

A Hybrid Method (ANP-SWOT) to Formulate and Choose Strategic Alternatives for Development of Rural Cooperatives in Iran

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ABSTRACT

Rural cooperatives, as a small member-owned organizations, are the potential to facilitate socio-economic development in rural areas. Despite this fact, in Iran and many other developing countries, they have not had remarkable successes in this regard. Because strategy formulation and management is a plan to obtain far-reaching development effects of any organization. This study aimed to present a hybrid method to formulate and choose strategies for rural cooperatives development. It combined SWOT analysis, TOWS matrix, and the Analytic Network Process (ANP). We applied brainstorming technique to analyze the external and internal environment of rural cooperatives using the contributions of an experts' team comprising 10 individual CEOs of rural cooperatives and senior employees of the Central Organization of Rural Cooperatives. When this team identified key SWOT factors, TOWS matrix was constructed to create good strategic alternatives. Finally, ANP was applied to prioritize the strategies. According to results, 19 key strategic factors such as lack of management knowledge (W4), and ability to improve value and supply chains (S4) were identified. In addition, this team identified 11 strategic alternatives which among them Implement public policy and provide technical and financial services (SO2), Facilitate procurement of inputs and develop supply and value chains (SO1) and Involve rural cooperatives in policy planning (ST1), had greater priority in Iran. The experts' team believed that the presented combined approach helps decision makers and managers to make and choose the best alternative strategies and factors that affect rural cooperatives development.

Keywords: Analytical network process, Farmers' cooperatives, Strategic development, SWOT Analysis, TOWS matrix.

INTRODUCTION

A cooperative is a business or an organization owned by and operated for the benefit of those using its services. Profits and earnings generated by the cooperatives are distributed among the members or their user-owners. Cooperatives are organizations with the potential to facilitate socio-economic development and to reduce

poverty, especially in rural areas (FAO, 2012; Getnet and Anullo, 2012; United Nations, 2013).

Rural Cooperatives and Development

Cooperatives are relevant to the realization of sustainable development goals. They help decrease poverty by providing employment, livelihoods, and services (Wanyama, 2014).

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Rural cooperatives produce economic benefits as well as social development, inclusion, and empowerment (Choobchian *et al.*, 2015; IFAD, 2014; Sadighi and Darvishinia, 2010). In many countries, agricultural cooperatives help overcome the limitations of family farms to help them compete with capital-intensive farming (Herbel *et al.*, 2015) by increasing efficiency through increased productivity per unit of input and increased quality per unit of output (Altman, 2015). In China, farmer cooperatives connect technical, social, and economic dimensions of farming practice. They provide corresponding services to link farmers to relevant actors, include extension agencies, research institutes and supermarkets (Yang *et al.*, 2014).

Cooperatives represent a means of maintaining the independence of their members. They enable small-scale producers to scale up their operations, expand their bargaining power, and take better advantage of global market opportunities. These organizations empower farming families by providing access to inputs and services like credit, training, storage facilities, and technology to improve the profitability of smallholder farming. They help farmers process, transport, and market their produce (IFAD, 2014; Suh, 2015; Wanyama, 2014). In addition, cooperatives are a source of stability. For example, in negotiations with the government over agricultural policy, they have acted on behalf of their members' interests (Chase, 2003). International Fund for Agricultural Development (IFAD) reports that, in Africa, cooperatives help young women and men gain access to opportunities that are often blocked by traditional age-related barriers (IFAD, 2014).

Rural Cooperatives and Poverty

The role of poverty reduction of cooperatives is well recognized. International organizations such as Food and Agriculture Organization (FAO), United

Nations (UN), International Labor Organization (ILO), and International Cooperative Alliance (ICA) have reported that cooperatives are the most suitable types of organization for addressing all dimensions of reducing poverty and exclusion. The way in which cooperatives reduce poverty varies. They can identify economic opportunities for their members (Lorendahl, 1996), empower the disadvantaged to defend their interests, provide security to the poor by allowing them to convert individual risks into collective risks, and mediate member access to assets that they utilize to earn a living. In rural areas where private businesses hesitate to go and public authorities do not provide basic services, cooperatives play a major self-help role. They give a stronger voice to rural groups and provide opportunities for productive employment as well as offering health care, education, potable water, improved sanitation, roads, and market access (Franks and Mc Gloin, 2007; Henry and Schimmel, 2011).

