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An Intelligent Decision-Making Model to Analysis and Assess the Strategies of International Business Administrations Under Neutrosophic Environment

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Abstract: Global company management relies heavily on the techniques developed in the field of International Business Administration. This paper summarizes the most important strategies used by companies to deal with the challenges of doing business on a global scale. It stresses the necessity for localization and adaptation to accommodate varied market preferences and underscores the relevance of market entrance techniques including exporting, licensing, and foreign direct investment. Strategies for obtaining economies of scale and uniformity across markets are examined, along with the role of standardization and global integration in doing so. The need to develop one's cross-cultural competency as a means of appreciating and valuing one another's cultural backgrounds is emphasized. Approaches to logistics, procurement, and distribution management at the global level are explored. The authors argue that strategic partnerships and joint ventures might be used to tap into local expertise and infrastructure. This paper used the neutrosophic set integrated with the multi-criteria decision-making (MCDM) tools to analyze and evaluate the various strategists. The TOPSIS and VIKOR methods are used to rank the alternatives and obtain the most suitable strategy. This paper used ten factors and seven strategies to be evaluated and analyzed. These elements are applied in experiments to use the best strategy in the organization.

Keywords: Neutrosophic Set, TOPSIS, VIKOR, MCDM, International Business Administration.

1. Introduction

International company administrations in today's linked global economy confront difficult problems and possibilities as they negotiate the varied business environments of various nations and regions. To survive and prosper in today's fast-paced world, businesses need to create and execute strategies that give them a leg up in the global marketplace. Assessing the efficacy of these approaches, pinpointing improvement opportunities, and propelling organizational success are all dependent on careful analysis and assessment. The purpose of this study is to investigate and assess the approaches used by multinational company administrations, illuminating their viability, difficulties, and possibilities for gaining a lasting edge in the marketplace[1], [2].

Global business administrations compete in a dynamic and ever-evolving environment. Their chances of survival and growth are profoundly affected by the methods they use to expand into new markets, handle cross-border activities, accommodate cultural differences, and take advantage of international possibilities. Organizations may learn a lot about their strengths, shortcomings,

and competitive standing by analyzing and assessing these tactics. Strategic decisions may then be made using the knowledge gained from this kind of analysis, which also aids in capitalizing on possibilities and reducing the risks involved with doing business in a globalized world[3], [4].

The fundamental purpose of this study is to assess and compare the approaches used by multinational business administrators in different sectors. The study's overarching goal is to learn about various approaches and their components, drivers, and consequences. The study also aims to evaluate how well these tactics help businesses accomplish their stated goals of increasing their reach in the market, their bottom line, the visibility of their brand, and the efficacy of their operations. This study's overarching goal is to help businesses improve their international strategy by analyzing current practices and offering suggestions for how they might do better in the future[5], [6].

Both qualitative and quantitative approaches will be used to complete the study. The basis of understanding will be established by conducting a comprehensive literature study of relevant academic research, case studies, and industry reports. Further, qualitative interviews and questionnaires will be administered to professionals and executives in the worldwide business community to glean insights from the actual world. Research techniques such as these will shed light on the tactics used by multinational business administrations and allow for an assessment of how successful these approaches are[7], [8].

A proposition in Boolean logic is either true or false; in classical set theory, an item either belongs to a set or it does not; and in optimization, an approach is either viable or it is not. However, in practice, almost everything is a question of degree and cannot be precisely characterized by the usual reasoning[9], [10]. Zadeh developed the fuzzy sets theory to cope with this sort of ambiguity. Since its inception in 1965, various variations of fuzzy sets have been developed. Zadeh created the type-n fuzzy set to address the ambiguity of the membership function in fuzzy set theory. Atanassov introduced intuitionistic fuzzy sets (IFSs) to clarify how membership functions, their degrees of membership and non-membership, and the uncertainty of decision-makers are defined[11]. Torra first introduced hesitant fuzzy sets (HFSs), which are an extension of conventional fuzzy sets in which many values are allowed for the membership of one component. However, the opinions of decision-makers may not be well reflected in the enlarged description of membership duties. As a result, we still need to add some additional extensions[12], [13].

Smarandache extended intuitionistic fuzzy sets with neutrosophic logic and neutrosophic sets (NSs) to address this shortcoming[14]. The neutrosophic set is the set in which every conceivable thing in the cosmos has a truthiness, indeterminacy, or falsity between zero and one. While levels of belongingness non-belongingness and indeterminacy value were factored in as equivalence or absoluteness, in the neutrosophic sets, ambiguity is expressed as truth and falsity numbers. In addition to coping with systemic ambiguity, this designation for neutrosophic sets helps eliminate the paralysis caused by conflicting data[9], [15]. Thus, the truth number, the falsehood value, and the indeterminacy value may be thought of as the membership level, the non-membership level, and the hesitant degree, respectively[16]. This paper used the neutrosophic set with the multi-criteria decision-making (MCDM) methods like TOPSIS and VIKOR method to evaluate the strategies of international business administration[15], [17], [18].

In this study, we shall dissect and assess several approaches used by global company administrations. Market entry strategies, international supply chain management, cultural adaptation and localization, strategic alliances and partnerships, international marketing and branding, technological innovation and digital transformation, risk management, and compliance; are just some of the areas that fall under the remit of this study. Key elements, success indicators, difficulties, and best practices for each approach will be investigated, providing a formal framework for the study. Organizations will be able to obtain insights and make well-informed choices about their international commercial operations thanks to the paper's framework, which will allow for a full review of these tactics[19], [20].

Organizations that want to succeed in the global market must devote significant resources to the study and assessment of international business strategy. Organizations may improve their decision-making processes, increase their competitive edge, and achieve sustainable development if they have a thorough awareness of the pros and cons of various strategies. The purpose of this study is to add to the current body of literature by analyzing and evaluating in depth the tactics used by multinational company administrations. This study's results and suggestions will help businesses of all sizes create competitive advantages, adapt to new markets, and expand internationally.

The rest of this paper is organized as follows: Strategies of international business administration are presented in section 2. The materials and methods are presented in section 3. The application and experiment of methodologies are presented in section 4. The conclusions of this study are presented in section 5.

2. Strategies of International Business Administration

Examining the methods and strategies used by companies competing on a worldwide scale is an important part of any analysis and evaluation of international business administrations. We may learn about the efficacy, obstacles, and possibilities that multinational firms confront by analyzing these tactics. Here, we'll examine the effectiveness of some of the most often-used methods among multinational corporations' top management[21], [22].

Exporting, licensing, franchising, joint ventures, and foreign direct investment (FDI) are just a few examples of market entrance techniques used by international enterprises. Companies may enter new markets, get access to resources, and increase their consumer base with the help of these techniques. Market dynamics, legal frameworks, cultural variables, and competitive landscapes all have a role in determining the success of these approaches. Market entrance tactics may be judged on their ability to break into the market, win over customers, turn a profit, and fuel sustainable expansion[23], [24].

