CRAFTING A STRATEGIC PLAN FOR AUTOMOTIVE TIRE SUPPLIERS USING A HYBRID SWOT-AHP APPROACH: A CASE STUDY

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ABSTRACT

Strategic planning is vital for business success and sustainability and can improve decision-making by encouraging a systematic and objective approach based on data and facts. The use of analytical tools like analysis of Strengths, Weaknesses, Opportunities, and Threats (SWOT) and the Analytic Hierarchy Process (AHP) is crucial for businesses aiming for long-term success and sustainability. This research explores how combining these tools can enhance the credibility, accuracy, and reliability of strategic analysis frameworks intended for local tire suppliers in Jordan. A conceptual model was developed to rank SWOT factors using the AHP, improving the quality and reliability of results. Critical factors were identified through a survey of 70 respondents from the tire industry and were analyzed further with the AHP through interviews with managers. The findings show that combining SWOT and the AHP offers significant advantages for strategic, tactical, and operational planning. The study also integrates the TOWS matrix to translate prioritized SWOT factors into actionable strategic alternatives, offering a more comprehensive planning tool. This novel approach not only strengthens decision-making processes but also provides a more structured framework for automotive tire suppliers to navigate the competitive environment and align their strategies with their long-term vision and goals.

Keywords: SWOT; AHP; strategic plan; tire distribution industry

[1] With deep sorrow, we share that our colleague and co-author, Batool Alrifai, passed away unexpectedly before the publication of this work. She was a valued collaborator and former student, and her dedication, insight, and kindness left a lasting mark on this research. We publish this paper in her memory and in honor of her contribution.

1. Introduction

Strategic planning is a systematic approach that positions an organization to create value and maintain a sustainable competitive advantage by aligning with stakeholders (Richard, 2005). Medrano (2024) revisits and builds upon Kenneth R. Andrews's (1971) foundational ideas in *The Concept of Corporate Strategy*, particularly focusing on the alignment of internal resources with external environmental conditions. A strategic plan defines the company's direction, sets goals, and outlines competitive strategies (Thompson et al., 2020). To achieve these objectives and retain a competitive edge, businesses utilize analytical tools to capitalize on internal strengths and address weaknesses (Thompson et al., 2020).

It is common for organizations to evaluate strategic options and navigate complex decision-making by analyzing both internal and external factors (Thompson et al., 2020). The SWOT analysis is a widely used tool for this purpose, categorizing these factors into four key areas: strengths, weaknesses, opportunities, and threats. Strengths refer to a firm's internal resources and capabilities, opportunities involve market conditions that create demand for the firm's offerings, weaknesses highlight internal limitations, and threats encompass external conditions that may hinder the firm's ability to achieve its strategic objectives (Farrokhnia et al., 2023).

The Analytic Hierarchy Process (AHP) is a well-established multi-criteria decision-making (MCDM) method that provides a systematic approach to complex problem-solving. It allows decision-makers to consider multiple variables simultaneously, improving the objectivity and balance of strategic analysis. The AHP is frequently utilized for organizational decision-making. Integrating the SWOT and AHP methods can enhance the quantitative analysis and objectivity of the SWOT. This combined approach has been widely utilized across different fields and organizational hierarchies to address various organizational challenges (Dicinta, 2021). The SWOT–AHP method has been applied in strategic management and planning of rubber dam projects in Iran, concluding that the ST (Strengths-Threats) strategy predominates, with external threats mitigated using organizational strengths (Ghorbani & Hamidifar, 2023).

Despite the popularity of the SWOT and AHP methods individually, limited research has examined how their integration can be utilized to improve the credibility and reliability of strategy planning, especially in industries facing intense competition and market volatility. This study addresses this gap by exploring the combination of the AHP, SWOT, and TOWS to enhance strategic analysis frameworks tailored specifically to local tire suppliers in Jordan. In addition to integrating the SWOT, AHP, and TOWS methods, the study applies an Initiative Attractiveness Evaluation to assess and rank the feasibility of proposed strategic initiatives, ensuring practical alignment with organizational priorities.

The novelty of this study lies in applying this integrated approach, SWOT-AHP-TOWS, for the first time within Jordan's tire industry, a sector characterized by high competition, brand-driven consumer preferences, and rapidly evolving external conditions such as

global shifts, technological advancements, and ethical trading practices. Previous models either focused on single-method tools or failed to tailor factor selection to the specific challenges of this sector. The goal of this article is to improve the credibility, accuracy, and reliability of strategic planning processes in the local tire distribution industry in Jordan by integrating the SWOT, AHP, and TOWS frameworks.

This study addresses the following research questions:

1. How can the AHP be effectively integrated with SWOT to prioritize strategic factors for automotive tire suppliers?
2. What internal and external factors most critically influence strategic planning in Jordan's tire distribution sector?
3. How can the TOWS matrix be applied to transform prioritized SWOT elements into actionable strategies?

This study explores how the AHP can be effectively integrated with a SWOT analysis to prioritize strategic factors for tire suppliers. It investigates the key internal and external factors that most significantly impact strategic planning in Jordan's tire distribution sector. Additionally, it examines how the TOWS matrix can be used to convert the prioritized SWOT elements into actionable strategies.

2. Literature review

Strategic planning is defined as a systematic process through which organizations define their goals and develop the necessary procedures and operations to achieve them (NetSuite, 2024). Strategic planning is capable of enhancing company performance, as is evidenced by its growing adoption across sectors for improved results (Muhsin et al., 2020). Mushin et al. (2020) further asserted that strategy is a transition from known settings to new challenges, emphasizing the need for strategic adaptation to environmental changes, such as technological advancements and market shifts. Strategic planning's role in achieving profitability and growth through the alignment of objectives and resources has been emphasized (Yangailo, 2024). Moreover, the strategy has been outlined as a continuous process involving vision development, objective setting, strategy crafting, execution, and performance monitoring (Gallo, 2023).

SWOT analysis is widely used by business professionals, marketing scholars, and students due to its straightforward approach (Puyt et al., 2023). It often serves as the initial step in strategic planning, allowing for quick construction and benefiting from diverse viewpoints as part of a brainstorming exercise (Nulab, 2010). This tool helps examine organizational and industry factors that can positively or negatively affect the business; organizations can anticipate short-term and long-term impacts. This proactive approach allows organizations to readily respond to changes, thereby aiding in the development of strategic paths that align with both internal capabilities and external opportunities (SafetyCulture, 2023).

Environmental analysis, including macro-environmental factors summarized by PESTEL

(Political, Economic, Sociocultural, Technological, Environmental, and Legal) and micro-environmental factors represented by Porter's five forces (Suppliers, Rivals, New Entrants, Buyers, Substitute Products, and internal resources) is crucial for strategic management (Rashid, 2023).

