



AD-minister

ISSN: 1692-0279

ad-minister@eafit.edu.co

Universidad EAFIT

Colombia

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COMMERCIALIZATION: A UNIFIED SWOT AND FUZZY AHP APPROACH

AD-minister, núm. 30, enero-junio, 2017, pp. 45-72

Universidad EAFIT
Medellín, Colombia

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COMPETITIVE STRATEGIES OF KNOWLEDGE AND INNOVATION COMMERCIALIZATION: A UNIFIED SWOT AND FUZZY AHP APPROACH

ESTRATEGIAS COMPETITIVAS DE CONOCIMIENTO Y COMERCIALIZACIÓN DE LA INNOVACIÓN: UN DOFA UNIFICADO Y UN ENFOQUE DE PROCESO DE ANÁLISIS JERÁRQUICO DIFUSO (FUZZY AHP)

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JEL: D83, M310

RECEIVED: 20-10-2016

MODIFIED: 1-12-2016

ACCEPTED: 17-12-2016

DOI: 10.17230/ad-minister.30.3

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ABSTRACT

Universities have shown a strong desire to commercialize researches and innovations. As a result, they are increasingly weaning themselves from public budgets. Commercialization has become the gateway for privatization, but the improper selection of commercialization strategies often results in the elimination of resources and time. The correct evaluation and ranking of strategies for the best resources is essential for the competitive performance of a university. The hybrid SWOT and Fuzzy AHP model adopted in this study provides a clear categorization of these university strategies. The first and relevant criteria as well as sub-criteria are identified using SWOT analysis. Fuzzy AHP tool is then used to evaluate and rank the internal and external factors that affect competition in Iranian universities. Based on the IE matrix, the growth and the process of building strategies are important priorities when considering commercializing. The results of this study revealed that academic startups, joint technology, joint research laboratories, strategic alliances, recruiting pundit and contracting with industry are the best strategies for Iranian universities.

KEYWORDS

Knowledge; Innovation; Commercialization; Strategy; FAHP approach; SWOT matrix.

RESUMEN

Las universidades han mostrado un fuerte deseo de comercializar investigaciones e innovación. Como resultado de esto, cada vez más buscan depender menos de los presupuestos públicos. La

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comercialización se ha convertido en la entrada a la privatización, sin embargo, la selección incorrecta de las estrategias de comercialización con frecuencia resulta en la eliminación de recursos y tiempo. La correcta evaluación y ranking de estrategias para los mejores recursos es esencial para el desempeño competitivo de una universidad. El híbrido entre el DOFA y el modelo proceso de análisis jerárquico difuso (Fuzzy AHP) adoptado en este estudio, provee una categorización clara de las estrategias de estas universidades. Los criterios principales y relevantes, al igual que los subcriterios, son identificados utilizando el análisis DOFA. La herramienta Fuzzy AHP se utiliza luego para evaluar y valorar los factores internos y externos que afectan la competencia en las universidades de Irán. Teniendo como base la matriz IE, el crecimiento y el proceso de construcción de las estrategias son prioridades cuando se tiene en cuenta la comercialización. Los resultados de este estudio revelan que los emprendimientos académicos, la tecnología conjunta, los laboratorios de investigación conjunta, las alianzas estratégicas, los expertos en reclutamiento y las contrataciones con la industria son las mejores estrategias para las universidades iraníes.

PALABRAS CLAVE

Conocimiento; innovación; comercialización; estrategia; enfoque AHP; matriz DOFA.

INTRODUCTION

Knowledge and innovation has a direct impact on an economy, especially in fast-growing new startup companies. Knowledge workers are the key towards gaining competitive advantage for innovative organizations (Gonzalez-Perez & Leonard, 2013). Factors such as globalization, along with other factors, have fundamentally changed the relationship between industry and universities.