Management of the global supply chain is essential for international companies to guarantee successful product sourcing, manufacturing, and distribution. Supplier selection, logistical optimization, inventory management, and risk avoidance are all examples of supply chain management strategies. Cost-effectiveness, speed of response, dependability, sustainability, and resistance to interruptions are only a few of the criteria that must be considered when evaluating the efficacy of supply chain methods[25], [26].

Successful global companies know the value of adopting localized strategies that account for cultural differences. Customer acceptability and market penetration may be increased by tailoring goods, services, marketing messaging, and business practices to local tastes and cultural norms. The success of these tactics may be gauged by looking at metrics like increased sales and word-of-mouth advertising.

Global companies often develop strategic alliances and collaborations with regional competitors to better understand target markets, expand distribution channels, pool resources, and spread potential dangers. Joint ventures, collaborations, and strategic partnerships are all examples of types of strategic alliances. Synergy, knowledge transfer, resource sharing, competitive advantage, and financial performance are just a few of the indicators that may be used to gauge the success of these methods[27], [28].

Marketing and branding on a worldwide scale: How multinational corporations raise their profiles, strengthen their brands, and carve out a niche for themselves. These methods entail communicating effectively across cultural boundaries and tailoring messages to specific target audiences. Brand awareness, consumer participation, increased market share, and a positive return on ad spend are just a few of the metrics that must be considered when assessing the success of a worldwide marketing campaign.

International corporations now use technology and digital platforms to speed up innovation, boost productivity, and enrich their customers' interactions. Data analytics, AI, e-commerce, digital marketing, and process automation are just a few of the areas that may be addressed by technological innovation and digital transformation strategies. Considerations including technological uptake, competitive advantage, satisfied customers, and increased profits are all part of an effective evaluation of these tactics[29], [30].

Political, legal, financial, operational, and reputational risks are just some of the threats that international firms confront. Risk assessment, risk mitigation, contingency planning, and adherence to local legislation are all essential components of an effective risk management strategy. Considerations including risk exposure, risk mitigation efficiency, legal compliance, and organizational resilience are essential for assessing these plans[3], [31].

It is crucial to take into account the industry, competitive dynamics, macroeconomic conditions, and organizational goals while assessing the strategies of international company administrations. Financial performance indicators, market share statistics, customer feedback, and industry benchmarking are all examples of quantitative measurements that might be included in the research. Organizations may enhance their performance, build on their successes, and adjust to the dynamic nature of the global business environment by conducting in-depth analyses of these tactics[32], [33].

3. Materials and Methods

Here, we'll describe how the distance measure and score function we just described are employed in the neutrosophic TOPSIS and neutrosophic VIKOR methods' calculation procedures[34], [35]. Figure 1 shows the steps of the proposed model.

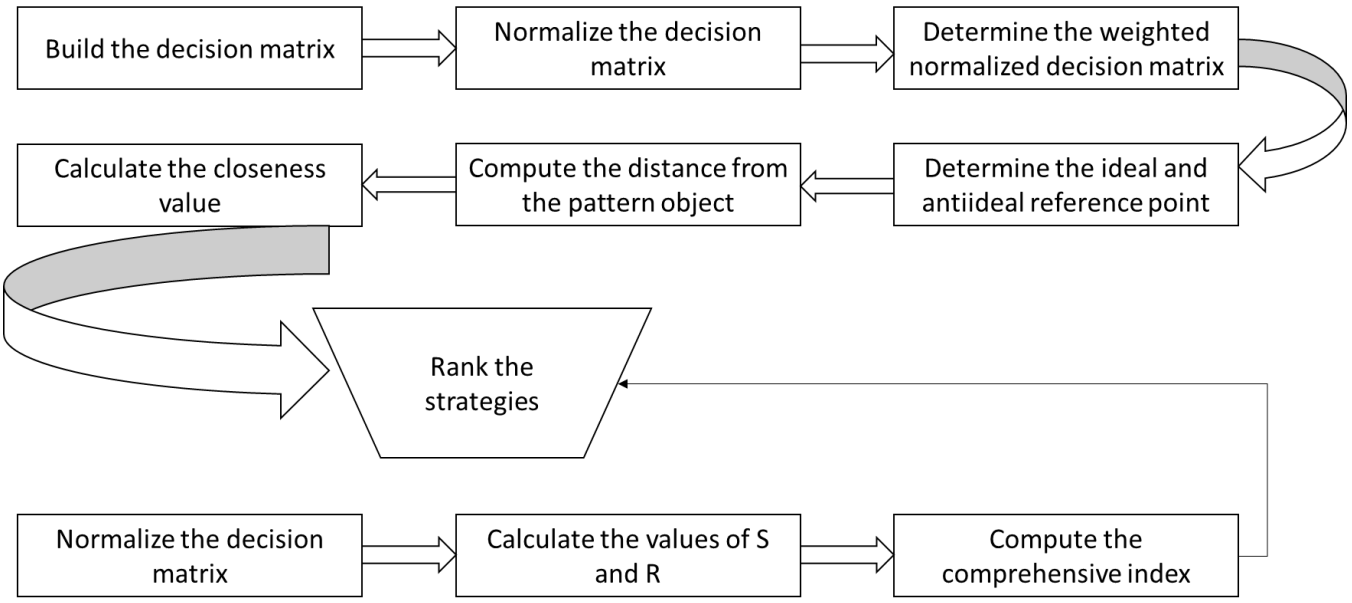

Figure 1. The framework of this study.

We used the interval-valued neutrosophic set. So, we can define some mathematical models of interval-valued neutrosophic sets as:

$$T_{IJ} = \frac{a_{ij}^{pos}}{a_{ij}^{pos}+a_{ij}^{neu}+a_{ij}^{neg}} \quad 1.1$$

$$I_{IJ} = \frac{a_{ij}^{neu}}{a_{ij}^{pos}+a_{ij}^{neu}+a_{ij}^{neg}} \quad 1.2$$

$$F_{IJ} = \frac{a_{ij}^{neg}}{a_{ij}^{pos}+a_{ij}^{neu}+a_{ij}^{neg}} \quad 1.3$$