SWOT factors of various high-end tire brands addressed in the literature were examined to leverage the insights from leading tire manufacturers and distributors. This approach was used to identify the most relevant factors, which were then incorporated into the SWOT questionnaire used in this study. These factors are summarized in Table 1.

Table 1
Class-A tire manufacturers' SWOT analyses

Brand	Strengths	Weaknesses	Opportunities	Threats	Reference
Michelin	Premium brand reputation	Premium pricing	Technological advancements	Economic downturns	(Shelke, 2023)
	Innovation and technology	Competition	Sustainable tires	Price competition	
	Diverse product range	Dependence on the automotive industry	Emerging markets	Regulatory changes	
	Global presence	Raw material costs	Digital transformation	Consumer shifts	
	Sustainability initiatives	Supply chain complexity	Mobility solutions	Supply chain disruptions	
Goodyear	Strong brand portfolio	Below industry average profitability	New market openings	Competitors' new technologies	(Zubek et al., 2021; Fern Fort University, n.d.).
	Strong distribution network	Weak demand forecasting	High core competencies	Skilled workforce shortage	
	Performance in new markets	Integration challenges	Low transportation costs	Changing consumer behavior	
	Skilled workforce	Below R&D investments	New technologies	Product imitation	
	Successful mergers & acquisitions	Unclear positioning	Online customer acquisition	New environmental regulations	

Brand	Strengths	Weaknesses	Opportunities	Threats	Reference
	Strong dealer community		Consumer behavior trends		
	Strong free cash flow		Increased spending		
Yokohama	Strong product portfolio	Stiff competition	Growth in emerging markets (India, China, Brazil)	National and international competition	(Mba Skool, n.d.)
	Strategic agreements and alliances	Low global market penetration	Eco-friendly branding	Mature Japanese economy	
	Strong R&D facility			Government regulations (export/import duties)	
	Eco-friendly perception			Alternative transportation means	
	Effective branding			Exchange rate fluctuations	
Linglong	Market leadership	High supply chain and logistics costs	Economic expansion	Market saturation	(Shandong Linglong Tyre, 2018).
	Talent management	Declining market share	Shift towards high-end products	Intense competition	
	Strong brand recognition	Declining revenue per unit	Technological advancements	Skilled human resources shortage	
	Successful new product mix	Local monopolies	Changing customer preferences	Product commoditization	
	Wide geographic presence				

While the SWOT framework is praised for its simplicity and practicality, it may lead to strategic errors if used naively (SafetyCulture, 2023). To address these limitations, combining SWOT with the AHP can provide a more detailed analysis and enhance strategic decision-making. The AHP, a method within MCDM, allows for the quantitative assessment of these factors (Liu, 2024). MCDM techniques offer effective solutions for addressing difficult challenges and are employed by experts in complex decision-making scenarios (Khan & Ali, 2020). MCDM represents a versatile analysis encompassing both

qualitative and quantitative aspects, aiding in the assessment of intricate problems and facilitating conclusive decision-making (Sahoo & Goswami, 2023). Additionally, MCDM spans both the engineering and managerial domains, representing a dynamic and intricate tool within the realm of decision analysis scenarios (Kumar & Goswami, 2023). In view of this, the AHP is considered one of the main MCDM techniques that has some industrial engineering applications in flexible manufacturing systems (Singh et al., 2023), in the evaluation of technology investment decisions (Palma et al., 2024), layout design (Ince & Güler, 2024), and also in other engineering problems such as assessment of offshore wind turbines in (Alkhalidi et al., 2023).

This article considers the integration of the SWOT and AHP methods, examining their utilization in ranking the SWOT factors in the tire industry. This approach also provides mechanisms for improving consistency when comparisons are inconsistent, making it a robust tool for intricate decision problems (Senol & Yildiz, 2024; Saaty, 2008).

The SWOT method serves as a tool for identifying and categorizing factors that influence an organization, encompassing both internal and external environments (Kaymaz, 2022). While these factors are often based on subjective opinions, the AHP relies on straightforward analytical functions to convert judgments into ratios. It is particularly valuable because it converts qualitative insights from the SWOT analysis into a structured analytical method to convert these judgments into quantifiable ratios (Kaymaz & Kaymaz, 2023). While traditional SWOT analysis identifies internal and external factors qualitatively, it lacks a mechanism to prioritize these factors quantitatively. By incorporating the AHP, the study assigns weights to each SWOT factor through pairwise comparisons, enhancing the measurability and reliability of the analysis (Nguyen & Truong, 2022).

Integrating SWOT with the AHP enhances the strategic planning process by addressing the limitations of a SWOT analysis alone. This combined approach has been widely used across various fields to address complex challenges that involve both qualitative and quantitative criteria (Ghorbani et al., 2022).

SWOT analysis supports strategic planning by offering insights into addressing organizational challenges. The TOWS matrix extends this framework by aligning internal and external factors to define a company's strategic position. Constructing this matrix requires sound judgment, especially in matching these factors effectively. It includes four strategic types: SO, WO, ST, and WT. SO strategies use internal strengths to seize external opportunities, while WO, ST, and WT strategies are often adopted first to pave the way for SO implementation. In the face of major threats, organizations may focus on opportunities to lessen their impact (Hattangadi, 2023).

After the SWOT-AHP analysis is complete and factors are identified, the obtained results will be used to develop strategies. The optimal strategic alignment occurs when the internal environment harmonizes with the external environment (Wardhani & Dini, 2020). The TOWS matrix is a framework to create, compare, decide and access business strategies.

The TOWS matrix, as illustrated in Table 2, comprises four strategic categories and guides companies in implementing strategies that capitalize on strengths and mitigate threats (Boardmix, 2023).

Table 2
TOWS matrix

	Strength (S) Internal strength factors	Weakness (W) Internal weakness factors
Opportunity (O) External opportunity factors	**SO STRATEGY** Use power to take advantage of opportunities	**WO STRATEGY** Overcome weaknesses by taking advantage of opportunities
Threat (T) External threat factors	**ST STRATEGY** Use power to avoid threats	**WT STRATEGY** Minimize weaknesses and avoid threats

Source: Weihrich (1982)

While the integration of the SWOT and AHP methods is established in the literature, this study advances the methodology by embedding it within a comprehensive strategic management process tailored for a specific, volatile industry. Unlike traditional applications that often conclude with factor prioritization, our approach explicitly links the AHP-weighted SWOT factors to the TOWS matrix for actionable strategy formulation. Furthermore, we introduce a subsequent Initiative Attractiveness Evaluation to assess the feasibility and impact of the proposed strategies. This end-to-end framework—from quantitative prioritization to evaluated strategic initiatives—addresses a key gap in standard hybrid models by ensuring the analytical results are directly translated into a practical, prioritized action plan for decision-makers.