Rural cooperatives are especially important in the developing world because more than half of humanity (3 billion of 5.5 billion people) live in rural areas and most depend directly or indirectly on agriculture for their livelihoods (World Bank, 2007, 2014).

The role of agricultural cooperatives is instrumental in helping family farms overcome limitations and become competitive with capital-intensive farming (Herbel *et al.*, 2015). As a whole, strong cooperatives and other producer organizations are able to overcome difficulties by offering their members services such as access to natural resources, information, communication, input and output markets, technologies and training. They facilitate participation in the decision-making process. Practices like group purchasing and marketing help farmers gain market power and get better prices on agricultural inputs and other necessities (FAO, 2012). With cooperation, rural residents can have a voice in rural policy-

making and to exchange ideas across borders. These organizations put people before profit and help them to achieve shared social, cultural, and economic aspirations. A cooperative is a social enterprise that promotes peace and democracy.

Rural Cooperatives in Iran

The Iranian rural community has a long history of informal cooperatives in community-based organizations. Boneh, Haraseh, and Wareh are examples of these cultural and traditional organizations. Formal Iranian Rural Cooperatives (IRCs) emerged in 1935, when the government established the first rural cooperative in Davoodabad Village in Garmsar, but the emergence of rural cooperatives accelerated after the 1979 revolution. The most recent report by the Central Organization of Rural Cooperatives of Iran (CORC) on the network of rural cooperatives in Iran lists 2,941 cooperatives with more than 4,500,000 members.

Despite the immense benefits of cooperatives, the main question is why most rural cooperatives in Iran, and even in other developing countries, did not have much success? There may be many reasons, but there is no doubt that rural cooperatives and other farming organizations have a far-reaching effect. Since strategy formulation and management is a plan to obtain a sustainable competitive advantage for any firm (Spulber, 1994), enterprise and organization (Fred and Forest, 2016). The main objective of the present study was developing a useful hybrid method to improve strategy-making for rural cooperatives especially in Iran.

MATERIALS AND METHODS

This study used a hybrid method which combined SWOT (Strengths, Weaknesses, Opportunities and Threats) approach, TOWS

(Threats, Opportunities, Weaknesses and Strengths) strategic alternatives matrix and ANP (Analytic Network Process) to achieve the best results.

SWOT Analysis

SWOT analysis is a simple but useful framework for analyzing organizational strengths and weaknesses (internal environments) and opportunities and threats (external environments). It focuses on strengths, minimizes threats, and takes advantage of opportunities (Wheelen and Hunger, 2012) to attain a systematic approach and support for a decision. It involves systematic thinking and comprehensive diagnosis of factors related to a new product, technology, management, or planning (Wehrich, 1982). The results categorize factors into internal (strengths, weaknesses) and external (opportunities, threats) and enable decision makers to compare opportunities and threats with strengths and weaknesses.

If SWOT analysis is done correctly, it can be a good base for strategy formulation (Babaesmailli *et al.*, 2012), but it cannot quantitatively measure the importance or the influence of each factor in decision-making or strategic decisions (Pesonen *et al.*, 2001; Shrestha *et al.*, 2004). SWOT has no means of analytically determining the importance of factors or of assessing the fit between SWOT factors and alternative decisions (Babaesmailli *et al.*, 2012).

In recent years, researchers have tried to improve this weakness by combining it with techniques such as AHP (Eslamipoor and Sepehriar, 2014; Görener *et al.*, 2012; Lee and Walsh, 2011; Shrestha *et al.*, 2004) and ANP (Zarafshani *et al.*, 2015). Although SWOT approach in combination with AHP can provide a quantitative measure of importance of each factor on decision-making, it also assumes that all factors should be independent and determines the priority of alternatives based on this assumption, which is not always true.