This is part of a general trend towards the rapid development of knowledge markets. Currently, national policies are focused on the relation between industry players and university. The aim is to facilitate the improvement of entrepreneurship in fast-growing industries (The Organization for Economic Co-operation and Development (OECD), 2002). Hence, universities are considered as important actors in the knowledge-based economy. And the commercialization of research in universities, the innovations that originate from the research and development are considered as important factors for the economic stability of countries (Arora, 2003). Innovation often results in entrepreneurship as new ventures are created (Khajeheian, 2013) and by allowing firms to survive and compete in turbulent markets (Khajeheian, 2016a,b). Innovation also emanates from knowledge and creativity expected to be fostered in universities. The change in the universities' role from a knowledge producer to an entity that commercializes knowledge, has led to an increase in innovative activities in the past two decades. But despite the importance of innovation; little attention has been paid to the successful commercialization of university research in developing countries especially in Iran

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RESEARCH BACKGROUND

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Modelle des menschlichen Gedächtnisses (z.B. das Modell von Miller, 1956) sind in der Kognitionswissenschaft von zentraler Bedeutung. Sie helfen, die Prozesse der Informationsaufnahme, -speicherung und -abruf zu verstehen. Ein weiteres Beispiel ist das Modell der Informationsverarbeitung (z.B. das Modell von Atkinson und Shiffrin, 1968), das die verschiedenen Stadien der Informationsverarbeitung (Sensorische, Kurzzeit- und Langzeitgedächtnis) beschreibt. Diese Modelle sind nicht nur theoretisch, sondern auch praktisch relevant, da sie die Grundlage für die Entwicklung von Lern- und Gedächtnisstützen bilden.

the effect of the different types of knowledge on the commercialization of innovation (Kohli and Ghoshal, 1998). The different types of knowledge are categorized into three main types: explicit knowledge, tacit knowledge, and social knowledge. Explicit knowledge is knowledge that can be easily transferred and codified, while tacit knowledge is knowledge that is difficult to transfer and codify. Social knowledge is knowledge that is embedded in social networks and relationships. The different types of knowledge have different effects on the commercialization of innovation. Explicit knowledge has a positive effect on the commercialization of innovation, while tacit knowledge and social knowledge have a negative effect on the commercialization of innovation.

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the first of the two main types of commercialization is the *research with funding* model. In this model, the university receives funding from a third party (e.g., a government agency or a private company) to conduct research. The second type is the *copyright* model, in which the university retains the intellectual property rights to the research results and licenses them to a third party. The third type is the *employment of students* model, in which the university employs students to conduct research, and the results are commercialized through the students' own efforts. The fourth type is the *spin-off companies* model, in which the university creates a new company based on the research results. The fifth type is the *chance* model, in which the university commercializes research results through a series of coincidental events.

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Table 1: Formal and informal mechanisms for commercialization of academic research.

Mechanism	Definition
Research with funding	A contract in which the university receives funding for research.
The copyright	Legal rights to use the intellectual property of university.
Employment of students	Employing university students, especially those who work in sponsored projects.
Spin-off companies	The new concept which is based on academic research or university license.
Chance	Fortune

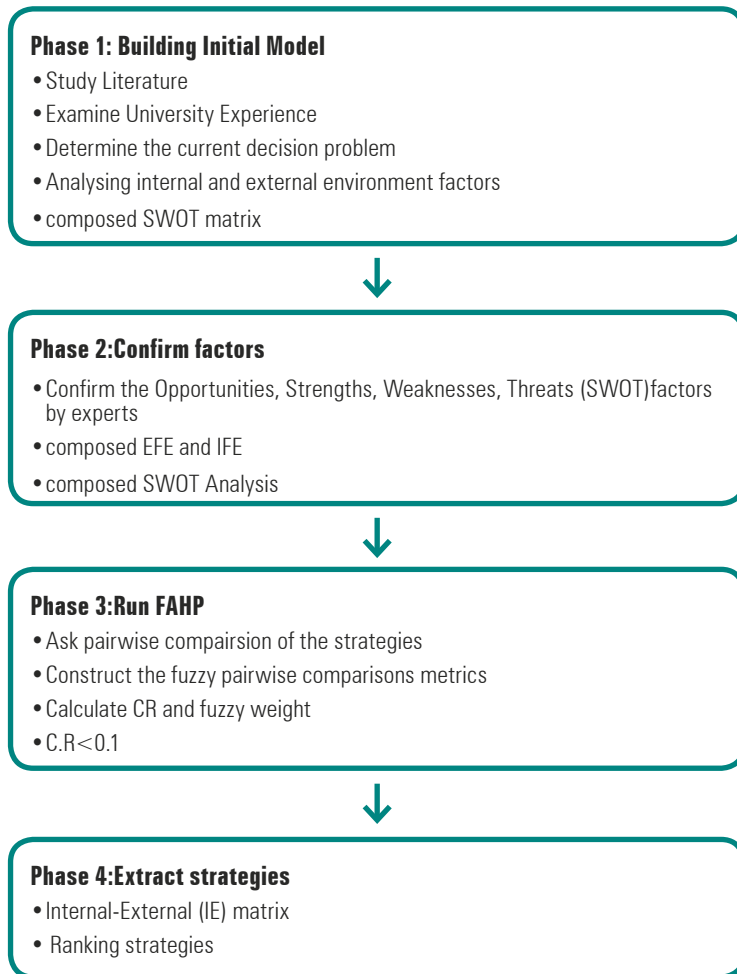
Source: Bercovitz and Feldmann, 2006.