3. Methodology

This study combines both qualitative and quantitative methods to analyze SWOT factors within the automotive tire industry. Initially, a survey was conducted to gather participants' perspectives on SWOT factors. Following the survey, interviews with senior management and key personnel in the tire industry were conducted to facilitate the AHP analysis. The AHP was employed to structure the decision-making process by building a hierarchical framework consisting of objectives, criteria, sub-criteria, and alternatives. Pairwise comparisons were conducted to evaluate the relative importance of factors, and weights were calculated using Saaty's eigenvalue method (Saaty, 1977). In this phase, priorities and weights were assigned to factors within each SWOT category. The study used the SWOT–AHP–TOWS hybrid model to systematically identify, assess, and analyze

strengths, weaknesses, opportunities, and threats. Through pairwise comparisons of selected SWOT factors using the AHP technique, the approach enhances the rigor and systematic evaluation, optimizing the SWOT analysis by leveraging the capabilities of a MCDM tool like the AHP. Additionally, the TOWS matrix and Industry Attractiveness Evaluation matrix were utilized to identify feasible strategies and prioritize associated initiatives accordingly.

Additionally, a novel method was proposed for identifying potential strategies by evaluating their importance and alignment with the organization's strategic goals, which include reaching more customers, expanding into new markets, and increasing market share.

3.1 Study population

This study focused on a local tire distributor in Jordan, International Trading and Engineering Equipment Enterprise (ITEEE). The target population includes all experts, employees, and consumers involved in the tire distribution industry in Jordan. However, since it is not feasible to study every individual within this population, a representative sample consisting of local tire distributor experts, actively employed individuals within this SME, and a selection of its consumers was considered. This approach ensured that the study captured relevant insights from key stakeholders while maintaining practicality.

Two non-probability sampling techniques were adapted in this study. First, the convenience sampling technique was used in the SWOT survey where the responses were collected from individuals who are accessible and willing to respond to the SWOT online questionnaire. Second, the judgmental sampling technique was adapted in two ways. First, industry experts and the local tire industry SME added their contributions to validate the selected nominated factors from the SWOT survey, and second, the technique was considered in acquiring the AHP matrix inputs in order to calculate the weight of each SWOT categories' factors.

A total of 104 questionnaires were distributed via email to gather insights on key SWOT factors critical to the tire industry, of which 70 were fully completed, yielding a response rate of 67.3%. Respondents included industry experts and key personnel from the local distributor under investigation in Jordan.

In this study, the term "key employees" refers to staff members from the tire distribution companies who hold roles directly linked to strategic operations, such as sales, logistics, procurement, and customer service management. These individuals were selected because they possess operational knowledge and practical insights into the organization's internal strengths and weaknesses, as well as its interactions with the external environment. Previous studies emphasize the importance of involving both managers and operational employees in strategic decision-making processes, as their combined expertise improves the accuracy and applicability of results (Kaymaz & Kaymaz, 2023; Eslamipoor & Sepehriar, 2014; Maxwell, 1996).

3.2 Survey design and factor selection

The survey was designed by first extracting critical factors from the literature on major tire manufacturers, as summarized in Table 1. Through consultations with industry experts, an initial list of 11 strengths, 6 weaknesses, 7 opportunities, and 8 threats was compiled. However, incorporating all these factors into the full AHP analysis was deemed methodologically problematic, as it would exponentially increase the number of pairwise comparisons. This would raise the risk of exceeding the acceptable consistency ratio (CR) threshold of 0.1, thereby compromising the reliability of the results. Therefore, a two-stage filtering process was employed: the survey was used to identify a shortlist of high-priority factors, which were then refined with final expert input to create a manageable set for the robust application of the AHP.

Participants were asked to rate factors within each SWOT category using a Likert scale, and responses were collected over a period of three to four weeks. The weighted average was then calculated for each factor. This calculation reflects the collective input of the respondents by summing the products of each Likert scale value (1-5) and its response frequency, then dividing by the total number of responses. In addition to rating existing factors, participants also suggested additional factors for consideration. The finalized set of factors was then prioritized through the AHP analysis, with input from 10 industry experts, including senior management and key personnel, who completed the AHP matrices to establish priorities. To ensure validity, the survey questionnaire was reviewed and verified in advance by two academic professors and three industry experts to ensure that it was comprehensive and complete.

3.3 Analytic Hierarchy Process (AHP)

After selecting the final factors, separate pairwise comparison matrices (PCMs) were created for each SWOT category. Ten key employees and industry experts provided their judgments using the Saaty scale (Saaty, 2008) to compare the relative importance of each factor within its category. The judgments provided by the experts were aggregated using the geometric mean method (GMM), which is the standard and recommended approach for combining individual pairwise comparisons in group AHP. The Saaty scale assigns numerical values to express the relative importance of one element over another:

- A value of 1 means both elements are equally important.
- Values of 3, 5, 7, and 9 indicate increasing levels of dominance or preference of one element over another, ranging from moderate (3), strong (5), very strong (7), to extreme importance (9).
- Even-numbered values (2, 4, 6, 8) serve as intermediate judgments, allowing for finer discrimination between levels.

This scale helps convert subjective assessments into a structured, quantifiable format, which can then be used to calculate priority weights and support more rational, transparent decision-making.

Once the matrices were populated, the data was processed through a sequence of calculations to derive priority weights and ensure consistency. This involved:

1. **Normalization**: Each column of the PCM was normalized, and the priority vector (eigenvector) was computed by averaging the values across each row.
2. **Consistency Check**: The consistency of the judgments was verified by calculating the principal eigenvalue (λ_{max}), Consistency Index (CI), and Consistency Ratio (CR). A CR threshold of 0.10 was used, following Saaty's standard, to ensure rational and acceptable consistency in the pairwise comparisons.
3. **Weight Calculation**: The priority vector represented the final weight (relative importance) of each factor. This rigorous process ensured the results were robust and suitable for strategic planning.

To ensure the logical reliability of the pairwise comparisons in the AHP, the CI and CR were calculated. The CI quantifies the degree of inconsistency in a pairwise comparison matrix by measuring the deviation of its maximum eigenvalue (λ_{max}) from that of a perfectly consistent matrix. A CI of zero indicates perfect consistency. However, some inconsistency is expected, especially with more factors. To interpret the CI, it is compared to a Random Index (RI), an average CI derived from randomly generated matrices of the same size. The ratio of the two is the CR.

If the CR exceeds the established threshold which is 0.10 (Saaty, 1977), it raises doubts about the reliability of the judgments. In such cases, the decision-maker revises the judgments until achieving a CR below 0.10.

