of implementing an ERP system is crucial. The implementation of ERP systems in an organisational setting is made clear to organisational members through communication [2]. Local and international ERP providers might provide comparable modules, but because of the vast experience that foreign suppliers have with ERP integration, their worldwide integration abilities may vary. When adopting ERP, some businesses experience structural changes, and the features and modules provided by various ERP vendors may differ. It ought to be emphasised that due to intrinsic performance disparities, it might not be suitable to compare various organisations together, hence the measuring was not employed to evaluate the results. It is also important to note that Hendrix et al. (2007) failed to contrast the effectiveness of various ERP systems, focusing instead solely on the efficiency of utilising SAP ERP. This study explicitly compares how well local and multinational ERP suppliers perform in terms of processes. Additionally, the size of the business could have an impact on how well ERP adoption processes function [3]. As mentioned by Cattedu and Hogben (2009), organisations can do away with capital expenses for hardware, software, and IT support by employing cloud-based solutions. According to our research, cloud ERP offers cheaper startup expenses because consumers don't have to invest in infrastructure, software, or technical know-how. Due of this, adoption of cloud ERP is especially appealing among small and medium-sized businesses (SMEs). In comparison with conventional ERP adoption, that strives to increase organisational capacities via automation, cloud ERP vendors provide automated upgrades, taking automation to a new level (Oliver et al., 2005). Cloud ERP solutions utilise single-source codes, which allows for inexpensive updates via the Internet. Vendors of ERP software may gain from switching to cloud computing from conventional systems. This action will aid in removing the main obstacle to the adoption of cloud ERP: worries about security and privacy issues. Additionally, it is essential to build government legislation that address secure data storage as well as international standards for defining cloud ERP systems. The use of cloud ERP will increase with swift action in these areas [4]. Numerous adoption-related topics are covered in the comprehensive books on ERP in the United States. Particularly, the research of Willis and Willis-Brown (2002) stood out because it distinguished between the execution and integrating stages of ERP adoption. Recent US research, however, frequently looks at ERP integration or deployment individually rather than combining the two topics. The current study utilises the Willis and Willis-Brown ERP adoption paradigm, taking into account both implementation and integration, to close this knowledge gap. Gulledge et al. (2004) researched SAP installation inside the US Navy and gave an analytical approach to analyse integration potential for discrete SAP systems, while Gulledge and Simon (2005) offered insight into the SAP deployment process. It must be understood that various business settings and organisation sizes necessitate different kinds of ERP systems. According to Mabert et al. (2003), organisations of various sizes approach ERP deployment in a variety of ways, with smaller companies performing better in logistics and manufacturing and larger companies seeing benefits in finance operations [5]. The primary goal of this study is to pinpoint the crucial elements that go into the effective adoption of enterprise resource planning (ERP) solutions. Five potential antecedent elements were drawn from the body of literature already in existence, including innovation theories. Information was gathered from 217 Australian businesses. The intricate interactions among these variables and the choice to implement ERP were examined using structural equation modelling (SEM). Three beneficial factors for a good ERP adoption outcome were identified by the research. This study demonstrated that the system's quality has a substantial impact on the adoption of