Stöckert et al. (2018) have shown that the use of a unified SWOT and fuzzy AHP approach can help to identify the most competitive strategies for knowledge and innovation commercialization. The study found that the most competitive strategies are those that focus on the development of new products and services, the establishment of strategic alliances, and the implementation of a strong intellectual property strategy. The study also found that the most competitive strategies are those that are supported by a strong financial base and a strong management team. The study concludes that the use of a unified SWOT and fuzzy AHP approach can help to identify the most competitive strategies for knowledge and innovation commercialization.

RESEARCH METHOD

The research method used in this study is a combination of a unified SWOT and fuzzy AHP approach. The unified SWOT approach involves the identification of internal and external factors that affect the organization's performance. The fuzzy AHP approach involves the use of fuzzy logic to rank the factors and to identify the most competitive strategies. The study found that the most competitive strategies are those that focus on the development of new products and services, the establishment of strategic alliances, and the implementation of a strong intellectual property strategy. The study also found that the most competitive strategies are those that are supported by a strong financial base and a strong management team. The study concludes that the use of a unified SWOT and fuzzy AHP approach can help to identify the most competitive strategies for knowledge and innovation commercialization.

Figure 1: The phase of proposed methodologies.



FAHP Approach: The first step of the FAHP approach is to determine the fuzzy pairwise comparison matrix. The fuzzy pairwise comparison matrix is a square matrix of fuzzy numbers, where each element represents the relative importance of one strategy over another. The fuzzy numbers are typically represented by triangular fuzzy numbers, which are defined by three values: a minimum, a maximum, and a most likely value. The fuzzy pairwise comparison matrix is then used to calculate the fuzzy weights of the strategies. The fuzzy weights are calculated by dividing the sum of the fuzzy weights of the strategies by the number of strategies. The fuzzy weights are then used to rank the strategies. The strategy with the highest fuzzy weight is the most preferred strategy.

Secondly, the fuzzy weights are used to calculate the fuzzy weights of the strategies. The fuzzy weights are calculated by dividing the sum of the fuzzy weights of the strategies by the number of strategies. The fuzzy weights are then used to rank the strategies. The strategy with the highest fuzzy weight is the most preferred strategy.

Table 2. Linguistic terms and the corresponding triangular fuzzy numbers.

Saaty scale	Definition	Fuzzy triangular S
1	Equally important (Eq. Imp.)	(1, 1, 1)
3	Weakly important (W. Imp.)	(2, 3, 4)
5	Fairly important (F. Imp.)	(4, 5, 6)
7	Strongly important (S. Imp.)	(6, 7, 8)
9	Absolutely important (A. Imp.)	(9, 9, 9)
2	The intermittent values between two adjacent scales	(1, 2, 3)
4		(3, 4, 5)
6		(5, 6, 7)
8		(7, 8, 9)

Let \tilde{a}_{ij}^k be the fuzzy triangular number representing the comparison between the i th and j th criteria in the k th sub-level.

$$\tilde{A}^k = \begin{bmatrix} \tilde{a}_{11}^k & \tilde{a}_{12}^k & \dots & \tilde{a}_{1n}^k \\ \tilde{a}_{21}^k & \dots & \dots & \tilde{a}_{2n}^k \\ \dots & \dots & \dots & \dots \\ \tilde{a}_{n1}^k & \tilde{a}_{n2}^k & \dots & \tilde{a}_{nn}^k \end{bmatrix} \quad \text{Eq. (1)}$$

Step 3: Determine the fuzzy triangular number \tilde{a}_{ij}^k for each comparison between the i th and j th criteria in the k th sub-level.

