

Assessing International Market Attractiveness Using an AHP-SAW-TOPSIS Decision Support Framework

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Abstrak

Pemilihan pasar internasional menjadi proses yang menantang bagi bisnis karena adanya perbedaan prospek pasar dan kondisi antarnegara. Penelitian ini menilai daya tarik pasar negara emerging dan berkembang terpilih melalui kerangka pendukung keputusan yang mengintegrasikan AHP, SAW, dan TOPSIS. Dengan menggunakan pendekatan kuantitatif komparatif, analisis ini menggunakan data sekunder dari dua puluh negara dan sembilan indikator bisnis global yang dikelompokkan ke dalam dimensi ekonomi, teknologi, dan institusional. Dimensi ekonomi mencakup GDP, GDP per capita, dan labour force. Dimensi teknologi mencakup ICT Index, Global Innovation Index, dan Logistics Performance Index, sedangkan dimensi institusional mencakup Regulatory Quality, Corruption Perception Index, dan Sustainability Index. Seluruh indikator ditransformasikan menggunakan normalisasi Min-Max agar dapat dibandingkan. AHP digunakan untuk menentukan bobot kriteria, sedangkan SAW dan TOPSIS diterapkan untuk menghasilkan dan membandingkan peringkat daya tarik pasar. Hasil penelitian menunjukkan bahwa dimensi ekonomi memperoleh prioritas tertinggi, diikuti oleh dimensi teknologi dan institusional. SAW dan TOPSIS menghasilkan hasil yang konsisten, dengan China berada pada peringkat pertama, diikuti oleh Uni Emirat Arab, Arab Saudi, dan Polandia. Temuan ini menunjukkan bahwa daya tarik pasar lebih tepat dinilai melalui pendekatan pendukung keputusan multidimensional daripada melalui satu indikator ekonomi saja.

Kata Kunci: *pemilihan pasar internasional, daya tarik pasar, pengambilan keputusan multikriteria, AHP-SAW-TOPSIS, pasar emerging dan berkembang*

Abstract

International market selection is challenging because countries differ in market prospects and business conditions. This study assesses the attractiveness of selected emerging and developing markets through a decision-support framework integrating the Analytic Hierarchy Process (AHP), Simple Additive Weighting (SAW), and TOPSIS. Using a quantitative comparative approach, the study uses secondary data from twenty countries and nine global indicators grouped into economic, technological, and institutional dimensions. The economic dimension comprises Gross Domestic Product (GDP), GDP per capita, and labour force. The technological dimension includes the ICT Index, Global Innovation Index, and Logistics Performance Index, while the institutional dimension covers Regulatory Quality, Corruption Perception Index, and Sustainability Index. All indicators were transformed using Min-Max normalisation to ensure comparability. AHP was used to determine criteria weights, while SAW and TOPSIS produced and compared attractiveness rankings. The findings show that the economic dimension received the highest priority, followed by technological and institutional dimensions. Both methods generated consistent outcomes, with China ranked first, followed by the United Arab Emirates, Saudi Arabia, and Poland. These findings indicate that market attractiveness is better

evaluated through a multidimensional decision-support approach than through a single economic indicator.

Keywords: *international market selection, market attractiveness, multi-criteria decision making, AHP-SAW-TOPSIS, emerging and developing markets.*

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INTRODUCTION

For firms seeking to expand beyond domestic markets, selecting the right international market is a crucial strategic decision. This decision requires firms to identify which countries offer the most suitable conditions, strongest opportunities, and lowest possible risks for business expansion. However, evaluating foreign market attractiveness is not straightforward because countries differ in economic capacity, technological readiness, logistics performance, institutional quality, and long-term sustainability conditions (Francioni & Martín Martín, 2024; López-Cadavid et al., 2023). Therefore, international market selection should not be based only on general market size, but on a broader evaluation of country-level business conditions.

International Market Selection (IMS) is commonly understood as a strategic process of identifying, evaluating, selecting, and exploiting opportunities in foreign markets (Francioni & Martín Martín, 2024). In practice, firms usually face several market alternatives while having limited information, resources, and managerial capacity. This creates a decision-making problem because each country may have different strengths and weaknesses across several dimensions. For example, one country may offer a large market size and abundant labour force, while another may provide stronger digital infrastructure, logistics capability, or institutional stability. As a result, foreign market evaluation requires a structured approach that can compare several alternatives and criteria simultaneously (López-Cadavid et al., 2023; Rojas-Gualdrón et al., 2025).