We can define the interval-valued neutrosophic number as:

$$T_{ij}^{L} = T_{ij} - z_{\theta/2} \times \sqrt{\frac{T_{ij}(1-T_{ij})}{a_{ij}^{pos}+a_{ij}^{neu}+a_{ij}^{neg}}} \quad 1.4$$

$$T_{ij}^{U} = T_{ij} + z_{\theta/2} \times \sqrt{\frac{T_{ij}(1-T_{ij})}{a_{ij}^{pos}+a_{ij}^{neu}+a_{ij}^{neg}}} \quad 1.5$$

$$I_{ij}^{L} = I_{ij} - z_{\theta/2} \times \sqrt{\frac{I_{ij}(1-I_{ij})}{a_{ij}^{pos}+a_{ij}^{neu}+a_{ij}^{neg}}} \quad 1.6$$

$$I_{ij}^{U} = I_{ij} + z_{\theta/2} \times \sqrt{\frac{I_{ij}(1-I_{ij})}{a_{ij}^{pos}+a_{ij}^{neu}+a_{ij}^{neg}}} \quad 1.7$$

$$F_{ij}^{L} = F_{ij} - z_{\theta/2} \times \sqrt{\frac{F_{ij}(1-F_{ij})}{a_{ij}^{pos}+a_{ij}^{neu}+a_{ij}^{neg}}} \quad 1.8$$

$$F_{ij}^{U} = F_{ij} + z_{\theta/2} \times \sqrt{\frac{F_{ij}(1-F_{ij})}{a_{ij}^{pos}+a_{ij}^{neu}+a_{ij}^{neg}}} \quad 1.9$$

Where $z_{\theta/2}$ refers to the critical value

3.1 Neutrosophic TOPSIS Method

Decision alternatives are ranked (ordered) according to how closely they resemble the preferred pattern using the TOPIS approach. The ideal substitute achieves this by having the smallest possible distance to the pattern, whereas the anti-ideal reference substitute has the largest possible distance to the anti-pattern. The distances between each design and the ideal and anti-ideal patterns are determined. That's what makes the final tally possible.

3.1.1. Build the decision matrix.

This step used the opinions of experts to build the decision matrix.

3.1.2. Normalize the decision matrix.

$$a_i^* = \frac{a_i}{\sum_{k=1}^{n} a_j} \quad (1)$$

Where $i = 1,2,3, \ldots . m; j = 1,2,3 \ldots . n$

3.1.3. Determine the weighted normalized decision matrix.

$$t_i = a_i^* * w_i \quad (2)$$

3.1.4. Determine the ideal and anti-ideal reference point

$$t_i^+ = \begin{cases} \max\limits_j t_i & for\ positive\ criteria \\ \min\limits_j t_i & for\ cost\ criteria \end{cases} \quad (3.1)$$

$$t_i^- = \begin{cases} \min\limits_j t_i & for\ positive\ criteria \\ \max\limits_j t_i & for\ cost\ criteria \end{cases} \quad (3.2)$$

3.1.5. Compute the distance from the pattern object

$$e_j^+ = \sqrt{\sum_{i=1}^{m} \left| t_i - t_i^+ \right|^p} \quad (4)$$

$$e_j^- = \sqrt{\sum_{i=1}^{m} \left| t_i - t_i^- \right|^p} \quad (5)$$

3.1.6. Calculate the closeness value.

$$C_j = \frac{e_j^-}{e_j^- + e_j^+} \tag{6}$$

3.1.7 Rank the strategies.

3.2 Neutrosophic VIKOR Method

Using the VICOR technique, we may identify alternative courses of action and choose a middle ground that considers competing assessment criteria. Distances from the ideal and anti-ideal points are used to rank all the options.

3.2.1. Normalize the decision matrix.

$$z_i = \frac{a_i - \min x_i}{\max x_i - \min x_i} \tag{7}$$

3.2.2. Calculate the values of S and R

$$S_j = \sum_{i=1}^{m} w_i * z_i \tag{8}$$

$$R_j = \max_i (w_i z_i) \tag{9}$$

3.2.3 Compute the comprehensive index.

$$Q_i = u \frac{S_j - \min_j S_j}{\max_j S_j - \min_j S_j} + (1-u) \frac{R_j - \min_j R_j}{\max_j R_j - \min_j R_j} \tag{10}$$

3.2.4 Rank the strategies.

4. Application

Many organizations and firms tend to select the best strategy for their work. So, this section introduces various strategies and their factors to analyze and evaluate them. We used ten factors and seven strategies in this paper. The ten factors are used in this paper organized as: Several important elements must be considered when assessing the success of a global marketing strategy. These metrics are useful for gauging how far a campaign has traveled, how many people it has reached, and whether it has accomplished its goals. Some crucial elements are as follows:

Assess how well the company has been able to break into new markets thanks to its worldwide marketing efforts. Think about things like increasing your market share, attracting more customers, and opening in new areas.

Measure the success of your worldwide advertising campaign by asking consumers how well they know and understand your brand. Find out how your brand is doing in terms of recognition, affiliations, and overall brand image in various regions.

Examine how well marketing tactics strike a balance between being consistent internationally and tailoring to specific local markets. Evaluate how effectively the company has kept its brand image and messages similar throughout markets while catering to the needs of local consumers.

Determine how involved and responsive your customers are with global marketing campaigns. Measure the success of your marketing efforts by looking at indicators like website visits, social media shares, email opens, email clicks, and customer satisfaction.

Evaluate the company's proficiency in determining and appealing to desirable subsets of its target market. Assess how well the company's worldwide marketing efforts cater to the wants, requirements, and actions of its target consumers throughout the world.

Examine the marketing return on investment (ROI) for all of your international campaigns. Consider customer acquisition expenses, conversion rates, sales income, and overall profitability when you assess the value of marketing initiatives.

Examine the company's worldwide marketing strategy to see how well they set them out from the competition. Evaluate how well marketing has been in portraying the company as cutting-edge and ahead of the competition.

Ability to adjust global marketing tactics quickly and effectively in response to new opportunities and changing customer preferences. Evaluate how quickly and well you adapt to changes in the market and customer needs.

Assess how well your marketing material and messaging have been localized for various markets. Evaluate how successful localized marketing was at reaching the intended population, overcoming any language and cultural hurdles, and increasing consumer participation.

Analyzing and measuring the success of global marketing initiatives requires the use of marketing analytics and metrics. Analyze how well KPIs, marketing analytics tools, and data-driven insights are used to monitor progress and guide strategy.

Organizations may learn a lot about the success of their international marketing campaigns by keeping these things in mind. The results of this analysis may be used to better focus marketing efforts and adapt tactics to the dynamic nature of global marketplaces.

We used the experts and decision-makers to evaluate the factors and strategies. We build the decision makers by the interval-valued neutrosophic numbers. Then we applied the TOPSIS steps. We build the decision matrix by using interval-valued neutrosophic numbers as shown in Table 1. We use Eq. (1) to normalize the decision matrix. Then we construct the weighted normalized matrix by using Eq. (2) as shown in Table 2. Then compute the weights of factors. Then compute the ideal and anti-ideal reference point by using Eqs. (3.1 and 3.2). All factors are positive factors. Then compute the distance from the pattern object using Eqs. (4 and 5). Then compute the closeness value as shown in Figure 2. The results show strategy 6 is the best and strategy 1 is the worst.

Table 1. The interval-valued neutrosophic numbers between factors and strategies.