$$\tilde{a}_{ij}^k = \frac{\sum_{k=1}^K \tilde{a}_{ij}^k}{K} \quad \text{Eq. (2)}$$

Step 4: Determine the fuzzy triangular number \tilde{a}_{ij} for each comparison between the i th and j th criteria in the main level.

$$\tilde{A} = \begin{bmatrix} \tilde{a}_{11} & \dots & \tilde{a}_{1n} \\ \vdots & \ddots & \vdots \\ \tilde{a}_{n1} & \dots & \tilde{a}_{nn} \end{bmatrix} \quad \text{Eq. (3)}$$

[illegible]

$$\tilde{r}_i = \left(\prod_{j=1}^n \tilde{d}_{ij} \right)^{1/n}, i=1, 2, \dots, n$$

[illegible]

Statement 5: i is the n th term of the r th

[illegible][illegible]

$$\begin{aligned} \tilde{w}_i &= \tilde{r}_i \otimes (\tilde{r}_1 \oplus \tilde{r}_2 \oplus \dots \oplus \tilde{r}_n)^{-1} \\ &= (lw_i, mw_i, uw_i) \end{aligned} \tag{eq:iti-15}$$

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$$M_i = \frac{lw_i, mw_i, uw_i}{3}$$

Step 7: M_i is not a \mathbb{Q} -algebra. \Rightarrow it is not a \mathbb{Q} -algebra.