Previous studies show that IMS is a multidimensional decision problem. López-Cadavid et al. (2023) explain that international market selection may involve cost, logistics, trade barriers, economic factors, environmental conditions, and cultural aspects. Rojas-Gualdrón et al. (2025) also show that decision-support models can assist export market selection by integrating criteria weighting, uncertainty handling, and market ranking. In addition, several studies indicate that market attractiveness may depend on industry-specific factors, such as logistics costs, transport time, trade barriers, certification, resource capability, and product feasibility (Baena-Rojas et al., 2023; Özekenci, 2024; Aghazadeh et al., 2025). These findings indicate that market attractiveness cannot be represented by a single economic indicator alone.

This issue becomes more relevant in emerging and developing markets because these countries often have uneven development profiles. Some countries may have large Gross Domestic Product (GDP) and labour force, but weaker institutional quality or technological readiness. Other countries may have smaller economic scale but stronger innovation capability, logistics performance, or governance conditions. This creates the main research problem of this study: how can different country profiles be

compared fairly when each market performs differently across economic, technological, and institutional dimensions? Without a systematic framework, market selection may become overly dependent on subjective judgement or dominated by macroeconomic size (Vafaei et al., 2022; Saka et al., 2025).

To address this problem, this study applies a decision-support approach based on Multi-Criteria Decision Making (MCDM). Decision Support Systems (DSS) help decision-makers organise data, compare alternatives, and interpret decision outputs in complex or semi-structured decision problems (Fernando & Baldeovar, 2022; Stanek et al., 2022). Meanwhile, MCDM provides a systematic procedure for evaluating alternatives based on several criteria, criteria weights, and alternative performance values (Vafaei et al., 2022; Saka et al., 2025). In the context of international market selection, MCDM is useful because it can transform multiple country-level indicators into a structured and transparent ranking model.

This study evaluates market attractiveness through three main dimensions: economic, technological, and institutional. The economic dimension consists of GDP, GDP per capita, and labour force, which represent market size, income level, and productive capacity. The technological dimension consists of the Information and Communication Technology (ICT) Index, Global Innovation Index, and Logistics Performance Index, which reflect digital readiness, innovation capability, and logistics efficiency. The institutional dimension consists of Regulatory Quality, Corruption Perception Index, and Sustainability Index, which represent governance reliability, public sector transparency, and long-term sustainability. These indicators were selected because they represent broader business conditions that influence international market attractiveness in emerging and developing economies (López-Cadavid et al., 2023; Rojas-Gualdrón et al., 2025; Özekenci, 2024).

Since the indicators use different units and measurement scales, this study applies Min-Max normalisation before the weighting and ranking process. Normalisation is important in MCDM because it transforms heterogeneous data into comparable values within the same analytical framework (Vafaei et al., 2022; Krishnan, 2022). After normalisation, the Analytic Hierarchy Process (AHP) is used to determine the relative importance of each criterion through pairwise comparison. AHP is suitable for this study because market attractiveness indicators do not have equal levels of importance, and the weighting process needs to be structured and consistent (Saaty, 1980; Petrillo et al., 2023).

After the criteria weights are obtained, Simple Additive Weighting (SAW) and the Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS) are applied to rank the country alternatives. SAW calculates the final preference score by multiplying each normalised value with its corresponding weight and summing the results for each alternative (Churchman & Ackoff, 1954; Taherdoost, 2023). TOPSIS provides a comparative ranking by measuring each alternative's distance from the positive ideal solution and the negative ideal solution (Hwang & Yoon, 1981; Taherdoost & Madanchian, 2023). By combining AHP, SAW, and TOPSIS, this study uses both additive and distance-based ranking logic to produce and compare market attractiveness results.

Based on the explanation above, this study aims to evaluate and rank selected emerging and developing markets using a hybrid decision-support framework that

integrates AHP, SAW, and TOPSIS. The study uses secondary data from twenty countries and nine global business indicators grouped into economic, technological, and institutional dimensions. The expected contribution of this study is to provide a more systematic, transparent, and multidimensional approach to international market selection. Instead of relying only on GDP or other single economic indicators, this framework helps compare country attractiveness based on broader business conditions and supports more objective international expansion decisions.