CI and CR are calculated for each category as follows:

$$CI = (\lambda_{max} - n) / (n-1) \quad (1)$$

$$CR = CI / RI \quad (2)$$

Where the Principal Eigenvalue (λ_{max}) is the ratio of the Sum of Consistency Vector to the Number of Criteria, while the RI serves to evaluate the consistency of pairwise comparison matrices. RI increases with the size of the matrix, starting from 0.00 for sizes 1 and 2. For example, a matrix of size 4 has an RI of 0.90, and a matrix of size 5 has an RI of 1.12. These values are used in calculating the CR to determine the acceptability of judgments; higher values require more caution to ensure consistency in decision-making (Saaty, 1990). Microsoft Excel was used to conduct the AHP computations, including the construction of pairwise comparison matrices, derivation of priority vectors, and calculation of the CI and CR. The flexibility of Excel allowed for transparent step-by-step calculations aligned with Saaty's original AHP methodology. The computation of the CI, RI, and CR is detailed in Section 4.1.2.

3.4 Strategy formulation using TOWS matrix

A TOWS matrix was constructed using the top three prioritized factors from the AHP analysis as inputs. This matrix served as the foundational framework for generating strategic initiatives, following the SO, WO, ST, and WT matching technique. The objective of this process was to translate the analytical findings into actionable strategies to assist ITEEE in achieving its strategic objectives. The complete TOWS matrix, detailing the matched factors and their corresponding strategic initiatives, is presented in the Results section (Table 9).

3.5 Initiatives prioritization and attractiveness evaluation

Following the formulation of initiatives via the TOWS matrix, a prioritization analysis was conducted. This involved a two-stage evaluation. First, key management and experts assigned an importance weight to each initiative, reflecting its perceived strategic significance to the company. Second, each initiative was rated on a scale from 1 (least attractive) to 10 (most attractive) based on predefined criteria such as feasibility and potential impact considering factors like competition intensity, resource requirements, and cross-industry strategic alignment. Higher ratings were given to initiatives with strong strategic alignment and competitive potential, while those with significant challenges or high resource demands received lower ratings. The final weighted score for each initiative was calculated to determine its priority for implementation. The results of this attractiveness evaluation are presented in Table 10. Figures 1 and 2 present an overview of the methodological steps and the AHP hierarchy used for prioritizing the SWOT factors in this study.