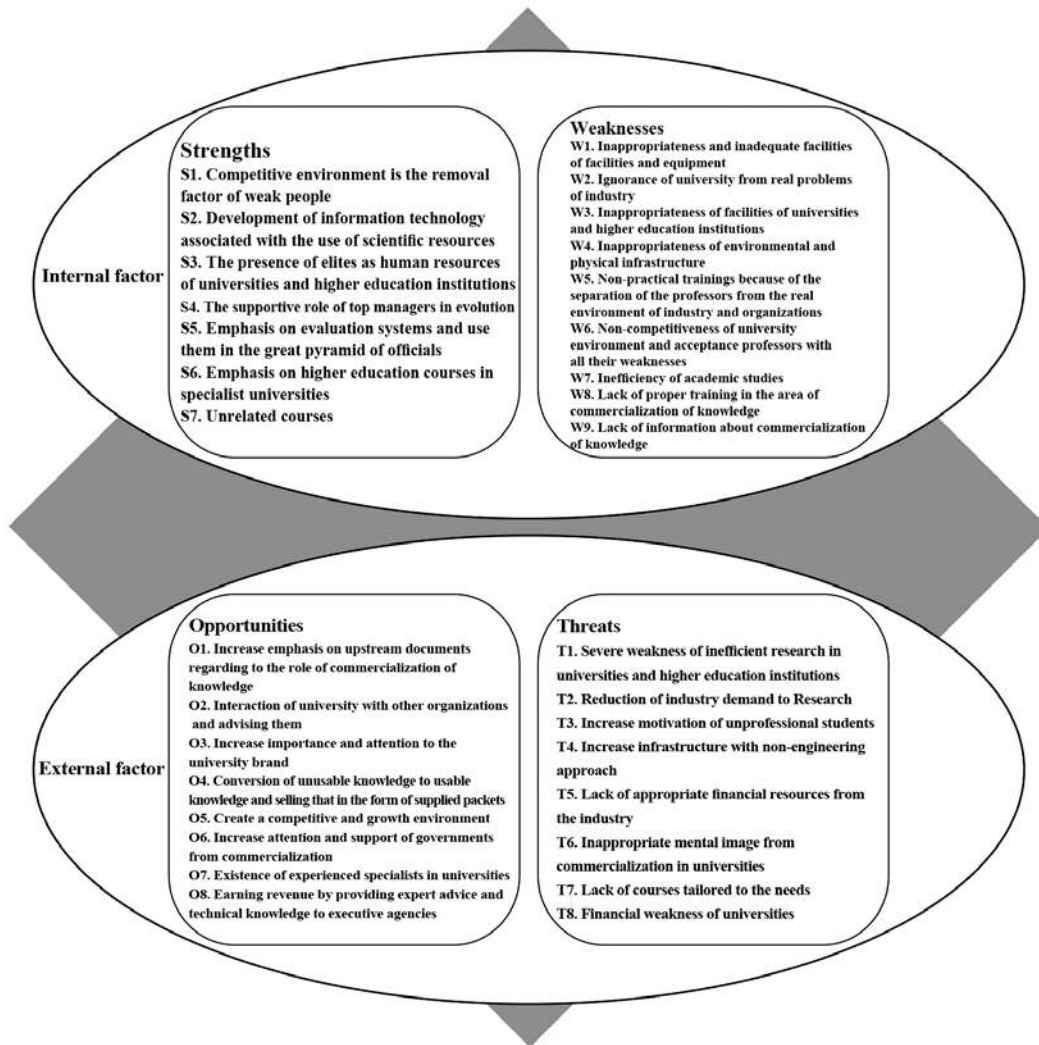
$$N_i = \frac{M_i}{\sum_{i=1}^n M_i}$$

[illegible]

FINDINGS:

the distribution of the data is not uniform, and the data is not independent and identically distributed (i.i.d.). The data is also not stationary, and the data is not Gaussian. The data is also not normally distributed, and the data is not symmetric. The data is also not unimodal, and the data is not smooth. The data is also not continuous, and the data is not discrete. The data is also not binary, and the data is not categorical. The data is also not numerical, and the data is not textual. The data is also not structured, and the data is not unstructured. The data is also not clean, and the data is not noisy. The data is also not complete, and the data is not missing. The data is also not accurate, and the data is not precise. The data is also not reliable, and the data is not trustworthy. The data is also not valid, and the data is not useful. The data is also not relevant, and the data is not important. The data is also not significant, and the data is not meaningful. The data is also not informative, and the data is not helpful. The data is also not interesting, and the data is not entertaining. The data is also not fun, and the data is not enjoyable. The data is also not exciting, and the data is not thrilling. The data is also not surprising, and the data is not unexpected. The data is also not novel, and the data is not original. The data is also not unique, and the data is not distinctive. The data is also not rare, and the data is not uncommon. The data is also not special, and the data is not extraordinary. The data is also not exceptional, and the data is not outstanding. The data is also not remarkable, and the data is not impressive. The data is also not noteworthy, and the data is not memorable. The data is also not significant, and the data is not important. The data is also not informative, and the data is not helpful. The data is also not interesting, and the data is not entertaining. The data is also not fun, and the data is not enjoyable. The data is also not exciting, and the data is not thrilling. The data is also not surprising, and the data is not unexpected. The data is also not novel, and the data is not original. The data is also not unique, and the data is not distinctive. The data is also not rare, and the data is not uncommon. The data is also not special, and the data is not extraordinary. The data is also not exceptional, and the data is not outstanding. The data is also not remarkable, and the data is not impressive. The data is also not noteworthy, and the data is not memorable.

Figure 2. Confirmed internal factors (Strengths, Weaknesses) and Confirmed external factors (Opportunities, Threats).



Source: Authors.

[illegible]

Opportunities (S) strategies that are based on the strengths of the university and the weaknesses of the industry sector. Weaknesses (W) strategies that are based on the strengths of the industry sector and the weaknesses of the university. Threats (T) strategies that are based on the strengths of the university and the weaknesses of the industry sector. Opportunities (S) strategies that are based on the strengths of the university and the weaknesses of the industry sector.

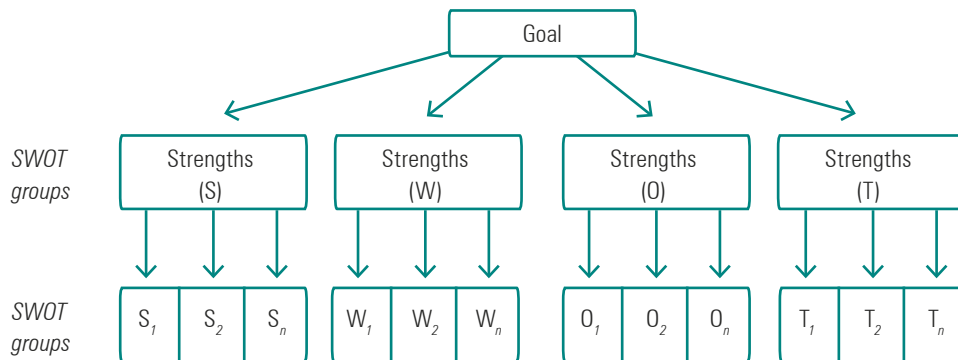
Table 3. Matrix of commercialization strategies of knowledge in universities.