METHODOLOGY

This study used a quantitative approach with a descriptive and comparative research design. The quantitative approach was applied because the study relied on numerical secondary data, mathematical calculations, and ranking procedures to evaluate country attractiveness. The descriptive design was used to explain the economic, technological, and institutional conditions of each country, while the comparative design was used to compare selected emerging and developing markets based on their relative attractiveness. The analysis was conducted using a hybrid Multi-Criteria Decision Making (MCDM) framework by integrating the Analytic Hierarchy Process (AHP), Simple Additive Weighting (SAW), and the Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS).

The population of this study consisted of countries categorized as emerging and developing economies. Since it was not practical to evaluate all emerging and developing countries, the sample was selected using purposive sampling. The sample countries were selected based on three criteria: classified as emerging or developing economies, having complete and publicly available data for all research indicators, and having relevance in global or regional trade. Based on these criteria, twenty countries were selected as research alternatives, namely China, India, Indonesia, Brazil, Mexico, South Africa, Türkiye, Vietnam, Thailand, Egypt, Nigeria, Bangladesh, United Arab Emirates, Saudi Arabia, Colombia, Peru, Romania, Poland, Chile, and the Philippines.

The data collection technique used in this study was documentation. The study used secondary data obtained from official international databases and institutional reports. The analytical instrument in this study was a country–criteria decision matrix consisting of twenty country alternatives and nine evaluation indicators. The indicators were grouped into three dimensions: economic, technological, and institutional. The economic dimension consisted of GDP, GDP per capita, and labour force. The technological dimension consisted of ICT Index, Global Innovation Index, and Logistics Performance Index. The institutional dimension consisted of Regulatory Quality, Corruption Perception Index, and Sustainability Index. The data sources used in this study are presented in Table 1.

Table 1. Research Indicators and Data Sources

Dimension	Indicator	Data Source
Economic	GDP	World Bank Data, 2024
Economic	GDP per capita	World Bank Data, 2024
Economic	Labour force	World Bank Data, 2024
Technological	ICT Index	ITU, 2024

Dimension	Indicator	Data Source
Technological	Global Innovation Index	WIPO, 2024
Technological	Logistics Performance Index	World Bank, 2023
Institutional	Regulatory Quality	World Bank, 2024
Institutional	Corruption Perception Index	Transparency International, 2024
Institutional	Sustainability Index	SDG Transformation Centre, 2024

Source: Secondary data processed by the researcher, 2026.

The data analysis was carried out through several stages. First, all raw data were arranged into an initial decision matrix consisting of twenty country alternatives and nine evaluation criteria. Second, Min-Max normalization was applied to transform all indicators into comparable values between 0 and 1 because the indicators had different units and measurement scales. All indicators were classified as benefit criteria, meaning that higher values represent stronger performance and higher market attractiveness. Third, AHP was used to determine the relative weight of each dimension and indicator through pairwise comparison. The consistency of the AHP weighting process was evaluated using the Consistency Ratio, where a value below 0.10 indicated that the weighting results were acceptable.

After the criteria weights were obtained, SAW and TOPSIS were applied to generate the country attractiveness rankings. SAW calculated the final preference score by multiplying each normalized value with its corresponding criterion weight and summing the results for each country. TOPSIS was then used as a comparative ranking method by measuring each country's distance from the positive ideal solution and the negative ideal solution. The final stage compared the rankings generated by SAW and TOPSIS to identify the consistency of the market attractiveness results.

RESULTS AND DISCUSSION

AHP Criteria Weighting Results

The Analytic Hierarchy Process (AHP) calculation was used to determine the relative importance of each criterion in evaluating market attractiveness. The weighting process produced global priority weights by combining the main dimension weights with the local weights of each indicator. The final AHP priority weights are presented in Table 2.

Table 2. Final Priority Weights

Indicator	Main Weight	Local Weight	Global Weight
GDP	0.443	0.633	0.281
GDP per capita	0.443	0.260	0.115
Labour force	0.443	0.106	0.047
ICT Index	0.387	0.539	0.209
Global Innovation Index	0.387	0.297	0.115
Logistics Performance Index	0.387	0.164	0.063
Regulatory Quality	0.170	0.539	0.092
Corruption Perception Index	0.170	0.297	0.051

Indicator	Main Weight	Local Weight	Global Weight
Sustainability Index	0.170	0.164	0.028

Source: AHP calculation results, 2026.