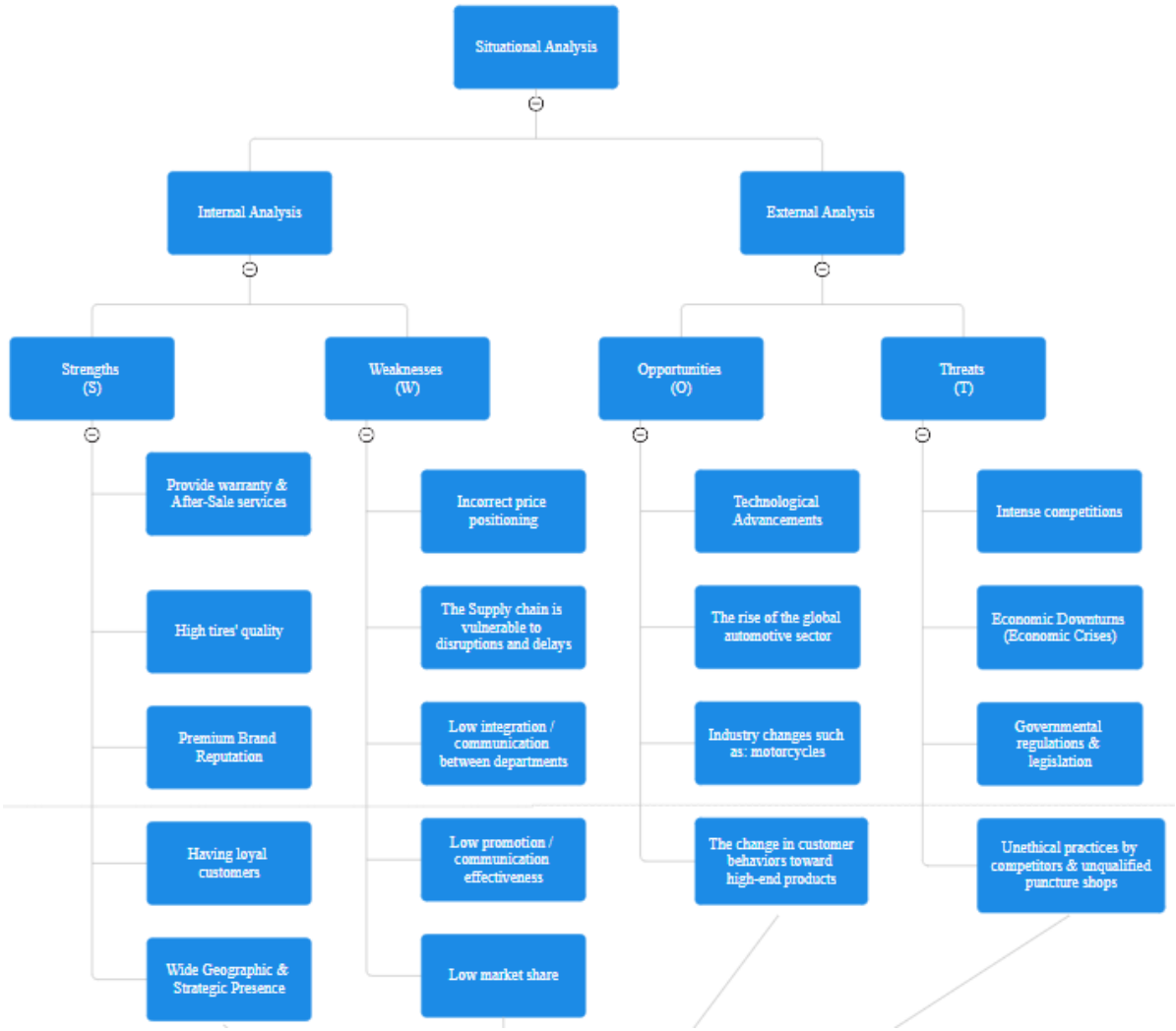

Figure 1 Methodological steps overview – SWOT model

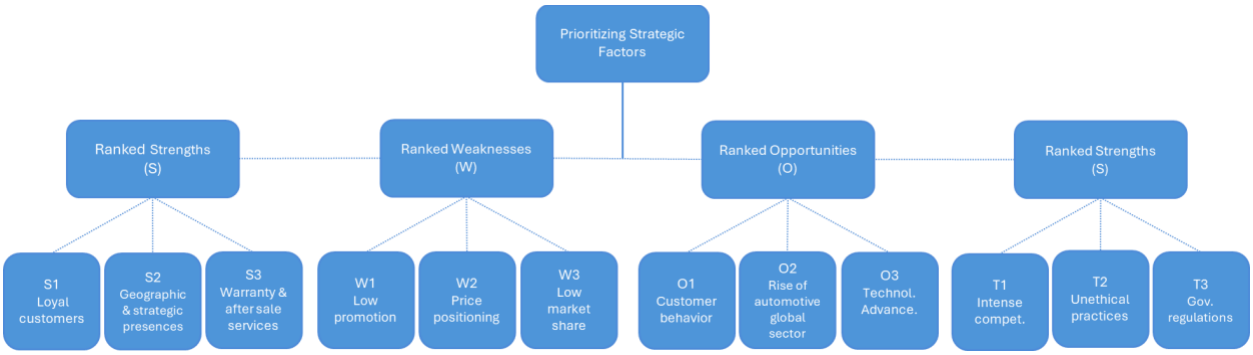

Figure 2 AHP hierarchy used for prioritization of the top weighted SWOT factors

4. Results and discussion

4.1 Results

Following the survey data collection, the top three factors from each SWOT category with the highest weighted averages were initially identified for the AHP analysis. However, as all factors received relatively high scores, a limitation of the Likert scale's discriminating power, local experts were consulted to enhance the contextual accuracy of the selection. Based on their feedback, one to two additional factors were incorporated into the final set. This process yielded the definitive list of factors used in the subsequent AHP pairwise comparison matrices. The weighted averages for selected factors are presented in Table 3.

Table 3
SWOT factors weighted averages

Strength factors	Premium brand reputation	Wide geographic & strategic presence	High quality of tires	Having loyal customers	Provide warranty & After-sale services
Weighted Avg.	4.471	3.971	4.543	3.900	4.557
Weakness factors	Incorrect price positioning	Low promotion/ communication effectiveness	Low market share	Low integration/ communication between depts	Supply chain is vulnerable to disruptions and delays
Weighted Avg.	4.286	3.743	3.514	3.829	4.029

Opportunity factors	Technological advancements	Rise of the global auto sector	Change in customer behavior toward high-end products	Industry changes such as: motorcycles
Weighted Avg.	4.186	4.071	3.957	4.014

Threat factors	Economic downturns	Intense competitions	Governmental regulations & legislation	Unethical practices by competitors & unqualified puncture shops
Weighted Avg.	4.329	4.371	4.243	3.929

After identification of the designated factors for the AHP analysis, comparison matrices were constructed for each SWOT category (strengths, weaknesses, opportunities, and threats). The corresponding pairwise comparison scores for these categories are reported in Tables 4–7. Note that the "Sum" row is presented to confirm the completeness of each pairwise comparison matrix and is used as part of the standard AHP computation of priority vectors and consistency ratios.

Table 4
Strengths Pairwise Comparison Matrix

Strengths	Provide warranty & After-sale service	High quality of tires	Premium brand reputation	Having loyal customers	Wide geographic & strategic presence
Provide warranty & After-sale services	1.000	2.395	2.189	0.155	0.230
High quality of tires	0.418	1.000	0.399	0.162	0.212
Premium brand reputation	0.457	2.505	1.000	0.168	0.270
Having loyal customers	6.440	6.190	5.963	1.000	2.553
Wide geographic & strategic presence	4.354	4.715	3.699	0.392	1.000
Sum	12.669	16.805	13.249	1.876	4.265

Table 5
Weaknesses Pairwise Comparison Matrix

Weaknesses	Incorrect price positioning	SC is vulnerable to disruptions	Low integration/ communication	Low promotion/ communication	Low market share
Incorrect price positioning	1.000	3.656	5.084	0.281	2.922
SC is vulnerable to disruption	0.274	1.000	2.092	0.175	0.303
Low integration/ communication	0.197	0.478	1.000	0.178	0.214
Low promotion/ communication	3.561	5.700	5.603	1.000	2.587
Low market share	0.342	3.302	4.681	0.387	1.000
Sum	5.374	14.136	18.460	2.021	7.026

Table 6
Opportunities Pairwise Comparison Matrix

Opportunities	Technological advancements	Rise of the global automotive sector	Industry changes	Change in customer behaviors
Technological advancements	1.000	0.457	5.491	0.377
Rise of the global automotive sector	2.190	1.000	5.634	0.393
Industry changes	0.182	0.178	1.000	0.130
Change in customer behaviors	2.652	3.297	7.721	1.000
Sum	6.118	4.987	20.064	1.830

Table 7
Threats Pairwise Comparison Matrix

Threats	Intense competitions	Economic downturns	Governmental regulations	Unethical practices
Intense competitions	1.000	5.397	4.278	2.000
Economic downturns	0.185	1.000	0.303	0.199
Governmental regulations	0.234	3.302	1.000	0.234
Unethical practices	0.500	5.018	4.278	1.000
Sum	1.919	14.717	9.859	3.433

Following the described methodology, the AHP analysis successfully generated priority weights for all factors within the four SWOT categories. The resulting priority vectors, which rank the factors in descending order of importance, are presented in Table 8.

Table 8 also details the principal eigenvalue (λ_{max}), CI, and CR for each SWOT category matrix, providing a complete summary of the AHP results. In conclusion, Table 8 shows that the consistency ratios for all factors are below the 0.1 threshold, indicating that the judgments made during the pairwise comparisons are reasonably consistent and within acceptable limits. This suggests that the decision-making process is reliable and that the priorities established through the AHP analysis are valid for use in strategic planning.

Table 8
SWOT factors and their eigen-vector, eigenvalue, and consistency vector

SWOT Category	**SWOT Factors Ranks**	**SWOT Factors**	**Eigen (Priority) Vector**	**λ_{max}**	**CI**	**RI**	**CR**
Strengths (n=5)	S1	Having loyal customers	0.492	5.250	0.063	1.12	0.056
	S2	Wide geographic & strategic presence	0.269				
	S3	Provide warranty & After-Sale services	0.105				
	S4	Premium brand reputation	0.083				
	S5	High quality of tires	0.052				

SWOT Category	SWOT Factors Ranks	SWOT Factors	Eigen (Priority) Vector	λ_{max}	CI	RI	CR
Weaknesses (n=5)	W1	Low promotion/ communication effectiveness	0.446	5.315	0.079	1.12	0.070
	W2	Incorrect price positioning	0.255				
	W3	Low market share	0.177				
	W4	Supply chain is vulnerable to disruptions and delays	0.073				
	W5	Low integration/ communication between departments	0.049				
Opportunities (n=4)	O1	Change in customer behaviors toward high-end products	0.506	4.12	0.04	0.9	0.045
	O2	Rise of the global automotive sector	0.264				
	O3	Technological advancements	0.184				
	O4	Industry changes such as: motorcycles	0.046				
Threats (n=4)	T1	Intense competitions	0.476	4.187	0.062	0.9	0.069
	T2	Unethical practices by competitors & unqualified puncture shops	0.332				
	T3	Governmental regulations & legislation	0.129				
	T4	Economic downturns (Economic crises	0.063				

A TOWS matrix was developed, incorporating the top three weighted factors identified through an AHP analysis. Table 9 presents this matrix, outlining the derived strategies and the corresponding initiatives generated through the matching process.