	Strengths (S1, S2, S3, S4, S5, S6, S7)	Weaknesses (W1, W2, W3, W4, W5, W6, W7, W8, W9)
Opportunities (O1, O2, O3, O4, O5, O6, O7, O8)	<p>S0 strategies</p> <p>S01: corporate venture business</p> <p>S02: contracting with industry to conduct research</p> <p>S03: academic start-ups</p> <p>S04: strategic alliances</p> <p>S05: chance</p> <p>S06: recruiting skilled personnel for knowledge transfer in complex environments</p> <p>S07: joint technology development by formal co-operation agreements with the industry sector</p> <p>S08: joint research laboratories with industry sector</p>	<p>W0 strategies</p> <p>W01: counseling of university professors to industry sector</p> <p>W02: use of facilities</p> <p>W03: conducting conference</p> <p>W04: publishing research results in scientific journals</p> <p>W05: non-official or pre-official discussions</p> <p>W06: shareholding hold shares in a company</p> <p>W07: research joint meetings with industry and organizations</p> <p>W08: reading and attracting talented people to the local economy and cooperation with local industries through the provision of formal and technical supports</p> <p>W09: joint supervision of graduate students' dissertations and doctoral theses</p>
Threats (T1, T2, T3, T4, T5, T6, T7, T8)	<p>ST strategies</p> <p>ST1: research parks, science parks, incubators and technology parks</p> <p>ST2: Licensing</p> <p>ST3: patents</p> <p>ST4: Royalty</p> <p>ST5: employment of students</p> <p>ST6: advice to industrial enterprises by university professors</p> <p>ST7: Agreements to conduct R&D projects</p>	<p>WT strategies</p> <p>WT1: joint research and development agreements</p> <p>WT2: Partnership for transfer or commercialization of technology, participation in joint papers and consultation</p> <p>WT3: university interactions</p> <p>WT4: exchange programs</p> <p>WT5: extradition matters for government</p> <p>WT6: Technical Cooperation</p> <p>WT7: Interaction between university and industry</p> <p>WT8: The exchange of personnel and joint staff</p> <p>WT9: Research with sponsorship</p> <p>WT10: Mobility of professors between industry and university</p>

Source: Authors.

the SWOT matrix is the hierarchical structure of the SWOT matrix. The SWOT matrix is a tool used to analyze the internal and external factors of an organization. It is a 2x2 matrix with Strengths (S) and Weaknesses (W) on the left and Opportunities (O) and Threats (T) on the right. The SWOT matrix is used to identify the organization's strengths and weaknesses, and to identify the opportunities and threats that the organization faces. The SWOT matrix is a tool used to analyze the internal and external factors of an organization. It is a 2x2 matrix with Strengths (S) and Weaknesses (W) on the left and Opportunities (O) and Threats (T) on the right. The SWOT matrix is used to identify the organization's strengths and weaknesses, and to identify the opportunities and threats that the organization faces.

Figure 3. Hierarchical structure of the SWOT matrix.



the SWOT matrix is the hierarchical structure of the SWOT matrix. The SWOT matrix is a tool used to analyze the internal and external factors of an organization. It is a 2x2 matrix with Strengths (S) and Weaknesses (W) on the left and Opportunities (O) and Threats (T) on the right. The SWOT matrix is used to identify the organization's strengths and weaknesses, and to identify the opportunities and threats that the organization faces. The SWOT matrix is a tool used to analyze the internal and external factors of an organization. It is a 2x2 matrix with Strengths (S) and Weaknesses (W) on the left and Opportunities (O) and Threats (T) on the right. The SWOT matrix is used to identify the organization's strengths and weaknesses, and to identify the opportunities and threats that the organization faces.

Table 4. Comparison matrices for criteria.