Interdependency can exist among SWOT factors and could change the final priority of alternatives (Yüksel and Dagdeviren, 2007); therefore, it is important to consider dependency among the factors. The present study has used the ANP in place of AHP to determine the priority of strategies. ANP can be adopted to accommodate the concern of interdependence among selection factors or clusters (Yüksel and Dagdeviren, 2007).

TOWS Matrix

The TOWS matrix is an essential completion tool. It illustrates how external opportunities and threats facing an organization or a cooperative can be matched with its internal strengths and weaknesses to form four sets of possible strategic alternatives (SO, ST, WO and WT) (Wheelen and Hunger, 2012). SO (maxi-maxi) strategies use strengths to maximize opportunities. ST (maxi-mini) strategies use strengths to minimize threats. WO (mini-maxi) strategies minimize weaknesses by taking advantage of opportunities. WT (mini-mini) strategies minimize weaknesses and avoid threats.

This is a good way to take advantage of brainstorming to create alternative strategies that might not otherwise be considered. It forces strategic managers to create various kinds of growth and retrenchment strategies (Weihrich, 1982). SWOT can be applied to

create a TOWS matrix to deploy strategies (Aslan et al., 2012). The internal and external factors obtained through SWOT analysis can be replaced in a TOWS matrix (Table 1). The TOWS matrix helps to systematically identify relationships between threats, opportunities, weaknesses and strengths, and offers a structure for generating strategies on the basis of these relationships (Weihrich, 1982).

The Analytic Network Process (ANP)

The ANP is a multiple-attribute decision-making method that is a generalization of the AHP which considers dependence between elements in the hierarchy. The AHP hierarchy formation is a linear (top-down) structure, where ANP is a non-linear structure that extends in all directions (Sevкли et al., 2012). This enables ANP to model complex problems in the real world. This method considers mutual and interdependent relationships among criteria, sub-criteria and alternatives by assessing their relationships (Saaty, 2004). It solves decision-making problems in which interrelations and correlations between decision-making levels (goal, criteria, sub-criteria and alternatives) are considered.

The world requires decisions that involve the interaction and dependence of higher-level elements in a hierarchy with lower-level elements. This means they cannot be

Table1. TOWS matrix (Weihrich, 1982).

TOWS Matrix		External Factors			
		Opportunities (O)		Threats (T)	
		1.	2.	1.	2.
		3.	4.	3.	4.
Internal Factors	Strengths (S)	SO: Maxi-maxi strategies		ST: Maxi-mini strategies	
	1.	That use strengths to		That use strengths to	
	2.	maximize opportunities		minimize threats	
	3.				
	Weaknesses (W)	WO: Mini-maxi strategies		WT: Mini-mini strategies	
	1.	That minimize weaknesses		That minimize	
2.	by taking advantage of		weaknesses and avoid		
3.	opportunities		threats		

structured hierarchically; thus, ANP is represented by a network rather than a hierarchy (Saaty and Vargas, 2013). This network includes cycles connecting its components of elements or levels with loops that connect a component to it. Because SWOT factors are not usually independent, it is necessary to determine the inner dependence of SWOT factors by analyzing the effect of each factor on the others.

Proposed SWOT-TOWS-ANP Model and Its Application

The present study introduces a hybrid method to improve strategy-making for rural cooperatives that combines the SWOT approach and TOWS matrix with ANP. Figure 1 compares a hierarchy and a network structure for SWOT-TOWS. The hierarchy (Figure 1-A) comprises a goal, levels of elements, and connections between the elements. These connections are oriented only toward elements in lower levels, but a network (Figure 1-B) has clusters of elements with the elements in one cluster connected to the elements in another cluster or in the same cluster. A hierarchy is a network with connections going only in one direction (Saaty, 2006). Figure 1 includes outer and inner influences. The first compares the influence of the elements in a cluster on elements in another cluster with respect to a control criterion, the latter compares the influence of elements in a group on each other.