Table 9
The TOWS matrix

	Strengths (S)	**Weaknesses (W)**
	(S1) Having loyal customers	(W1) Low promotion/communication effectiveness
	(S2) Wide geographic & strategic presence	(W2) Incorrect price positioning
	(S3) Provide warranty & After-sale services	(W3) Low market share
Opportunities (O)	**SO Strategies**	**WO Strategies**
(O1) Change in customer behaviors toward high-end products	(S1, O1) Build loyalty programs	(W2, O1) Organizing PR events and convening meetings with key customers, alongside utilizing marketing intelligence to gather market data
(O2) Rise of the global automotive sector	(S2, O2) Expansion into new markets & open a new strategic branches/stores	(W3, O2) Secure new dealership agreements
(O3) Technological advancements	(S3, O3) Take the advantage of the new technological advancements and correlate it with the warranty & after-sale services provision	(W1, O3) Utilizing innovative technology in conducting and launching the marketing campaigns
Threats (T)	**ST Strategies**	**WT Strategies**
(T1) Intense competitions	(S3, T1) Mitigates the adverse effects of price competition & soft lock-in the switching customers	(W1, T1) Fresh marketing initiatives and public relations efforts to overcome the rivals
(T2) Unethical practices by competitors & unqualified puncture shops	(S3, T2) Offering warranty and after-sales services reduces the likelihood of customers being swayed by unscrupulous practices	(W1, T2) Conduct awareness events & build strong communication channels among industry key players to overcome the unethical practices in the industry sector
(T3) Governmental regulations & legislation	(S2, T1) Expansion into new markets & opening new strategic branches/stores can reduce the rival's competition intensity.	

* T3: Government regulations and legislation were not incorporated into any of the previously outlined strategies, as this threat is international and beyond local control. Instead, efforts should focus on minimizing its impact on other initiatives.

Ultimately, a series of initiatives were extracted from the TOWS matrix. A basic analysis was developed to assess each strategy and its associated initiative by determining the weight of each initiative, reflecting its perceived significance to the company according to higher management and experts. Each initiative was then evaluated based on selected attractiveness criteria, using a rating scale from 1 to 10, where higher scores indicate greater strategic appeal. The importance value for each initiative was calculated by multiplying its assigned weight by its attractiveness rating, consistent with the TOWS-based Initiative Attractiveness Evaluation method. Table 10 presents the resulting importance scores, illustrating the attractiveness of these initiatives both within the broader Jordanian tire industry and for the specific case study examined in this research.

Based on the findings presented in Table 10, the three initiatives with the highest weighted scores were selected, prioritizing those with either a significant importance weight, a high attractiveness rating, or both. The chosen initiatives are listed below in order of their weighted scores:

1. Develop marketing campaigns, public relations efforts, loyalty programs, and sales promotions to strengthen customer relationships and reduce switching rates.

2. Secure new dealership agreements with reputable international tire manufacturers to expand brand offerings and cater to a wider customer base.

3. Implement a Customer Relationship Management (CRM) system with warranties and after-sale services to enhance customer trust, satisfaction, and brand reputation, fostering long-term relationships and reducing post-purchase dissonance.

Table 10
Evaluating initiative attractiveness

Initiatives	**Importance weight**	**Attractiveness rating**	**Weighted score**
Develop marketing campaigns and public relations coverage, establish loyalty programs, and offer sales promotions.	0.4	5	**2**
Expand to new markets & open new strategic branches.	0.05	2	0.1
Build Customer Relationship management system through providing warranties & after-sale services taking the advantage of technological advancement.	0.1	10	**1**
Organize PR events and hosting meetings with key customers, in addition to gaining insights into market trends, customer preferences, competitors' strategies, and industry dynamics.	0.1	6	0.6
Secure new dealership agreements with well-known global tire manufacturers.	0.2	8	**1.6**

Initiatives	Importance weight	Attractiveness rating	Weighted score
Organize awareness events and establishing robust communication networks between industry key players.	0.15	6	0.9
Total	**1**		

Note: Weighted score is computed by multiplying the Importance Weight by the Attractiveness Rating.

4.2 Discussion

This study successfully demonstrated the application of a hybrid SWOT–AHP–TOWS framework to formulate a strategic plan for a tire distribution company in Jordan. The findings confirm the utility of this integrated approach in transforming subjective strategic assessments into a quantifiable, prioritized decision-making model. This discussion interprets the results within the broader context of existing literature on SWOT–AHP–TOWS applications, highlighting the consistencies, unique contributions, and practical implications of this research.

4.2.1 TOWS matrix

The TOWS matrix, informed by the prioritized AHP-weighted factors, yielded strategies that are distinctly proactive and leverage the unique competitive dynamics of Jordan's tire market. The novelty of this approach lies in its quantitative prioritization, which moves beyond subjective brainstorming to provide empirical justification for why certain strategic directions (e.g., securing new dealership agreements over geographical expansion) should take precedence. For tire distribution firms in Jordan, this implies a critical strategic reorientation from competing primarily on price in a saturated market to building defensible competitive moats through superior customer relationship management and service quality. The findings compellingly suggest that sustainable advantage in this sector will be achieved not by merely expanding reach, but by deepening customer trust and leveraging strategic partnerships, thereby aligning internal capabilities with the most impactful external trends.

4.2.2 Alignment with and extension of existing SWOT–AHP–TOWS literature

The methodological approach of this study is consistent with a growing body of research that advocates for combining the qualitative SWOT analysis with the quantitative rigor of the AHP. Previous studies across various sectors—such as tourism (Hamarneh, 2017), agricultural development (Nguyen & Truong, 2022), and public project management (Ghorbani et al., 2022)—have established that the SWOT–AHP–TOWS hybrid model effectively mitigates the inherent subjectivity of traditional SWOT by assigning measurable weights to factors. This research reinforces that consensus. The calculated CR for all pairwise comparison matrices were well below the 0.10 threshold (as illustrated in Table 8), indicating that the judgments from industry experts were logically consistent and reliable, a cornerstone of a valid AHP application as defined by Saaty (2008).