Strengths Criteria	S1	S2	S3	S4	S5	S6	S7
S1	(1,1,1)	(3,4,4.5)	(0.222,0.25,0.333)	(3,3.5,4)	(1,2,2)	(0.036,0.038,0.04)	(0.084,0.111,0.117)
S2	(0.222,0.25,0.333)	(1,1,1)	(0.167,0.182,0.2)	(1,2,2)	(1,2,2)	(0.203,0.269,0.456)	(0.194,0.356,0.768)
S3	(3,4,4.5)	(5,5.5,6)	(1,1,1)	(5,5.5,6)	(3,4,4.5)	(0.203,0.269,0.282)	(0.235,0.353,0.765)
S4	(0.25,0.286,0.333)	(0.5,0.5,1)	(0.167,0.182,0.2)	(1,1,1)	(3,3.5,4)	(0.036,0.038,0.04)	(0.084,0.111,0.117)
S5	(0.5,0.5,1)	(0.5,0.5,1)	(0.222,0.25,0.333)	(0.25,0.286,0.333)	(1,1,1)	(0.834,2.532,3.176)	(0.345,0.765,0.547)
S6	(0.122,0.131,0.149)	(0.064,0.067,0.093)	(0.056,0.061,0.068)	(0.122,0.131,0.149)	(0.064,0.067,0.093)	(1,1,1)	(0.325,0.657,0.432)
S7	(0.111,0.143,0.2)	(0.111,0.143,0.2)	(0.346,0.766,0.467)	(0.278,0.322,0.35)	(0.203,0.269,0.282)	(0.268,0.311,0.338)	(1,1,1)

the 4th and 5th criteria, the total value of the criteria is 1.000. The 4th and 5th criteria are the most important criteria in the hierarchy. The 1st and 2nd criteria are the least important criteria in the hierarchy.

Table 5. Geometric means of fuzzy comparison values.

Strengths Criteria	Geometric means (\tilde{r}_i)
S1	(2.51, 2.71, 3.30)
S2	(2.65, 3.10, 3.29)
S3	(0.41, 0.54, 0.78)
S4	(0.36, 0.402, 0.439)
S5	(2.552, 2.959, 3.198)
S6	(0.42, 0.54, 0.45)
S7	(1.42, 1.24, 2.59)
Total	(10.332, 11.491, 14.47)
Reverse (power of -1)	(0.096, 0.087, 0.069)
Increasing Order	(0.069, 0.087, 0.096)

the 4th and 5th criteria, the total value of the criteria is 1.000. The 4th and 5th criteria are the most important criteria in the hierarchy. The 1st and 2nd criteria are the least important criteria in the hierarchy.

Table 6. Relative fuzzy weights of each criterion.

Strengths Criteria	Fuzzy weight (\tilde{w}_i)
S1	(0.178, 0.237, 0.316)
S2	(0.188, 0.269, 0.315)
S3	(0.029, 0.046, 0.074)
S4	(0.025, 0.034, 0.042)
S5	(0.181, 0.257, 0.307)
S6	(0.029, 0.046, 0.043)
S7	(0.100, 0.107, 0.24)

[illegible]

Table 7. Averaged and normalized relative weights of strengths criteria.

Strengths criteria	M _i	N _i
S1	0.243	0.237
S2	0.257	0.251
S3	0.050	0.048
S4	0.034	0.033
S5	0.248	0.242
S6	0.04	0.038
S7	0.152	0.148

Wavelengths 8 to 10 μ m are the most sensitive to the presence of water. SWIR is the most sensitive to the presence of water.

Table 8. Averaged and normalized relative weights of Weaknesses criteria.

Weaknesses criteria	M_i	N_i
W1	0.353	0.247
W2	0.32	0.224
W3	0.243	0.170
W4	0.124	0.086
W5	0.148	0.103
W6	0.044	0.030
W7	0.052	0.036
W8	0.067	0.046
W9	0.075	0.052

Table 9. Averaged and normalized relative weights of Opportunities criteria.

Opportunities criteria	M _i	N _i
01	0.143	0.126
02	0.032	0.028
03	0.073	0.064
04	0.004	0.003
05	0.158	0.140
06	0.139	0.123
07	0.282	0.250
08	0.297	0.263

Table 10. Averaged and normalized relative weights of Threats criteria.

Threats criteria	M _i	N _i
T1	0.166	0.107
T2	0.288	0.187
T3	0.265	0.172
T4	0.314	0.204
T5	0.123	0.079
T6	0.039	0.025
T7	0.182	0.118
T8	0.161	0.104

Since the above visit took place the SW is estimated to have declined in abundance by 50% in the 10 years since the visit. It is likely that the decline is due to the fact that the SW is a highly mobile species and is likely to be affected by changes in the environment. The SW is a highly mobile species and is likely to be affected by changes in the environment. The SW is a highly mobile species and is likely to be affected by changes in the environment.

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Table 11. Overall Priority Scores of SWOT Factors.