	$INTC_1$	$INTC_2$	$INTC_3$	$INTC_4$	$INTC_5$	$INTC_6$	$INTC_7$	$INTC_8$	$INTC_9$	$INTC_{10}$
$INTS_1$	([0.610, 0.713] [0.133, 0.215] [0.124, 0.205])	([0.581, 0.686] [0.119, 0.198] [0.130, 0.212])	([0.581, 0.686] [0.119, 0.198] [0.130, 0.212])	([0.829, 0.904] [0.017, 0.058] [0.021, 0.066])	([0.610, 0.713] [0.133, 0.215] [0.124, 0.205])	([0.581, 0.686] [0.119, 0.198] [0.130, 0.212])	([0.829, 0.904] [0.017, 0.058] [0.021, 0.066])	([0.610, 0.713] [0.133, 0.215] [0.124, 0.205])	([0.819, 0.895] [0.046, 0.103] [0.002, 0.029])	([0.610, 0.713] [0.133, 0.215] [0.124, 0.205])
$INTS_2$	([0.711, 0.805] [0.061, 0.125] [0.094, 0.167])	([0.610, 0.713] [0.133, 0.215] [0.124, 0.205])	([0.829, 0.904] [0.017, 0.058] [0.021, 0.066])	([0.610, 0.713] [0.133, 0.215] [0.124, 0.205])	([0.819, 0.895] [0.046, 0.103] [0.002, 0.029])	([0.711, 0.805] [0.061, 0.125] [0.094, 0.167])	([0.819, 0.895] [0.046, 0.103] [0.002, 0.029])	([0.711, 0.805] [0.061, 0.125] [0.094, 0.167])	([0.819, 0.895] [0.046, 0.103] [0.002, 0.029])	([0.711, 0.805] [0.061, 0.125] [0.094, 0.167])
$INTS_3$	([0.610, 0.713] [0.133, 0.215] [0.124, 0.205])	([0.819, 0.895] [0.046, 0.103] [0.002, 0.029])	([0.819, 0.895] [0.046, 0.103] [0.002, 0.029])	([0.819, 0.895] [0.046, 0.103] [0.002, 0.029])	([0.829, 0.904] [0.017, 0.058] [0.021, 0.066])	([0.819, 0.895] [0.046, 0.103] [0.002, 0.029])	([0.819, 0.895] [0.046, 0.103] [0.002, 0.029])	([0.819, 0.895] [0.046, 0.103] [0.002, 0.029])	([0.829, 0.904] [0.017, 0.058] [0.021, 0.066])	([0.610, 0.713] [0.133, 0.215] [0.124, 0.205])
$INTS_4$	([0.711, 0.805] [0.061, 0.125] [0.094, 0.167])	([0.819, 0.895] [0.046, 0.103] [0.002, 0.029])	([0.829, 0.904] [0.017, 0.058] [0.021, 0.066])	([0.711, 0.805] [0.061, 0.125] [0.094, 0.167])	([0.819, 0.895] [0.046, 0.103] [0.002, 0.029])	([0.819, 0.895] [0.046, 0.103] [0.002, 0.029])	([0.829, 0.904] [0.017, 0.058] [0.021, 0.066])	([0.711, 0.805] [0.061, 0.125] [0.094, 0.167])	([0.819, 0.895] [0.046, 0.103] [0.002, 0.029])	([0.711, 0.805] [0.061, 0.125] [0.094, 0.167])
$INTS_5$	([0.610, 0.713] [0.133, 0.215] [0.124, 0.205])	([0.819, 0.895] [0.046, 0.103] [0.002, 0.029])	([0.581, 0.686] [0.119, 0.198] [0.130, 0.212])	([0.819, 0.895] [0.046, 0.103] [0.002, 0.029])	([0.581, 0.686] [0.119, 0.198] [0.130, 0.212])	([0.610, 0.713] [0.133, 0.215] [0.124, 0.205])	([0.819, 0.895] [0.046, 0.103] [0.002, 0.029])	([0.581, 0.686] [0.119, 0.198] [0.130, 0.212])	([0.819, 0.895] [0.046, 0.103] [0.002, 0.029])	([0.581, 0.686] [0.119, 0.198] [0.130, 0.212])
$INTS_6$	([0.711, 0.805] [0.061, 0.125] [0.094, 0.167])	([0.711, 0.805] [0.061, 0.125] [0.094, 0.167])	([0.819, 0.895] [0.046, 0.103] [0.002, 0.029])	([0.829, 0.904] [0.017, 0.058] [0.021, 0.066])	([0.829, 0.904] [0.017, 0.058] [0.021, 0.066])	([0.711, 0.805] [0.061, 0.125] [0.094, 0.167])	([0.829, 0.904] [0.017, 0.058] [0.021, 0.066])	([0.829, 0.904] [0.017, 0.058] [0.021, 0.066])	([0.711, 0.805] [0.061, 0.125] [0.094, 0.167])	([0.610, 0.713] [0.133, 0.215] [0.124, 0.205])
$INTS_7$	([0.610, 0.713] [0.133, 0.215] [0.124, 0.205])	([0.711, 0.805] [0.061, 0.125] [0.094, 0.167])	([0.829, 0.904] [0.017, 0.058] [0.021, 0.066])	([0.610, 0.713] [0.133, 0.215] [0.124, 0.205])	([0.711, 0.805] [0.061, 0.125] [0.094, 0.167])	([0.610, 0.713] [0.133, 0.215] [0.124, 0.205])	([0.829, 0.904] [0.017, 0.058] [0.021, 0.066])	([0.610, 0.713] [0.133, 0.215] [0.124, 0.205])	([0.829, 0.904] [0.017, 0.058] [0.021, 0.066])	([0.610, 0.713] [0.133, 0.215] [0.124, 0.205])

Table 2. The weighted normalized matrix.

	$INTC_1$	$INTC_2$	$INTC_3$	$INTC_4$	$INTC_5$	$INTC_6$	$INTC_7$	$INTC_8$	$INTC_9$	$INTC_{10}$
$INTS_1$	0.031167	0.027723	0.029414	0.043114	0.031864	0.030356	0.04299	0.032232	0.043384	0.032076
$INTS_2$	0.036328	0.029107	0.041969	0.031725	0.042781	0.037148	0.042471	0.037569	0.043384	0.037387
$INTS_3$	0.031167	0.03908	0.041462	0.042594	0.043303	0.042791	0.042471	0.043275	0.043914	0.032076
$INTS_4$	0.036328	0.03908	0.041969	0.036977	0.042781	0.042791	0.04299	0.037569	0.043384	0.037387
$INTS_5$	0.031167	0.03908	0.029414	0.042594	0.030349	0.031871	0.042471	0.0307	0.043384	0.030551
$INTS_6$	0.036328	0.033927	0.041462	0.043114	0.043303	0.037148	0.04299	0.043804	0.037663	0.032076
$INTS_7$	0.031167	0.033927	0.041969	0.031725	0.037139	0.031871	0.04299	0.032232	0.043914	0.032076