organisational ERP. Prior research has shown that system quality is crucial in the adoption of specific innovations. Additionally, studies show that businesses are more inclined to use ERP in stable market and customer behaviour situations than in unstable ones. Due to its innate complexity, integrated nature, sizeable capital investment, high risk profile, absence of customisation, and requirement for specialised organisational skills to manage and maintain the system, ERP adoption varies from the adoption of typical IT systems [6]. Attitudes towards the usage, ownership, and exchange of knowledge can be influenced by cultural factors. Executives and managers frequently see information acquired via business transactions as an individual possession instead of a corporate one in Chinese business culture. For personal gain, this data is disseminated within a small group of people, making information ownership and control a source of authority. Chinese managers are far less inclined to support information system adaption and process change than their Western counterparts, who employ systems of information for sharing data and process improvement. Instead, they control the organisation through the use of information systems. Similar tendencies and attitudes have been identified as obstacles to ERP deployment in recent Chinese ERP research. Executives in China show a predilection for the status quo, both past and present, a receptive attitude towards shift, and an elevated tolerance for unclear information. Their cautious approach to information sharing is problematic, and their weak backing of information systems as well as modifications to business processes could impede the implementation of ERP [7]. Making the appropriate strategic decisions throughout the adoption phase is essential to preventing issues from developing in ERP projects, which is why researching ERP adoption is vital. Organisations must make sure the ERP system they choose is compatible with their business and information demands during the deployment phase. An ERP is far more than simply another IT tool, according to a respondent in the present study who was in charge of implementing it in their organisation. Having an ERP is a choice that affects the way the firm does business. The instance of FoxMeyer Pharmaceuticals is a noteworthy one that illustrates the effects of poor strategic decisions on the implementation of ERP. In one extreme instance, bankruptcy trustees sued the ERP system's seller and consultancy company, blaming them for the company's downfall [8]. The mid-market is gradually catching up to major enterprises in terms of ERP usage, which is prevalent. With a considerable number of medium-sized businesses, this spike in adoption has resulted in a sizable number of recently finished, ongoing, or impending ERP implementation projects. As a result, it is anticipated that this year's forecasted mid-market ERP adoption would increase from the 27% recorded in 1998 to 56%. Industries and nations that had inadequate ERP adoption rates in 1998 anticipate considerable reductions in the gap. For ERP suppliers, this creates an exciting market to pursue. Our study emphasises a number of critical elements for the development of this sector. The most crucial factor to consider when choosing a new system is compatibility with existing business processes, according to the customer. However, mid-market businesses place a higher importance on cheaper costs and quicker turnaround times. Some ERP companies provide "accelerated" implementation techniques to meet these objectives [9]. When studying organisational behaviour, the literature often takes one of two main methods. Variation theory is one strategy that seeks to pinpoint organisational traits, environmental elements, or other elements that influence the adoption for innovation inside the organisation. Yet, variance theory frequently fails to predict unpredictable events, such as the adoption of ERP. On the contrary , the process theory offers solid justifications whenever a combination of causative elements is insufficient to bring about the intended results. The creation of stage models, that specify a predetermined number and order of stages that help organisations advance as they accept innovations, is a common step in the process theory process. Within a framework of process theory, several academics have put forth theoretical models that outline the various stages of adoption. Adoption has been referred to as a stage in ERP implementation projects in past research, often coming after commencement and before adaptation, acceptance, implementation, and infusion. Adoption, implementation, and post-implementation are all seen as separate stages of the innovation process in other studies [10]. Information and communication technology (ICT) utilisation boosts company competitiveness and helps organisations of all sizes significantly. ICT innovation and ERP implementation have, however, received little research attention in Jordanian businesses. By evaluating ERP implementation in Jordanian organisations in the three key settings of the TOE (Technical, Organisational, and Environmental) paradigm, this study tries to advance previous efforts. The study identifies a number of critical variables that are crucial in helping Jordanian businesses decide whether to use ERP. Given that the present research is the first to look at ERP adoption in the context of Jordanian organisations, the findings have significant implications regarding providers, managers, and social researchers. Notably, service providers play a significant role in the adoption decision-making process by providing crucial information about ERP systems, emphasising the advantages of increased competitiveness as well as streamlined work processes that boost customer satisfaction, as well as giving company employees the necessary training. Tribility turns out to be a very important factor. Future studies will broaden the study by including more companies from more industries and look at more variables that could affect adoption choices [11]. We evaluated the accomplishment of ERP projects using five arbitrary measuring criteria in order to acquire a thorough insight of ERP adoption practises in Bahrain. Analysis of the data in Table V demonstrates that all project success metrics have mean values above 3 and that there are statistically significant differences between them. The firms in this sample reported a modest level of fulfilment, with an overall success average of 3.74. This discovery calls into