However, this study extends previous work in several significant ways. While many previous applications focus on sector-wide or national-level analysis (e.g., Kaymaz et al.,

2022 on regional development), this research drills down to the micro-level of a single SME within a specific, highly competitive industry. This granular focus provides a more actionable strategic output tailored to the unique operational realities of the case company, ITEEE. The top-ranked factors "Having loyal customers" (S1), "Low promotion effectiveness" (W1), "Change in customer behavior" (O1), and "Intense competition" (T1) are not generic; they directly reflect the challenges and advantages of a regional distributor operating in a brand-saturated market. This specificity contrasts with broader studies and offers a template for other SMEs seeking to apply the SWOT–AHP–TOWS framework.

Furthermore, the sequential integration of the TOWS matrix and a formal Initiative Attractiveness Evaluation adds a critical, often missing, layer of strategic translation. Many SWOT-AHP studies conclude with the prioritized factors (e.g., Elsheikh & Azzeh, 2017). This research goes a step further by demonstrating how the weighted factors can be systematically converted into actionable strategies (SO, WO, ST, WT) and then evaluated based on their perceived importance and feasibility. The prioritization of initiatives like "Securing new dealership agreements" and "Developing targeted marketing campaigns" directly links the analytical results to executable business actions, addressing a common gap between strategic analysis and implementation.

5. Conclusion

The findings of this study yield novel insights specific to the tire distribution sector. The principal importance of "Having loyal customers" (S1) over factors like "Premium brand reputation" or "High tire quality" underscores the critical role of customer relationship management in a B2B and B2C distribution context where product differentiation can be low. This suggests that for distributors, strategic investments in loyalty and after-sales service (S3) may yield a higher return than efforts to solely compete on brand prestige, which is often controlled by the manufacturers. Similarly, the identification of "Low promotion/communication effectiveness" (W1) as the most critical weakness highlights a common operational blind spot in distribution businesses that may focus heavily on logistics over marketing. The AHP weighting provides empirical evidence to justify reallocating resources toward strategic marketing and communication efforts, a recommendation that emerged directly from the data-driven analysis rather than mere intuition.

Building on these findings, the primary practical implication of this study is the provision of a structured framework for strategic decision-making. By quantifying the strategic landscape, the SWOT–AHP–TOWS model helps neutralize organizational biases and builds consensus among management. For instance, the high weight assigned to "Intense competition" (T1) validates management's concerns and directs strategic attention toward initiatives that create a competitive advantage, such as leveraging warranty services (S3) to create a "soft lock-in" for customers. The successful application of this model in the Jordanian market also demonstrates its adaptability beyond global business contexts. It accounts for unique regional challenges, such as "Unethical practices by competitors" (T2), which might be less prevalent in more regulated markets. This confirms the framework's robustness and value for businesses operating in emerging or highly volatile economies.

It is important to acknowledge, however, that a limitation of this study is its focus on a restricted geographical area, which may limit the generalizability of its findings. This presents an opportunity for future research to consider more comprehensive studies by expanding the geographical scope and incorporating a broader set of criteria. Such efforts could provide a more holistic understanding of the factors influencing the tire industry and offer insights applicable to a wider range of markets and contexts.

To further build upon this work, future research could enhance the analytical rigor by integrating other MCDM methods. For example, using the ANP (Analytic Network Process) could account for the potential interdependencies between SWOT factors, which the AHP treats as independent. Alternatively, combining the SWOT–AHP–TOWS output with a Fuzzy Logic approach could better handle the inherent subjectivity and uncertainty in expert judgments, especially when assessing future opportunities and threats.

In conclusion, this research not only validates the SWOT–AHP–TOWS framework as a powerful tool for strategic planning but also advances its application by providing a complete, end-to-end process from factor identification to initiative prioritization. The findings offer valuable, context-specific insights for managers in the tire distribution industry and a replicable methodology for scholars and practitioners aiming to bridge the gap between strategic analysis and tangible business action.

REFERENCES

Alkhalidi, A., Kaylani, H., & Alawawdeh, N. (2023). Technology assessment of offshore wind turbines: Floating platforms–validated by case study. *Results in Engineering, 17*, 100831. https://doi.org/10.1016/j.rineng.2022.100831

Andrews, K. R. (1971). *The concept of corporate strategy*. Dow Jones-Irwin.

Boardmix. (2023). Decoding the TOWS matrix: A thorough guide. https://boardmix.com/review/tows-matrix/

Dicinta, M., Bawono, B., & Kristyanto, B. (2021). The application of SWOT-AHP combination in Small-Medium Enterprises (SMEs): A literature review 2010–2020. *International Journal of Mechanical Engineering Technologies and Applications*, *2*(1), 17–24. https://doi.org/10.21776/mechta.2021.002.01.3

Elsheikh, Y., & Azzeh, M. (2017). Prioritize e-government strategies using SWOT-ranked voting analysis technique: the case of Jordan. *International Journal of Computer Science and Network Security*, *17*(1), 1.

Eslamipoor, R., & Sepehriar, A. (2014). Firm relocation as a potential solution for environment improvement using a SWOT-AHP hybrid method. *Process Safety and Environmental Protection*, *92*(3), 269–276. https://doi.org/10.1016/j.psep.2013.02.003

Farrokhnia, M., Banihashem, S. K., Noroozi, O., & Wals, A. (2023). A SWOT analysis of ChatGPT: Implications for educational practice and research. *Innovations in Education and Teaching International*, 1-15. https://doi.org/10.1080/14703297.2023.2195846

Fern Fort University. (n.d.). Goodyear Tire & Rubber SWOT analysis/matrix. http://fernfortuniversity.com/term-papers/swot/1433/169-goodyear-tire---rubber.php. Retrieved (June, 08, 2024).

Gallo, M. C. (2023). Strategy 101: 5 phases of strategic planning. https://www.melaniecgallo.com/single-post/2015-2-26-business-strategy-101-the-5-phases-of-the-strategic-planning-process

Ghorbani, M. K., & Hamidifar, H. (2023). Strategic planning of rubber dams by the SWOT and SWOT-AHP methods in Iran. *International Journal of Hydrology Science and Technology*, *15*(2), 112–122. https://doi.org/10.1504/IJHST.2023.128718

Ghorbani, M. K., Hamidifar, H., Skoulikaris, C., & Nones, M. (2022). Concept-based integration of project management and strategic management of rubber dam projects using the SWOT–AHP method. *Sustainability, 14*(5), 2541. https://doi.org/10.3390/su14052541

Hamarneh, I. (2017). SWOT-AHP method in tourism management: A case of Jordan tourism. *Proceeding of the International Conference Aktuální problémy cestovního ruchu Topical Issues of Tourism*, Jihlava, Czech Republic.

Hattangadi, V. (2023). SWOT & TOWS are effective tools for strategic formulation. *European Economic Letters*, *13*(3), 977–981.