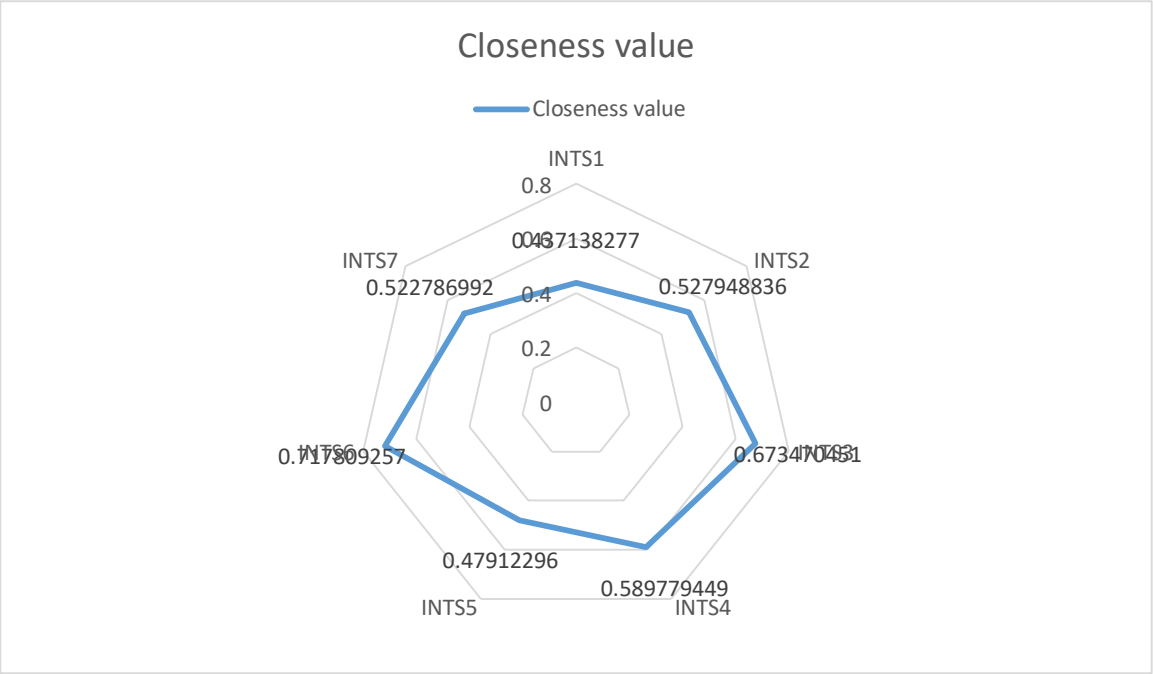

Figure 2. The value of closeness by the TOPSIS method.

Then apply the steps of the interval-valued neutrosophic VIKOR method to analyze and evaluate the strategies in international business administration. We normalize the decision matrix by using Eq. (7) as shown in Table 3. Then we compute the values of S and R by using Eqs. (8 and 9). Then we obtain the index of comprehensive by using Eq. (10). We used the u=0.5 to compute the value as shown in Figure 3. Figure 4 shows the rank of strategies by the interval-valued neutrosophic TOPSIS and interval-valued neutrosophic VIKOR method. The results show that strategy 4 is the best and strategy 5 is the worst. We obtained that Technological Innovation and Digital Transformation is the best strategy to be applied in organization and firm.

Table 3. The normalized decision matrix by the VIKOR method.

	$INTC_1$	$INTC_2$	$INTC_3$	$INTC_4$	$INTC_5$	$INTC_6$	$INTC_7$	$INTC_8$	$INTC_9$	$INTC_{10}$
$INTS_1$	0.08857	0.092193	0.102238	0	0.091458	0	0	0.086678	0.009589	0.019758
$INTS_2$	0	0.08096	0	0.103568	0.004176	0.052888	0.113155	0.046703	0.009589	0.08857
$INTS_3$	0.08857	0	0.004123	0.004729	0	0.096826	0.113155	0.003958	0	0.019758
$INTS_4$	0	0	0	0.055804	0.004176	0.096826	0	0.046703	0.009589	0.08857
$INTS_5$	0.08857	0	0.102238	0.004729	0.103568	0.011798	0.113155	0.098156	0.009589	0
$INTS_6$	0	0.041836	0.004123	0	0	0.052888	0	0	0.113155	0.019758
$INTS_7$	0.08857	0.041836	0	0.103568	0.049279	0.011798	0	0.086678	0	0.019758

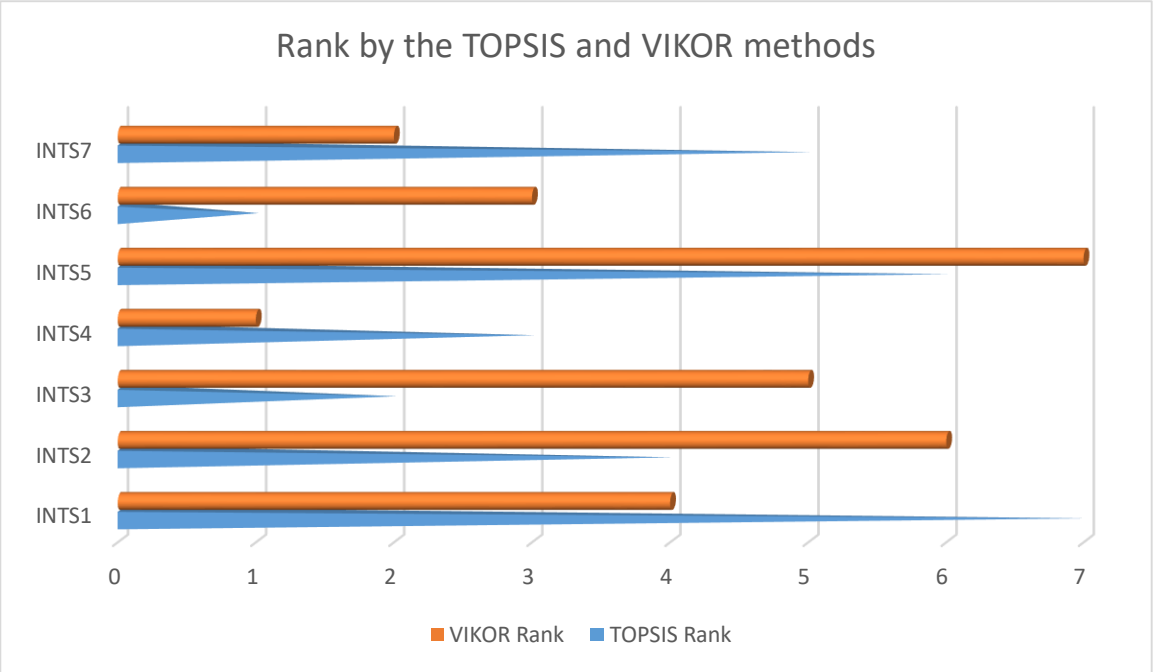

Figure 3. The rank of strategies by the interval-valued neutrosophic TOPSIS and VIKOR methods.