The present study implemented a network structure because the elements of SWOT are dependent. To this end, the following steps were taken in the following order:

a). An expert team comprising 10 individuals (five CEOs of rural cooperatives who were more familiar with internal problem of cooperatives and five senior employees of Central Organization of Rural Cooperatives (CORC) who were more familiar with external problems). All of them were male and over 45 years old, and each of them had more than 20 years of work experience and introduced by CORC. They were selected purposively and invited to meet and became familiar with the research methodology and its aim. Next, using brainstorming technique (Osborn, 1963), we asked participants to write down their ideas. Then and in turn, everybody presented their idea and the team elaborated it. Finally, the team selected a list of most associated SWOT sub-factors.

b). The TOWS matrix was constructed. The expert team was again employed for SWOT to fulfill the TOWS strategic alternatives matrix. They constructed the TOWS matrix and the SO, ST, WO and WT strategies. To formulate each of these strategies, they were asked to match in order the strengths with opportunities, strengths with threats, weaknesses with opportunities, and weaknesses with threats and to specify the results in the relevant cells of TOWS matrix.

c). Defining the network structure of SWOT (Figure 1-B) to select the best strategies for rural cooperative development

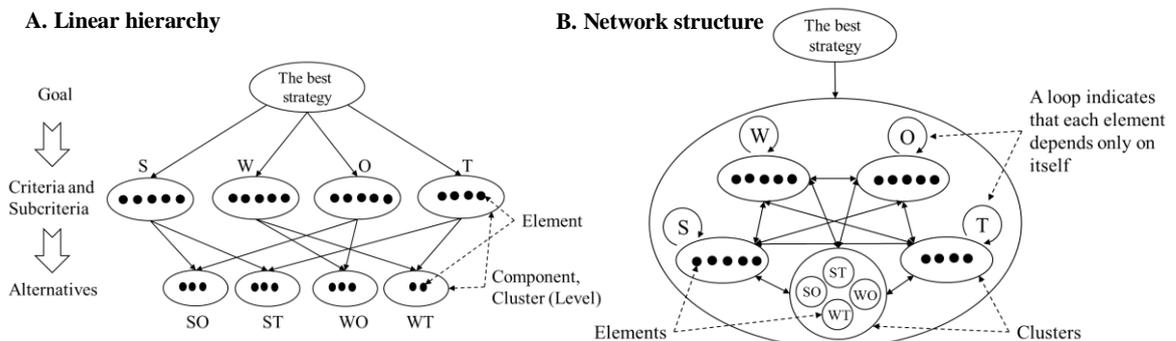


Figure 1. (A) Linear hierarchy and (B) Network structure for SWOT-TOWS.



as the Goal of the network (G). SWOT factors identified as Criteria (C), SWOT sub-factors as Sub-Criteria (SC), and the TOWS strategies as Alternatives (A) were placed into the network structure (super matrix W_n):

$$W_n = \begin{matrix} & \begin{matrix} G & C & SC & A \end{matrix} \\ \begin{matrix} G \\ C \\ SC \\ A \end{matrix} & \begin{vmatrix} 0 & 0 & 0 & 0 \\ W_{21} & W_{22} & 0 & 0 \\ 0 & W_{32} & W_{33} & 0 \\ 0 & 0 & W_{43} & 1 \end{vmatrix} \end{matrix}$$

When using ANP to model a problem, a network structure should represent the problem and pairwise comparisons are required to establish relations within the structure (Saaty and Vargas, 2013). Questionnaires were designed to allow pairwise comparison. Each expert completed the pairwise comparison matrix between the derived factors. The scale of values represented the intensity of opinion from 1 (equal) to 9 (extreme importance). It was used to detect the priority and interdependency

$$W_2 = W_{21} \times W_{22} = \begin{vmatrix} W_{21} \\ 0.000 & 0.672 & 0.500 & 0.323 \\ 0.570 & 0.000 & 0.250 & 0.089 \\ 0.333 & 0.265 & 0.000 & 0.588 \\ 0.097 & 0.063 & 0.250 & 0.000 \end{vmatrix} \times \begin{vmatrix} W_{22} \\ 0.427 \\ 0.110 \\ 0.427 \\ 0.037 \end{vmatrix} = \begin{vmatrix} W_2 \\ 0.351 \\ 0.275 \\ 0.258 \\ 0.116 \end{vmatrix}$$

of factors using the geometric mean of expert opinion. Before calculating geometric mean, Inconsistency Ratio (IR) for checking the consistency of pairwise comparisons should also be investigated. If the IR was less than 0.10, the comparisons' consistency was

Table 2. Pairwise comparison of SWOT factors.