SWOT Group	Group Priority	SWOT Factors	Factor Priority within the Group	Overall Priority of Factor
Strengths	0.355	S1	0.237	0.084
		S2	0.251	0.089
		S3	0.048	0.017
		S4	0.033	0.011
		S5	0.242	0.085
		S6	0.038	0.013
		S7	0.148	0.052
Weaknesses	0.142	W1	0.247	0.035
		W2	0.224	0.031
		W3	0.170	0.024
		W4	0.086	0.012
		W5	0.103	0.014
		W6	0.030	0.004
		W7	0.036	0.005
		W8	0.046	0.006
		W9	0.052	0.007
Opportunities	0.349	O1	0.126	0.044
		O2	0.028	0.009
		O3	0.064	0.022
		O4	0.003	0.001
		O5	0.140	0.048
		O6	0.123	0.043
		O7	0.250	0.087
		O8	0.263	0.091
Threats	0.154	T1	0.107	0.016
		T2	0.187	0.028
		T3	0.172	0.026
		T4	0.204	0.031
		T5	0.079	0.012
		T6	0.025	0.003
		T7	0.118	0.018
		T8	0.104	0.016

[illegible]

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Table 12. Internal Factors Evaluation matrix (IFE), commercialization of knowledge in universities.

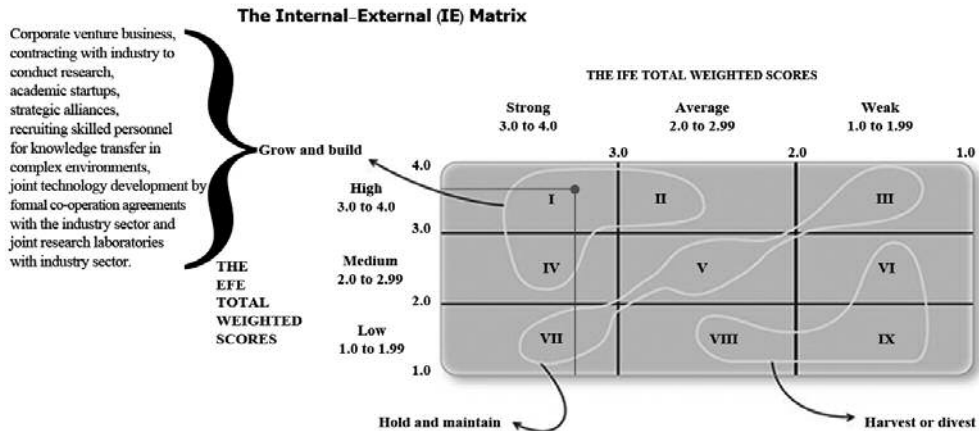
Internal factors Evaluation (IFE): strengths (S) and Weaknesses (W)	Fuzzy weight (normalized overall Priority of factor)	Rank	Weighted score
S1	0.171	3	0.515
S2	0.182	3	0.546
S3	0.034	4	0.139
S4	0.022	4	0.089
S5	0.173	4	0.695
S6	0.026	2	0.053
S7	0.106	2	0.212
W1	0.071	4	0.286
W2	0.063	4	0.253
W3	0.049	4	0.196
W4	0.024	3	0.073
W5	0.028	3	0.085
W6	0.008	2	0.016
W7	0.010	2	0.020
W8	0.012	2	0.024
W9	0.014	2	0.028
Total all weighted scores	1		3.237

Table 13. External factors Evaluation matrix (EFE), commercialization of knowledge in universities.

External factors Evaluation (EFE): Opportunities (O) and threats (T)	Fuzzy weight (normalized overall Priority of factor)	Rating	Weighted score
O1	0.088	4	0.352
O2	0.018	3	0.054
O3	0.044	3	0.132
O4	0.002	1	0.002
O5	0.096	3	0.288
O6	0.086	3	0.258
O7	0.175	4	0.7
O8	0.183	4	0.732
T1	0.032	3	0.096
T2	0.056	4	0.224
T3	0.052	4	0.208
T4	0.062	4	0.248
T5	0.024	3	0.072
T6	0.006	2	0.012
T7	0.036	3	0.108
T8	0.032	3	0.096
Total all weighted scores	1		3.582

[illegible]

Figure 4. Internal-External Matrix.

[illegible][illegible]

[illegible][illegible]

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