Based on Table 2, GDP received the highest global weight at 0.281, indicating that economic scale is the most influential indicator in the market attractiveness model. The ICT Index ranked second with a global weight of 0.209, showing that digital readiness is also an important factor in evaluating international market potential. GDP per capita and the Global Innovation Index followed with equal global weights of 0.115. Meanwhile, institutional indicators such as Regulatory Quality, Corruption Perception Index, and Sustainability Index received lower weights, although they still contributed to the overall evaluation. These results indicate that the model gives stronger priority to economic strength and technological readiness, while institutional conditions function as supporting factors in assessing market attractiveness.

The weighting results are consistent with the logic of Multi-Criteria Decision Making (MCDM), where criteria do not have the same level of importance and need to be weighted before alternatives are ranked (Vafaei et al., 2022; Saka et al., 2025). The dominant weight of GDP shows that macroeconomic size remains important in international market selection, while the high position of the ICT Index indicates that technological readiness is also relevant in modern market evaluation. This supports previous studies stating that market selection should involve multiple criteria, including economic, logistical, technological, and institutional conditions, rather than relying on one indicator alone (López-Cadavid et al., 2023; Rojas-Gualdrón et al., 2025).

SAW Ranking Results

After the criteria weights were obtained, the Simple Additive Weighting (SAW) method was applied to calculate the preference score of each country. The SAW score was obtained by multiplying each normalized indicator value with its corresponding global weight and summing the results for each alternative. Countries with higher SAW scores indicate stronger overall performance across the economic, technological, and institutional dimensions. The SAW final ranking is presented in Table 3.

Table 3. SAW Final Ranking

Rank	Country	SAW Score
1	China	0.762
2	United Arab Emirates	0.625
3	Saudi Arabia	0.506
4	Poland	0.506
5	Chile	0.431
6	Romania	0.397
7	Türkiye	0.382
8	Thailand	0.354
9	Brazil	0.335
10	Vietnam	0.327
11	South Africa	0.318
12	Mexico	0.303

Rank	Country	SAW Score
13	India	0.289
14	Philippines	0.269
15	Peru	0.259
16	Colombia	0.253
17	Indonesia	0.245
18	Egypt	0.242
19	Bangladesh	0.088
20	Nigeria	0.024

Source: SAW calculation results, 2026.

The SAW results show that China achieved the highest score, indicating the strongest overall attractiveness among the selected emerging and developing markets. This result is mainly supported by China's strong performance in GDP and labour force, as well as its technological capability. The United Arab Emirates ranked second, supported by strong GDP per capita, ICT readiness, and institutional performance. Saudi Arabia and Poland ranked third and fourth, with very close SAW scores. This shows that countries with a balanced combination of economic capacity, technological readiness, and institutional support tend to achieve higher attractiveness scores.

Meanwhile, Bangladesh and Nigeria ranked at the bottom because their performance was relatively weaker across several indicators, especially in technological and institutional dimensions. This result shows that SAW is useful for identifying countries with stronger accumulated weighted performance. However, SAW uses an additive logic, meaning that strong performance in one criterion may compensate for weaker performance in another criterion. Therefore, SAW results should be interpreted carefully, especially in multidimensional evaluation problems where each criterion may influence the final ranking differently (Vafaei et al., 2022; Ciardiello & Genovese, 2023).

TOPSIS Ranking Results

The Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS) method was used as a comparative ranking method by calculating each country's distance from the positive ideal solution and the negative ideal solution. Countries with higher relative closeness values are considered more attractive because they are closer to the ideal performance condition. The TOPSIS final ranking is presented in Table 4.

Table 4. TOPSIS Ranking Results

Rank	Country	SAW Score
1	China	0.752
2	United Arab Emirates	0.496
3	Saudi Arabia	0.460
4	Poland	0.452
5	Chile	0.412
6	Türkiye	0.391
7	Romania	0.388

Rank	Country	SAW Score
8	Thailand	0.386
9	Vietnam	0.354
10	Brazil	0.353
11	South Africa	0.344
12	Mexico	0.337
13	Peru	0.291
14	Philippines	0.288
15	Egypt	0.288
16	Colombia	0.274
17	India	0.256
18	Indonesia	0.236
19	Bangladesh	0.145
20	Nigeria	0.038

Source: TOPSIS calculation results, 2026.