We change the value of u in the VIKOR method to show the rank of strategies. We change this value between 0.1 and 1. The rank of strategies after this change is shown in Figure 4. All values show that strategy 4 is the best and strategy 5 is the worst.

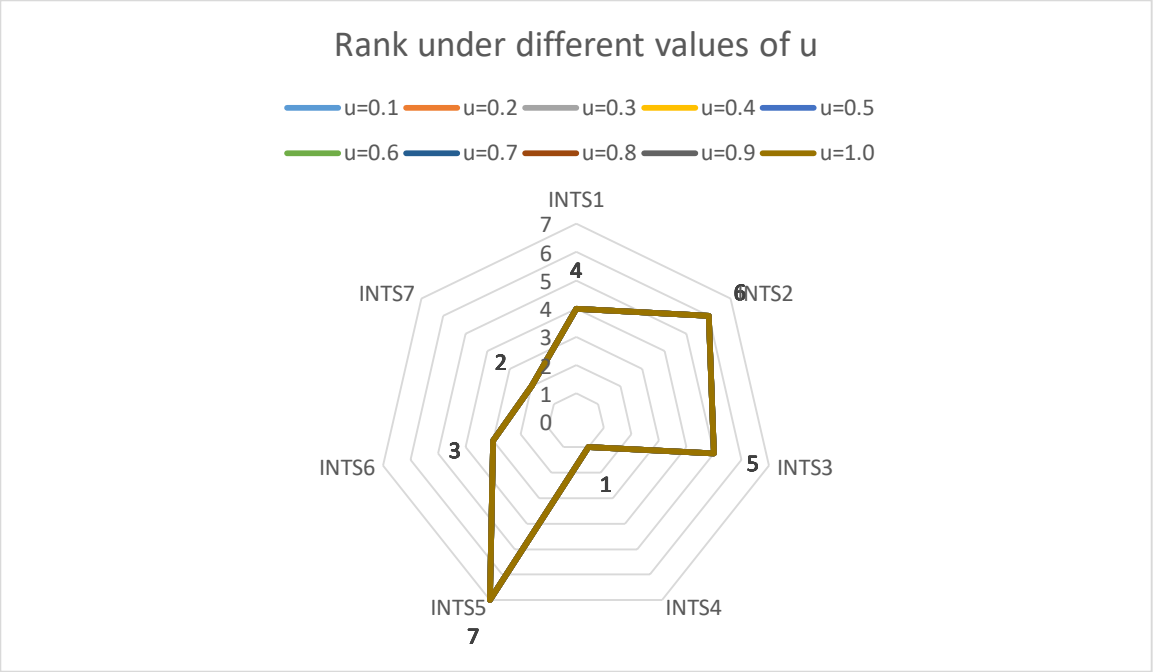

Figure 4. The rank of strategies when changing the value of u between 0.1 and 1.

4.1 Sensitivity Analysis

In this part, we change the weights of the criteria to check the rank of alternatives. The rank of alternatives is evaluated by the two MCDM methods. We change the weights of the criteria by eleven cases. In the first case, we put all criteria equal weights. In the second and rest of the cases, we put the one criterion with 0.5 weight and all criteria take the sum of 0.5 weight as shown in Figure 5. Then we apply the TOPSIS and VIKOR method in eleven cases. We got the eleven ranks in TOPSIS and VIKOR methods as shown in Figures 6 and 7.

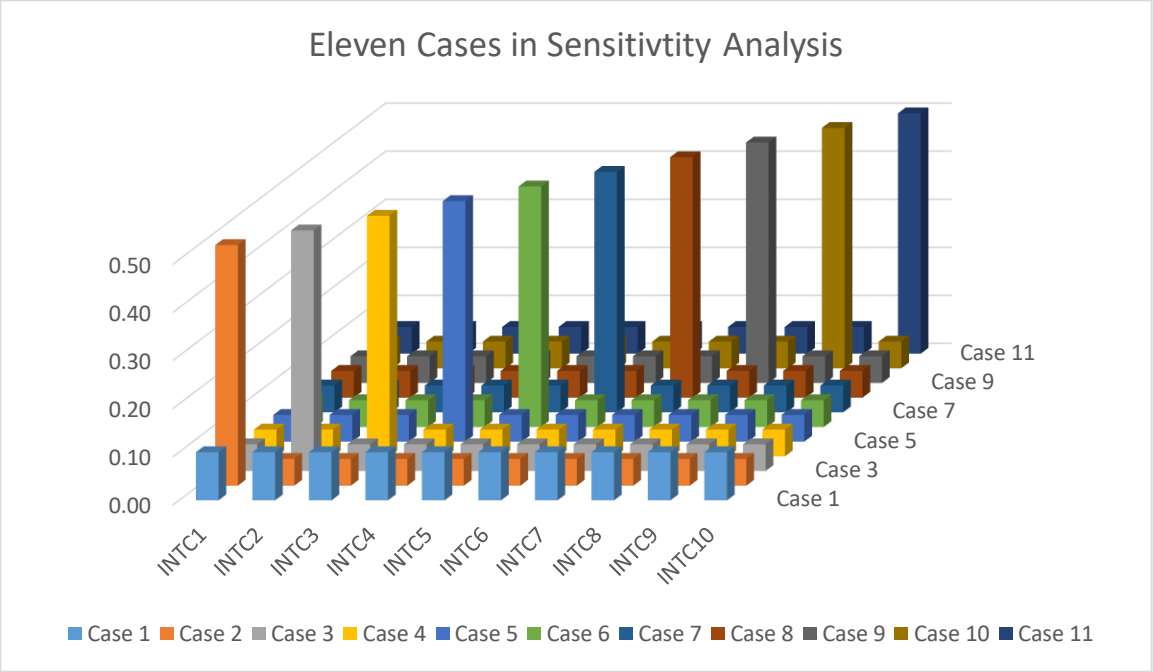

Figure 5. The eleven cases in changing the weights of criteria.