question the perception that ERP system rollouts frequently end in failure. Seeing contrary proof in a less advanced country like Bahrain is especially heartening. It's crucial to carefully assess this accomplishment, though, as it can be the result of ERP implementation projects adopting more conservative and constrained aims. However, it's critical to reevaluate our assumptions regarding these systems' chances of success. Unlike in the 1990s, the IT industry as a whole, vendors, and IT professionals have learned a lot from failed ERP projects. Better outcomes are hence frequently anticipated today [12]. Cost, security, and privacy considerations have a big impact on whether cloud ERP is used. Therefore, it is crucial to integrate the three components of security of data, cost, and privacy in the TAM-DTM framework when analysing the adoption of cloud-based ERP. In earlier research on the adoption of new technologies, the TAM-DTM model, an altered form of TAM, has been extensively employed. Based on the prior discussions, this research suggests integrating the TAM model with pertinent theories that include crucial concepts like security, privacy, and cost. By taking into account these elements in addition to other significant variables frequently examined in adoption studies, this approach seeks to offer deeper insights into the adoption of cloud ERP [13]. The majority of the business articles on ERP implementation in India can be found in trade journals and other professional media. These articles often describe the situation of the ERP market today or go over the tactics used by certain businesses. On the basis of empirical investigations, there isn't enough research to comprehensively analyse and generalise the traits and difficulties of ERP adoption. Additionally, the majority of the currently available research on the adoption of ERP comes from studies carried out in industrialised nations and may be divided into three primary tracks. Outlining the many steps involved in the adoption, installation, and integration of ERP software is the primary goal of the first track. The second track looks at the factors that affect the adoption of ERP, which are typically connected to three key facets. Thirdly, studies that examine the ERP installation process through the perspective of organisational changes that occur during the process are available [14]. Scholars and specialists in the fields of leadership science and engineering have paid close attention to the quick development of new technologies. The adoption of novel technologies together with the use of open innovation principles has been the subject of a growing corpus of research over the past two decades. The adoption and deployment of ERP (enterprise resource planning) systems, in particular, necessitates an understanding of how people interact with and make use of these novel technologies. The Theory of Planned Behaviour, Theories of Innovations Diffusion, the Model of Technology Acceptance, the Theory of Social cognition, and UTAUT are just a few of the ideas that have offered evidence and insights on the adoption and use of technology. Gaining a thorough knowledge of the dynamics underlying ERP adoption and its practical use is a goal shared by policy makers, governmental organisations, academics, and industry experts [15].

3. EDAS METHOD

The EDAS approach, created by Keshavarz Ghorabaee et al., evaluates various possibilities using an average solution. PDA (Positive Distance from Mean) and NDA (Negative Distance from Mean) are two measurements used in this method for estimate. This is especially helpful when there are competing criteria involved. The EDAS technique chooses the best alternative based on how far it is from the average answer, compared with conventional MCDM (Multiple Criteria Decision Making) systems like VIKOR and TOPSIS, which choose the greatest alternate based on the distance between the best positive and negative solutions. With this method, the best option is chosen based on how closely it resembles the typical solution [16]. The performance ratings given to different options in multi-criteria decision-making (MCDM) problems may be expressed as random variables adhering to a specific distribution. MCTM problems have significance in many scientific, technical, and managerial domains. In order to solve problems of this nature, stochastic MCDM techniques are quite beneficial. In this paper, we have presented a stochastic component-based modification of the EDAS method to effectively solve MCTM problems with normal-distributed data. In our suggested technique, we have added optimistic and pessimistic values for various parameters to account for the data uncertainty throughout the estimation process. The final evaluation of the options was calculated by combining the optimistic and pessimistic evaluation values, which produced an adjusted evaluation score. Our investigations show that the suggested stochastic EDAS technique works well, and regardless of the criteria weights are adjusted, the ranking results hold steady. In order to account for data skewness, future research efforts could expand the EDAS approach by including additional statistical distributions, like beta and PERT distributions [17].

The multi-criteria decision-making (MCDM) method is crucial for considering steam boiler choices in a textile company's dyehouse because it incorporates numerous criteria and competing elements. The cost of operating the business is directly impacted by selecting the best steam boiler. In order to compare options and choose the best one, many MCDM methods were proposed in the literature. In this study, we employ an integrated MCDM strategy that incorporates the methodologies of EDAS (estimation based on distance from the mean solution) and MACBETH (Measuring attractiveness using a category-based evaluation technique). The weights are established using the MACBETH scale, and the alternatives are ranked using the EDAS method. This approach ultimately