W_{21}	S^a	W^b	O^c	T^d	Priorities
S	1.00	5.00	1.00	9.00	0.427
W	0.20	1.00	0.20	5.00	0.110
O	1.00	5.00	1.00	9.00	0.427
T	0.11	0.20	0.11	1.00	0.037

^a Strengths, ^b Weaknesses, ^c Opportunities, ^d Threats; IR= 0.035.

acceptable; otherwise, the comparisons must be revised. Next, the priority of each TOWS strategy was determined using ANP as follows (Babaesmailli et al., 2012; Shahabi et al., 2014; Yüksel and Dagdeviren, 2007):

1. Pairwise comparisons of SWOT factors assuming no dependency among factors were used to calculate the weight of the main SWOT factors (criteria) according to the goal (W_{21}). The weight (priority) of each factor was calculated (Table 2):
2. Comparisons of SWOT factors based on the assumption of dependency between SWOT factors (W_{22}) (Table 3). The weight (priority) of any factor was calculated using Equation (1).

$$W_n = \frac{(\prod_{j=1}^n a_j)^{1/n}}{\sum_{i=1}^n (\prod_{j=1}^n a_{ij})^{1/n}} \quad \text{Eq.1}$$

3. Calculate the weights of relative importance of SWOT groups (W_2) by multiplying W_{21} by W_{22} .

4. Pairwise comparison of each SWOT sub-factor (W_{33}) (Table 4) and measurement of the weight of a sub-factor (W_3) by multiplying W_{33} by W_2 . The priorities of the sub-factors in each factor are calculated using Equation (1).
5. Calculate the relative importance of any alternative strategy (SO_i, ST_i, WO_i, WT_i) for the corresponding sub-factors. These weights are derived from the relative pairwise comparison matrix (W_{43}) using Equation (1).
6. Form the super matrix (W_n) using the matrices ($W_{21}, W_{22}, W_{32}, W_{33}$, and W_{43}). Because the weight of any alternative strategy derives from the normalized super matrix, normalize the super matrix

Table 3. Inner dependency matrix of SWOT factors vs. other factor.

Strength	W	O	T	Priorities
W	1.00	2.00	5.00	0.570
O	0.50	1.00	4.00	0.333
T	0.20	0.25	1.00	0.097
IR= 0.024				
Weakness	S	O	T	Priorities
S	1.00	3.00	9.00	0.672
O	0.33	1.00	5.00	0.265
T	0.11	0.20	1.00	0.063
IR= 0.028				
Opportunity	S	W	T	Priorities
S	1.00	2.00	2.00	0.500
W	0.50	1.00	1.00	0.250
T	0.50	1.00	1.00	0.250
IR= 0.000				
Threat	S	W	O	Priorities
S	1.00	4.00	0.50	0.323
W	0.25	1.00	0.17	0.089
O	2.00	6.00	1.00	0.588
IR= 0.009				
W ₂₂	S	W	O	T
S	0.000	0.672	0.500	0.323
W	0.570	0.000	0.250	0.089
O	0.333	0.265	0.000	0.588
T	0.097	0.063	0.250	0.000

^a Strengths, ^b Weaknesses, ^c Opportunities, ^d Threats; Threats

to calculate the weight of any alternative strategy.

- Calculate the ultimate weight of any alternative strategy; this requires empowerment of the super matrix to a steady state. The result of super matrix is called the limit matrix (Saaty, 2004, 2006; Saaty and Vargas, 2013). The limit matrix that included the priorities of each TOWS strategy was developed using Super Decision software (ver. 2.4).

RESULTS AND DISCUSSION

SWOT Factors and Sub-Factors of IRCs and Their Priorities

The result of applying brainstorming technique was a list that included the most associated internal and external SWOT sub-factors (Table 5).

Table 4. Pairwise comparison of SWOT sub-factors (W₃₃).