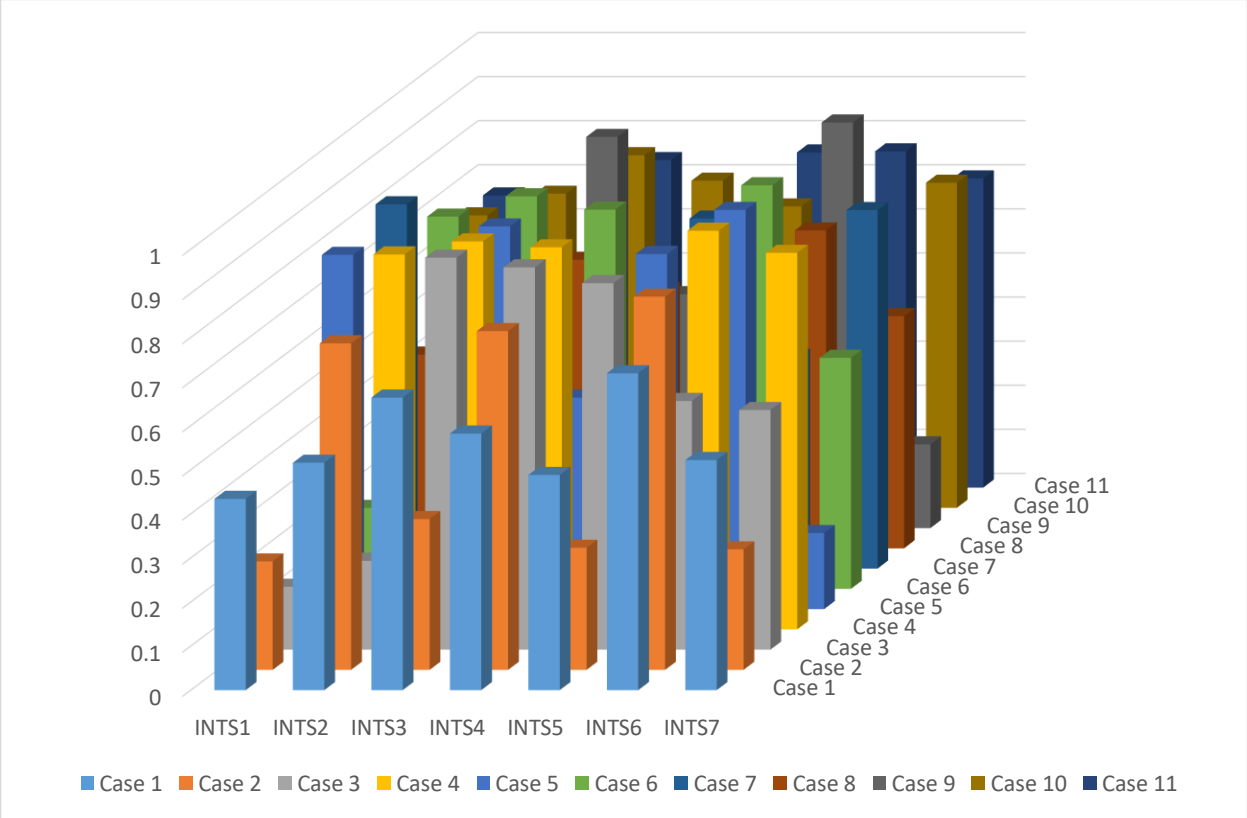

Figure 6. The rank of alternatives by the TOPSIS method under eleven cases.

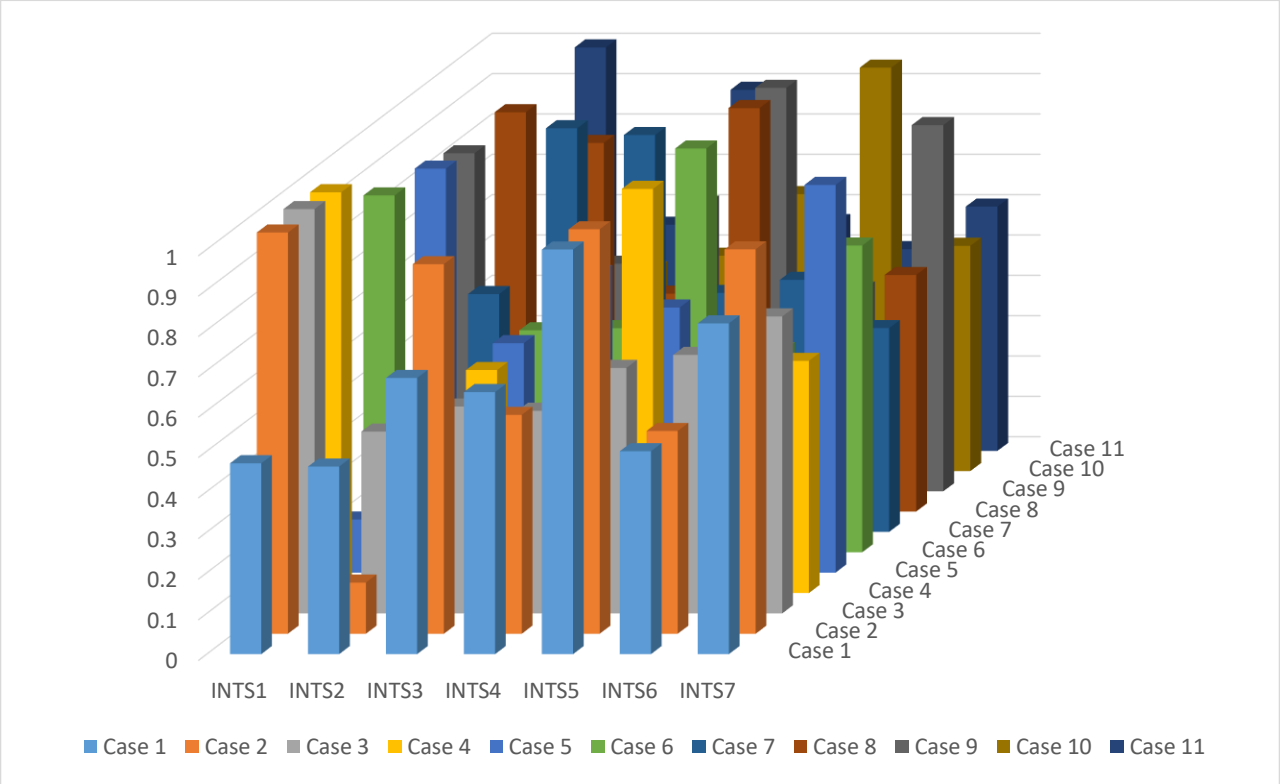

Figure 7. The rank of alternatives by the VIKOR method under eleven cases.

4.2 Comparative Analysis

In this part, we compare the rank of alternatives by other MCDM methods like MABAC, CODAS, and MULTIMOORA. We applied these methods to the weights of criteria by the proposed method. This part aims to conclude the correlation between the proposed method and the other MCDM methods. Figure 8 shows the comparative study. We conclude the proposed model is robust compared with other MCDM methods.