determines the best steam boiler option for a textile business's dyehouse [18]. The distance of alternatives from the mean solution-based approach known as EDAS is comparable to other distance-based multi-attribute decision-making approaches like TOPSIS and VIKOR. Unwilling fuzzy sets a fuzzy set extension causing it difficult to determine the degrees of membership for elements. To record decision makers' hesitations, this work expands the traditional EDAS technique to include hesitation-free fuzzy sets. The distance-from-average solution (HF-EDAS)-based reluctant fuzzy estimating method that is being suggested makes use of several integrating operators with and without defuzzification to produce four alternative HF-EDAS variants. A comparison of the approach and the Hesitant Fuzzy TOPSIS (HF-TOPSIS) is offered for the multi-criteria and multi-specialty hospital selection problem for organ transplantation. The results show that HF-EDAS and HF-TOPSIS choose the same best option, however the versions of HF-EDAS somewhat modify the order in which alternatives are ranked [19]. In order to solve decision-making difficulties, the previously mentioned technique is expanded to include intuition and type-2 fuzzy sets. However, the level of expert uncertainty is not taken into account by these additions. This paper suggests an IVN EDAS approach and employs it to rank the United Nations National Sustainable Development Goals in order to alleviate this issue. This approach rates options based on the opinions of experts and combines the significance of parameters utilising an aggregation operation and IVN EDAS. To show how well the suggested strategy stands up to modifications to criterion weights, sensitivity analysis is done. Future studies may take into account the improved neutrosophic EDAS approach with various types of neutrosophic sets, including simplified neutrosophic sets, triangular neutrosophic sets, or trapezoidal neutrosophic sets [20]. The choice of subcontractors is crucial to the achievement of construction projects since it has a direct impact on both the project's quality and the standing of the primary contractors. Experts' opinions or those of decision makers are considered while evaluating subcontractors using particular criteria. This evaluation procedure become a dynamic multi-criteria group decision-making (MCGDM) problem when it takes place at various times. In order to evaluate subcontractors, this paper introduces a novel way employing the EDAS method. The suggested method takes into account how decision-makers, criteria, and alternatives change over time. When combining the overall efficacy of alternatives, it gives recent decision information more weight [21]. The following justification for the suggested method can be given: Using the benefits of RST (Rough Set Theory), we present a new decision-making strategy to tackle uncertain and fuzzy issues by merging the ideas of the PROMETHEE method and EDAS method. Fuzzy beta cut approximations space (FCAS) decision issues can be solved using this combination approach. The procedure starts by applying a normalisation technique to transform the MADM (Multiple Attribute Decision Making) matrix into a normalised decision matrix. The way out flow and entrance flow for each possibility are then determined using the PROMETHEE approach. We derive the mean departure stream and mean entrance stream using the EDAS approach. After that, we determine the separations among every alternative's departure stream and the standard exit flow as well as its entry flow from the mean entrance flow. The CVPFRS (Crisp-Valued Pawlak Rough Set) method is used to generate a valuation fuzzy set and identify its top and bottom approximations. At last, we obtain a thorough ranking of all possibilities using an aggregate function [22]. This paper proposes a novel strategy for handling fuzzy multi-scale group decision-making issues in linguistic neutrosophic situations that blends power aggregation operators with the distance-based estimate from the average solution (EDAS) method. The analysis starts by looking at current functional laws and linguistic neutral numbers' (LNNs) comparison techniques. The difference between two LNNs is then measured using a distance metric that is established. Energy-weighted averaging & power-weighted geometric operators have been developed, especially for LNNs, to help decision makers' evaluation data. The suggested distance metrics are used in models to establish criteria weights.

The EDAS approach has also been expanded to address group decision-making issues within the linguistic neurosophic setting. Linguistic Neutrosopic Numbers (LNNs) are used to convey evaluation information, and predicted functions are taken into account [24]. For evaluating hesitant qualitative data in contexts of multi-criteria group decision-making, the Extended Hesitancy Fuzzy Linguistic Terminology (EHFLTS) serves as a useful method. In this investigation, we expand the distance-based estimate from the average solution (EDAS) method to include an extended hesitant fuzzy linguistic context which employs the average solution to assess alternatives. The extended hesitant fuzzy linguistic central OWA manager, which mixes two EHFLTS with the main OWA operator via convergent combinations, is used to determine the average answers across all criteria. We suggest a probability degree formula for calculating the positive and negative distances from the mean when comparing EHFLTSs. The order of choice or best option is determined by taking the evaluation scores into account [25].

4. ANALYSIS AND DISCUSSION

TABLE 1. Enterprise resource planning adoption

Enterprise resource planning adoption								
process	**Effectiveness**	**efficiency**	**satisfaction**	**unit testing**	**volume**	**complexity**	**duplication**	**unit size**
Placement	0.68	0.55	6.2	0.7	151887	13138	0.1	70
Scheduling	0.76	0.69	7.3	0.8	134667	10003	0.09	80
Shipping	0.83	0.78	7.7	0.6	99864	9798	0.08	60
Tracking	0.42	0.34	3.3	0.3	23557	16789	0.12	70
Invoicing	0.48	0.43	5.5	0.65	173671	14034	0.11	65
AVJ.	0.634	0.558	6	0.61	116729	12752.4	0.1	69

Table 1 shows the Enterprise resource planning adoption by using EDAS method which incorporates the Alternative Parameter: Placement, Scheduling, Shipping, Tracking, Invoicing. And the Evaluation parameter include benefit criteria of Effectiveness, efficiency, satisfaction, unit testing and Non benefit criteria is volume, complexity, duplication, unit size.