Ince, T., & Güler, M. (2024). Facility location selection and layout planning through AHP, PROMETHEE, and CORELAP methods in the furniture industry. *BioResources, 19*(3), 6478–6492. https://doi.org/10.15376/biores.19.3.6478-6509

Kaymaz, Ç. K., Birinci, S., & Kızılkan, Y. (2022). Sustainable development goals assessment of Erzurum province with SWOT-AHP analysis. *Environment, Development and Sustainability, 24*(3), 2986-3012. https://doi.org/10.1007/s10668-021-01584-w

Kaymaz, İ., & Kaymaz, S. (2023). An integrated SWOT-AHP approach for strategic decision-making in the energy sector. *Energy Strategy Reviews, 45*, 101234.

Khan, A. U., & Ali, Y. (2020). Analytical hierarchy process (AHP) and analytic network process methods and their applications: a twenty-year review from 2000-2019. *International Journal of the Analytic Hierarchy Process, 12*(3), 369–459.

Kumar, S., & Goswami, S. S. (2023). A comprehensive review of multiple criteria decision-making (MCDM) methods: Advancements, applications, and future directions. *Decision Making Advances, 1*(1), 25–48. https://doi.org/10.31181/dma1120237

Liu, Y. (2024). A strategic decision-making model combining SWOT analysis with AHP method. *Proceedings of the 2024 2nd International Conference on Finance, Trade and Business Management (FTBM 2024)*, 304, 125–132. https://doi.org/10.2991/978-94-6463-546-1_25

Maxwell, J. A. (1996). *Qualitative research design: An interactive approach*. Sage.

Mba Skool. (n.d.). Yokohama SWOT Analysis. https://www.mbaskool.com/brandguide/automobiles/1905-yokohama-tire-corporation.html. Retrieved (June, 08, 2024).

Medrano, F. (2024). Strategic alignment: Integrating goals, resources, and actions. *Journal of Research in International Business and Management, 11*(1), 008

Muhsin, H. H., Mandere, E. N., & Onyango, R. O. (2020). Effect of strategic planning practices on performance of state corporations in Kenya: A case of Agricultural Finance Corporation. *The Strategic Journal of Business & Change Management, 7*(3), 789–808. https://doi.org/10.61426/sjbcm.v7i3.1708

NetSuite. (2024). Strategic planning: What is it & why is it important? NetSuite. https://www.netsuite.com/portal/resource/articles/financial-management/strategic-planning.shtml

Nguyen, T., & Truong, C. (2022). Integral SWOT-AHP-TOWS model for strategic agricultural development in the context of drought: A case study in Ninh Thuan, Vietnam. *International Journal of the Analytic Hierarchy Process, 14*(1), 1–30. https://doi.org/10.13033/ijahp.v14i1.890

Nulab. (2022). Using a SWOT analysis to develop core business strategies. https://nulab.com/learn/strategy-and-planning/using-a-swot-analysis-to-develop-core-business-strategies/

Palma, P., Bianco, R., & Salomon, V. (2024). Bibliometric study on AHP and investment decisions in Industry 4.0. *International Symposium on the Analytic Hierarchy Process*. https://doi.org/10.13033/isahp.y2024.016

Puyt, R. W., Lie, F. B., & Wilderom, C. P. (2023). The origins of SWOT analysis. *Long Range Planning, 56*(3), 102304. https://doi.org/10.1016/j.lrp.2023.102304

Rai, N., & Thapa, B. (2015). A study on purposive sampling method in research. *Kathmandu: Kathmandu School of Law*, *5*(1), 8–15.

Rashid, C. A. (2023). PESTEL analysis and Porter's five forces as marketing tools to evaluate Morrison's performance and strategy. *Journal of Global Social Sciences, 4*(15), 75–83. https://doi.org/10.58934/jgss.v4i15.187

Richard, A. L. (2005). *Managing the big picture in colleges and universities: From Tactics to strategy.* Greenwood Publishing. https://doi.org/10.5771/9781461733980

Saaty, T. L. (1977). A scaling method for priorities in hierarchical structures. *Journal of Mathematical Psychology, 15*(3), 234–281. https://doi.org/10.1016/0022-2496(77)90033-5

Saaty, T. L. (1990). An exposition of the AHP in reply to the paper "remarks on the analytic hierarchy process". *Management science, 36*(3), 259–268. https://doi.org/10.1287/mnsc.36.3.259

Saaty, T. L. (2008). Decision making with the analytic hierarchy process. *International Journal of Services Sciences, 1*(1), 83–98. https://doi.org/10.1504/ijssci.2008.017590

SafetyCulture. (2023). What is environmental analysis? SafetyCulture. https://safetyculture.com/topics/environmental-analysis/

Sahoo, S. K., & Goswami, S. S. (2023). A comprehensive review of multiple criteria decision-making (MCDM) methods: Advancements, applications, and future directions. *Decision Making Advances, 1*(1), 25–48. https://doi.org/10.31181/dma1120237

Senol, Y. E., & Yildiz, M. (2024). SWOT-AHP analysis of different colours of hydrogen for decarbonization of shipping. *International Journal of Hydrogen Energy, 49*(15), 12345–12360. https://doi.org/10.30897/ijegeo.1480096

Shandong Linglong Tyre (2018). *Shandong Linglong Tyre Annual Repor*t. https://embapro.com/frontpage/swotcoanalysis/3828-shandong-linglong-tyre.

Shelke, N. (2023, October 21). SWOT analysis of Michelin tyres. https://writohub.com/swot-analysis-of-michelin-tyres/.

Singh, R., Sharma, P., & Singhal, S. (2023). Application of AHP in the analysis of flexible manufacturing system. *Journal of Industrial and Intelligent Information, 4*(1), 15–20.

Thompson, A. A., Peteraf, M. A., Gamble, J. E., & Strickland III, A. J. (2020). *Crafting & executing strategy: Concepts and cases.* McGraw Hill. https://doi.org/10.12720/jiii.4.1.15-20

Wardhani, F. K., & Dini, A. (2020). Strategy formulation using SWOT analysis, space matrix and QSPM: a conceptual framework. *International Journal of Innovative Science and Research Technology, 5*(5), 1520-1527.

Weihrich, H. (1982). The TOWS matrix—a tool for situational analysis. *Long Range Planning, 15*(2), 54–66. https://doi.org/10.1016/0024-6301(82)90120-0

Yangailo, T. (2024). The role of strategic planning and productivity in predicting competitive advantage. *Trends in Business and Economics, 38*(2), 83–91. https://doi.org/10.16951/trendbusecon.1468564

Zubek, N., Morgan, A., Pekkola, A., Jancewicz, K., & Rovnak III, T. (2021). An analysis of how the Goodyear rubber and tire company should navigate the Covid-19 pandemic. *Williams Honors College, Honors Research Projects*, 1354. https://ideaexchange.uakron.edu/honors_research_projects/1354