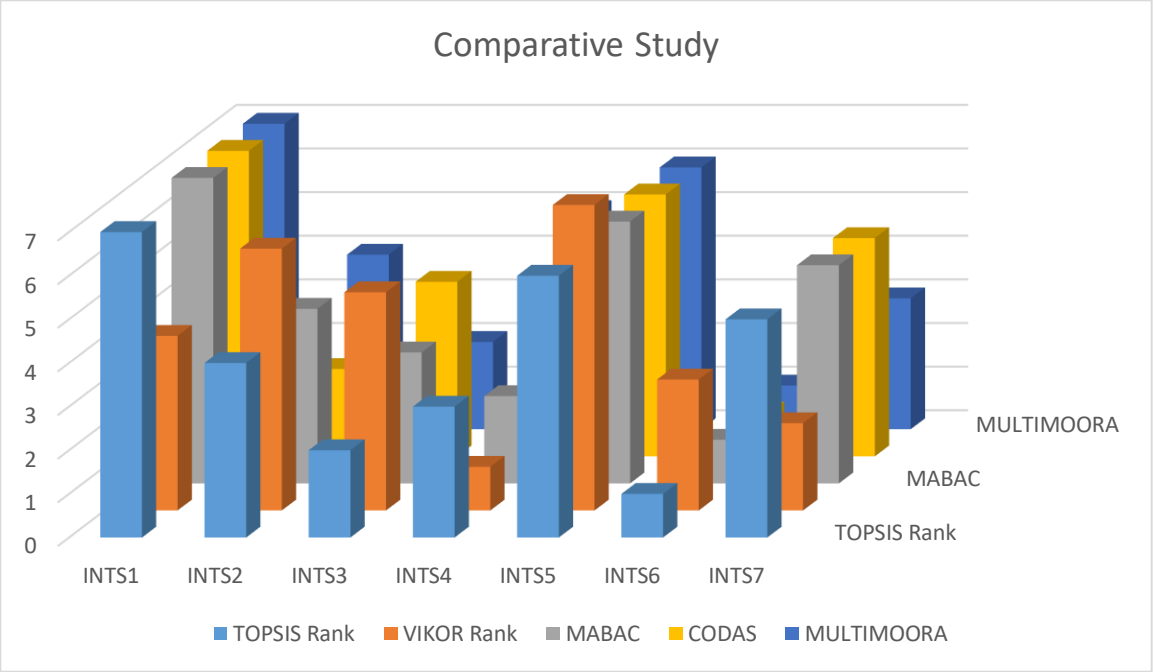

Figure 8. The Comparative study between the proposed method and other MCDM methods.

4.3 Managerial Implications

Several management considerations arise when businesses adopt foreign business strategies. To successfully implement international company plans and compete in global marketplaces, managers must consider these ramifications. Managers should be aware of the following consequences of adopting various approaches to doing business abroad:

International Plan for Standardization:

Managers should centralize decision-making to guarantee market-wide uniformity in product development, manufacturing, and sales and distribution.

To achieve economies of scale and cost savings, management should create standardized procedures and systems.

Managers in charge of global branding must create and maintain a unified visual identity for their products or services across all markets.

Approach to Localization:

Managers need to put in the time and effort to learn about the local market to meet the needs of local customers and comply with local regulations.

Managers should delegate authority to divisions so that employees on the ground may make choices and adjust tactics in response to changing market circumstances.

Managers need to set up adaptable production and supply chain systems to account for regional differences in product demand and availability.

Cross-Border Tactics:

Managers need to balance the priorities of globalization and localization by considering the unique characteristics of both global and local markets.

Managers should encourage employees at all levels to share their expertise and work together across regions and subsidiaries to make the most of available global resources and skills.

To successfully manage multicultural teams and deal with the inevitable cultural frictions that arise, managers need to cultivate their cross-cultural competence.

Trade Policy:

Managers should do extensive market research to determine markets of interest, learn about client wants and requirements, and plot market entrance tactics.

Managers are responsible for ensuring that all export documents and export laws are met to facilitate efficient international commerce.

Managers should set up reliable distribution and logistics networks to back up export efforts and guarantee on-time delivery to consumers.

Alliances and Joint Ventures:

Managers are responsible for selecting and overseeing all relationships, taking into account variables including compatibility, shared vision, and mutual advantages. It's important to establish and nurture healthy connections with collaborators.

Managers must enable cultural integration amongst collaborating organizations to harmonize objectives, values, and methods of operation.

Managers should anticipate and address potential risks and disputes in strategic partnerships and joint ventures.

Investments made from outside the country:

To maintain seamless operations and reduce legal risks, managers must be familiar with and abide by the host country's laws, regulations, and business practices.

To help FDI operations and close cultural and skill gaps, managers need to do a good job of attracting, developing, and retaining local talent.

Managers need to find a happy medium between globalizing all operations and localizing certain of them to maximize efficiency and success.

Franchising:

Managers are responsible for selecting franchisees who share the company's values and have the skills to successfully implement the business plan.

Managers should provide extensive training programs to franchisees so that all customers get the same high-quality goods and services.

Managers have a responsibility to ensure that the brand's values are consistently upheld and enforced throughout all franchised businesses.

Acquisitions and Mergers (A&M):

When two or more organizations merge, it may be difficult to integrate their own cultures, values, and work styles.

The key to realizing cost savings, operational efficiency, and growth potential from a merger is for managers to discover and capitalize on synergies between the merging firms.

To keep disruptions to a minimum and integration to a minimum, managers must effectively communicate and manage change throughout the M&A process.

To successfully negotiate the management implications of international company strategy, managers need to be flexible, culturally aware, and equipped with excellent leadership and communication abilities. Also, they need to encourage a global perspective and learn everything they can about the many marketplaces in which they compete.

5. Conclusion

The efficacy, difficulties, and prospects for success in the global marketplace may be gained useful insights via the examination and assessment of techniques implemented by multinational corporate administrations. Market entrance, supply chain management, cultural adaptation, strategic partnerships, global marketing, technical innovation, and risk management are just some of the international business strategy topics we've covered. Organizations may better understand their own capabilities, limitations, and development prospects by analyzing these approaches. Market share, brand recognition, customer loyalty, competitive advantage, flexibility, and return on investment are just a few of the metrics that must be taken into account when assessing an international company strategy. These aspects provide a complete picture of the strategies' efficacy and influence in realizing the organization's goals. The study process guarantees a vital analysis that includes real-world insights and experiences by combining a literature review, case studies, interviews, and surveys. This study's conclusions stress the value of planning and executing successful strategies in international companies. Organizations may expand into new markets and take advantage of global possibilities with the help of well-thought-out strategies that allow them to establish powerful brands, navigate cultural differences, form strategic partnerships, adopt new technologies, and mitigate risks. Companies may enhance their worldwide operations and achieve long-term growth goals by analyzing and readjusting their global strategy. This study used

the interval-valued neutrosophic set to analyze and evaluate the strategies of international business administration. This study integrated the interval-valued neutrosophic set with the MCDM methods such as TOPSIS and VIKOR methods. These methods are used to rank and select the best strategy. This study used ten factors to be evaluated. Then these factors are used in the analysis of the seven strategies. We obtained that Technological Innovation and Digital Transformation is the best strategy to be applied in organizations and firm.

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