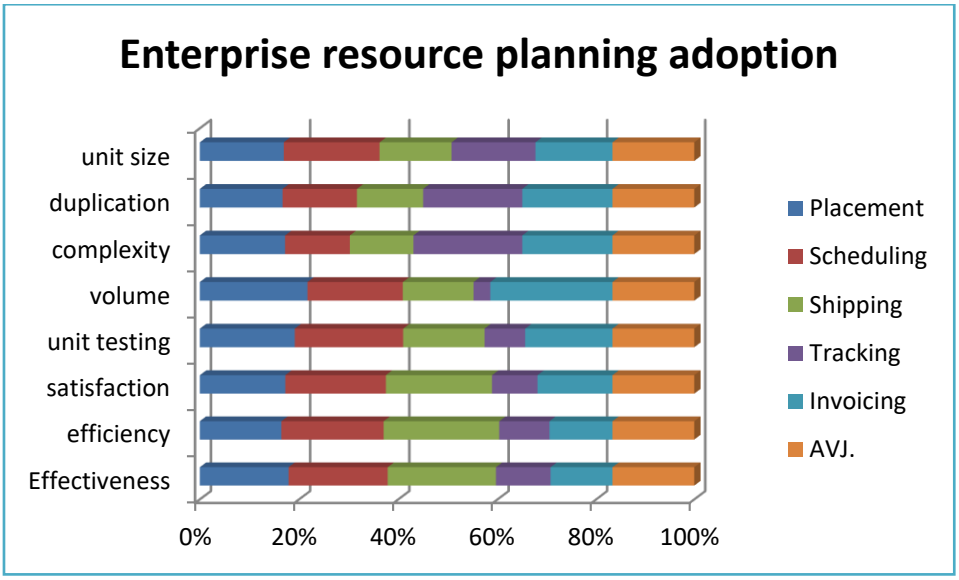

FIGURE 1. Enterprise resource planning adoption

Figure 1 Shows the graph of Enterprise resource planning adoption by using EDAS method which incorporates the Alternative Parameter: Placement, Scheduling, Shipping, Tracking, Invoicing. And the Evaluation parameter include benefit criteria of Effectiveness, efficiency, satisfaction, unit testing and Non benefit criteria is volume, complexity, duplication, unit size.

TABLE 2. Positive Distance from Average

process	Positive Distance from Average (PDA)							
Placement	0.0726	0	0.0333	0.1475	0	0	0	0
Scheduling	0.1987	0.2366	0.2167	0.3115	0	0.2156	0.1000	0
Shipping	0.3091	0.3978	0.2833	0	0.1445	0.2317	0.2000	0.1304
Tracking	0	0	0	0	0.7982	0	0	0
Invoicing	0	0	0	0.0656	0	0	0	0.0580

Table 2 shows the Positive Distance from Average for all the alternate parameter with the evaluation parameter with considering both benefit and non benefit criteria.

TABLE 3. Negative Distance from Average

process	Negative Distance from Average (NDA)							
Placement	0	0.0143	0	0	0.3012	0.0302	0	0.0145
Scheduling	0	0	0	0	0.1537	0	0	0.1594
Shipping	0	0	0	0.0164	0	0	0	0
Tracking	0.3375	0.3907	0.4500	0.5082	0	0.3165	0.2000	0.0145
Invoicing	0.2429	0.2294	0.0833	0	0.4878	0.1005	0.1000	0

Table 3 shows the Negative Distance from Average for all the alternate parameter with the evaluation parameter with considering both benefit and non benefit criteria.

TABLE 4. Weighted matrix

Weight							
0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125

Table 4 shows the Weight matrix for Enterprise resource planning adoption by using EDAS method which have the same value as 0.125.