The TOPSIS ranking shows a similar pattern to the SAW results. China remained in the first position, indicating that it was the closest alternative to the ideal solution. The United Arab Emirates, Saudi Arabia, and Poland also remained in the top four, which shows that these countries consistently performed well across the selected criteria. The consistency of the top-ranked countries suggests that the strongest markets are not only supported by one dominant indicator, but by a combination of economic scale, technological readiness, income level, logistics capability, and institutional conditions. Meanwhile, Bangladesh and Nigeria remained in the lowest positions, showing a larger distance from the ideal market profile.

The use of TOPSIS strengthens the evaluation because it does not only calculate accumulated performance but also compares each country with the best and weakest possible profiles. This is important in market attractiveness evaluation because a country may perform strongly in one indicator but still be far from the ideal profile if other indicators are weak. TOPSIS is commonly used in MCDM because it ranks alternatives based on their closeness to the positive ideal solution and distance from the negative ideal solution (Hwang & Yoon, 1981; Taherdoost & Madanchian, 2023). Therefore, the TOPSIS results provide an additional perspective to support the interpretation of the SAW ranking.

Comparison of SAW and TOPSIS Results

The ranking comparison indicates that SAW and TOPSIS led to a largely similar interpretation of country attractiveness. Both methods placed China, the United Arab Emirates, Saudi Arabia, and Poland in the four highest positions, showing that these countries had stronger overall performance across the selected indicators. This consistency also indicates that the proposed hybrid decision-support model produced stable results, although the two methods apply different calculation principles. SAW

evaluates each alternative through the accumulation of weighted performance scores, whereas TOPSIS determines the ranking based on how close each country is to the ideal market profile and how far it is from the weakest profile.

However, several changes appeared among the middle-ranked countries. Romania and Türkiye exchanged positions between the two methods, as Romania ranked sixth in SAW but seventh in TOPSIS, while Türkiye ranked seventh in SAW but sixth in TOPSIS. A similar pattern occurred between Brazil and Vietnam, where Brazil ranked ninth in SAW but tenth in TOPSIS, while Vietnam moved from tenth in SAW to ninth in TOPSIS. These differences show that countries with close performance scores may shift positions when evaluated using different ranking mechanisms. SAW tends to favour countries with higher accumulated weighted scores, while TOPSIS gives more attention to the relative distance of each country from the ideal and non-ideal solutions. Therefore, small rank changes are expected when a country performs strongly in some indicators but less evenly across the full set of criteria. This supports the view that different MCDM methods may produce slightly different rankings because each method applies a different aggregation logic (Ciardiello & Genovese, 2023; Wang et al., 2024).

Overall, the results strengthen the view that international market attractiveness should be assessed through a multidimensional framework. A strong economic profile alone does not necessarily guarantee a higher ranking when other dimensions are weaker. India illustrates this condition, as its large economic scale and labour force did not automatically place it among the most attractive markets because its performance in other indicators was less competitive. In contrast, the United Arab Emirates and Poland achieved high positions because their attractiveness was supported by more balanced performance across income level, digital readiness, logistics capability, and institutional conditions.

These findings answer the research problem by showing that economic, technological, and institutional indicators can be integrated into a single decision-support framework to compare countries with different development profiles. The results also support previous studies stating that international market selection is a multidimensional decision problem that requires several criteria and structured decision-making methods (López-Cadavid et al., 2023; Rojas-Gualdrón et al., 2025). Therefore, international market selection should not rely only on GDP or other single economic indicators. Instead, it should combine several business-related indicators to provide a more transparent and objective basis for comparing emerging and developing markets.

CONCLUSION

This study assessed international market attractiveness using a hybrid decision-support framework that integrates the Analytic Hierarchy Process (AHP), Simple

Additive Weighting (SAW), and the Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS). The findings show that the economic dimension received the highest priority in the evaluation model, followed by the technological and institutional dimensions. Among the nine indicators, GDP obtained the highest global weight, indicating that market size remains an important factor in international market selection. However, the high weight of the ICT Index also shows that technological readiness plays an important role in assessing market attractiveness.

The ranking results generated by SAW and TOPSIS produced consistent outcomes. Both methods placed China in the first position, followed by the United Arab Emirates, Saudi Arabia, and Poland. This consistency indicates that the most attractive markets are not determined by economic strength alone, but by a broader combination of economic capacity, technological readiness, logistics performance, income level, and institutional conditions. Therefore, the proposed framework can support a more systematic, transparent, and multidimensional evaluation of emerging and developing markets. The findings also suggest that firms should avoid relying only on a single economic indicator when selecting international markets, since market attractiveness is shaped by several country-level business conditions.

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