TABLE 5. Weighted PDA and SPi

process	Weighted PDA								SPi
Placement	0.0091	0.0000	0.0042	0.0184	0.0000	0.0000	0.0000	0.0000	0.0317
Scheduling	0.0248	0.0296	0.0271	0.0389	0.0000	0.0269	0.0125	0.0000	0.1599
Shipping	0.0386	0.0497	0.0354	0.0000	0.0181	0.0290	0.0250	0.0163	0.2121
Tracking	0.0000	0.0000	0.0000	0.0000	0.0998	0.0000	0.0000	0.0000	0.0998
Invoicing	0.0000	0.0000	0.0000	0.0082	0.0000	0.0000	0.0000	0.0072	0.0154

Table 5 shows the Weighted PDA and SPi for Enterprise resource planning adoption by using EDAS method resulted by multiplying Weight matrix with PDA. And SPi is obtained by Adding all the values in column.

TABLE 6. Weighted NDA and SNi

process	Weighted NDA								SNi
Placement	0.0000	0.0018	0.0000	0.0000	0.0376	0.0038	0.0000	0.0018	0.0450
Scheduling	0.0000	0.0000	0.0000	0.0000	0.0192	0.0000	0.0000	0.0199	0.0391
Shipping	0.0000	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000	0.0000	0.0020
Tracking	0.0422	0.0488	0.0563	0.0635	0.0000	0.0396	0.0250	0.0018	0.2772
Invoicing	0.0304	0.0287	0.0104	0.0000	0.0610	0.0126	0.0125	0.0000	0.1555

Table 6 shows the Weighted NDA and SNi for Enterprise resource planning adoption by using EDAS method resulted by multiplying Weight matrix with NDA. And SNi is obtained by Adding all the values in column.

TABLE 7. NSPi and NSNi

Process	NSPi	NSNi
Placement	0.149347	0.837535
Scheduling	0.75374	0.858806
Shipping	1	0.992607
Tracking	0.470376	0
Invoicing	0.072805	0.439023

Table 7 shows the Value of NSPi and NSNi for Enterprise resource planning adoption by using EDAS method for the Alternate parameter

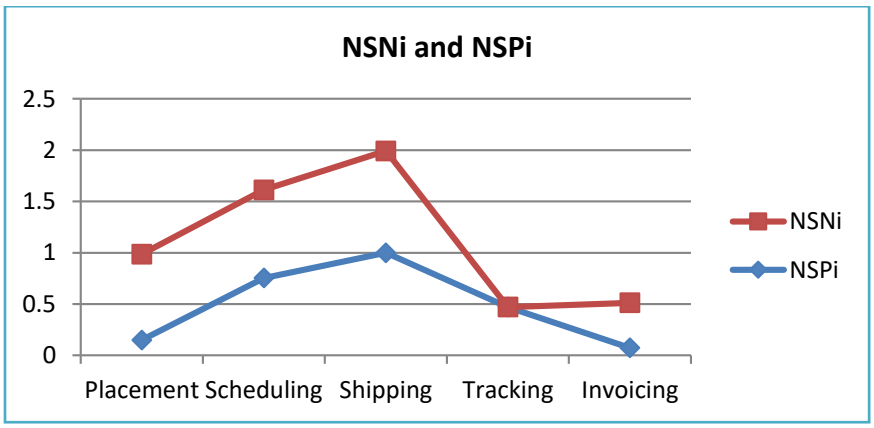

FIGURE 2. NSNi and NSPi

Figure 7 shows the graphical representation of Value of NSPi and NSNi for Enterprise resource planning adoption by using EDAS method for the Alternate parameter

TABLE 8. ASi and Rank

Process	ASi	Rank
Placement	0.493441	3
Scheduling	0.806273	2
Shipping	0.996304	1
Tracking	0.235188	5
Invoicing	0.255914	4

Table 8 shows the value of ASi and Rank for Enterprise resource planning adoption by using EDAS method for the Alternate parameter. The Shipping took the first place while Tracking took the Last place.

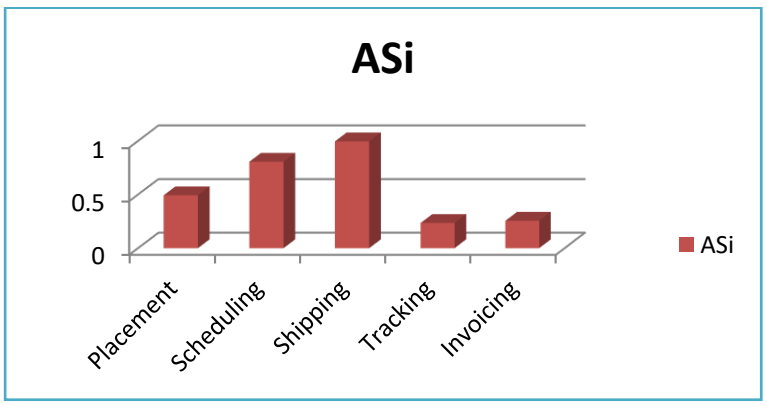

FIGURE 3. ASi

Figure 3 shows the graphical representation of ASi for Enterprise resource planning adoption by using EDAS method for the Alternate parameter.

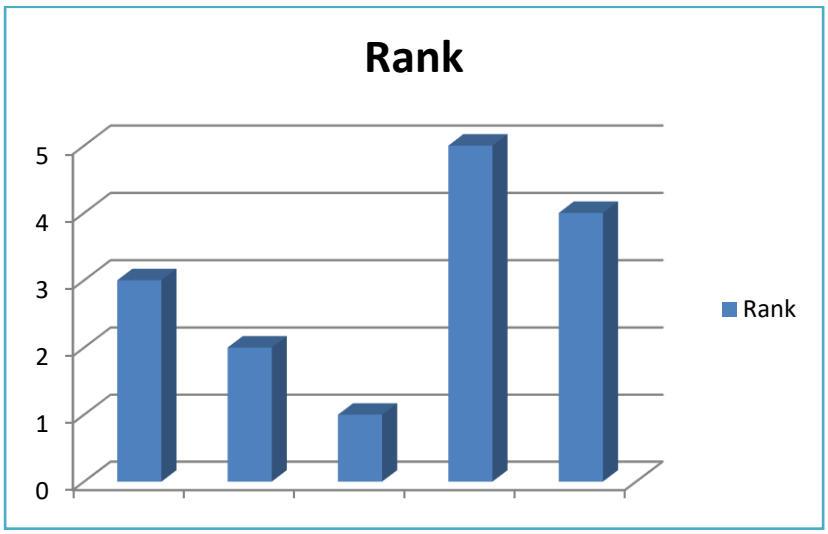

FIGURE 4. Rank

Figure 4 shows the graphical representation of Rank for Enterprise resource planning adoption by using EDAS method for the Alternate parameter. The Shipping took the first place while Tracking took the Last place

5. CONCLUSION

Local and international ERP providers might provide comparable modules, but because of the vast experience that foreign suppliers have with ERP integration, their worldwide integration abilities may vary. When adopting ERP, some businesses experience structural changes, and the features and modules provided by various ERP vendors may differ. It ought to be emphasised that due to intrinsic performance disparities, it might not be suitable to compare various organisations together, hence the measuring was not employed to evaluate the results. It is also important to note that Hendrix et al. (2007) failed to contrast the effectiveness of various ERP systems, focusing instead solely on the efficiency of utilising SAP ERP. This study explicitly compares how well local and multinational ERP suppliers perform in terms of processes. Additionally, the size of the business could have an impact on how well ERP adoption processes function. Making the appropriate strategic decisions throughout the adoption phase is essential to preventing issues from developing in ERP projects, which is why researching ERP adoption is vital. Organisations must make sure the ERP system they choose is compatible with their business and information demands during the deployment phase. An ERP is far more than simply another IT tool, according to a respondent in the present study who was in charge of implementing it in their organisation. Our suggested technique, we have added optimistic and pessimistic values for various parameters to account for the data uncertainty throughout the estimation process. The final evaluation of the options was calculated by combining the optimistic and pessimistic evaluation values, which produced an adjusted evaluation score. Our investigations show that the suggested stochastic EDAS technique works well, and regardless of the criteria weights are adjusted, the ranking results hold steady. In order to account for data skewness, future research efforts could expand the EDAS approach by including additional statistical distributions, like beta and PERT distributions. In order to evaluate subcontractors, this paper introduces a novel way employing the EDAS method. The suggested method takes into account how decision-makers, criteria, and alternatives change over time. When combining the overall efficacy of alternatives, it gives recent decision information more weight. The following justification for the suggested method can be given: Using the benefits of RST (Rough Set Theory), we present a new decision-making strategy to tackle uncertain and fuzzy issues by merging the ideas of the PROMETHEE method and EDAS method. Fuzzy beta cut approximations space (FCAS) decision issues can be solved using this combination approach.

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