	S1	S2	S3	S4	S5	Priorities	
Strengths	S1	1.000	0.500	0.25	0.25	0.33	0.069
	S2	2.000	1.000	0.33	0.33	0.50	0.111
	S3	4.000	3.003	1.00	1.00	0.50	0.247
	S4	4.000	3.003	1.00	1.00	2.00	0.326
	S5	3.003	2.000	2.00	0.50	1.00	0.247
IR= 0.052							
	W1	W2	W3	W4	W5	Priorities	
Weaknesses	W1	1.00	3.00	2.00	0.20	0.25	0.108
	W2	0.33	1.00	0.50	0.14	0.17	0.046
	W3	0.50	2.00	1.00	0.17	0.20	0.070
	W4	5.00	7.04	6.02	1.00	2.00	0.463
	W5	4.00	6.02	5.00	0.50	1.00	0.313
IR= 0.027							
	O1	O2	O3	O4	O5	Priorities	
Opportunities	O1	1.00	1.00	3.00	5.00	2.00	0.323
	O2	1.00	1.00	3.00	5.00	2.00	0.323
	O3	0.33	0.33	1.00	3.00	0.50	0.114
	O4	0.20	0.20	0.33	1.00	0.25	0.052
	O5	0.50	0.50	2.00	4.00	1.00	0.188
IR= 0.010							
Threats	T1	T2	T3	T4	Priorities		
T1	1.00	2.00	2.00	2.00	0.400		
T2	0.50	1.00	1.00	1.00	0.200		
T3	0.50	1.00	1.00	1.00	0.200		
T4	0.50	1.00	1.00	1.00	0.200		

IR= 0.000

Dependent on overall priority scores (Table 6 and Figure 2), two most important sub-factors are lack of knowledge management in cooperatives (W4), and ability to improve value and supply chains (S4). When we ranked these sub-factors based on the conventional SWOT methodology, the order of these sub-factors were W4 and then T1 (existence of parallel organizations), and the expert team believes that the second order is closer to reality. Then, the "lack of management knowledge" is the most important sub-factor of IRCs

The Main Identified Alternative Strategies for IRCs

Table7 indicates the experts formulated eleven main strategies for development of IRCs based on interactions between SWOT



Table 5. SWOT factors and sub-factors.

Internal factors	
Strengths (S)	Weaknesses (W)
S1. Ability to optimize provision of production inputs for members.	W1. Managers of cooperatives do not have complete authority.
S2. Facilitate implementation of government policies.	W2. Farm ownership is not separate from farm management.
S3. Ability to apply professional management.	W3. Cooperatives have no specific statute.
S4. Ability to improve value and supply chains of products.	W4. Lack of knowledge management in cooperatives.
S5. Facilitate provision of technical and financial services.	W5. Poor performance and economic potential of cooperatives
External factors	
Opportunities (O)	Threats (T)
O1. Legal support of cooperatives.	T1. Existence of parallel organizations.
O2. Existence of governmental facilities and supports.	T2. Imbalance of national funds for needs of cooperatives.
O3. Frequency of rural cooperatives and their members	T3. Lack of implementation of legal protection.
O4. Existence of national and international successful samples.	T4. Instability of government policies and programs.
O5. Existence of different levels of support structures from local to international (such as unions).	

Table 6. Final priority of each SWOT sub-factor.

Environment	Criteria and priority scores (W_2)	Sub-criteria factor priority scores (W_{33})	Sub-criteria overall priority scores (W_3)	Sub-rank	
Internal	Strengths (S) 0.351	S1	0.069	0.024	4
		S2	0.111	0.039	3
		S3	0.247	0.087	2
		S4	0.326	0.114	1
		S5	0.247	0.087	2
	Weaknesses (W) 0.275	W1	0.108	0.030	3
		W2	0.046	0.013	5
		W3	0.070	0.019	4
		W4	0.463	0.127	1
		W5	0.313	0.086	2
External	Opportunities (O) 0.258	O1	0.323	0.083	1
		O2	0.323	0.083	1
		O3	0.114	0.029	3
		O4	0.052	0.013	4
		O5	0.188	0.048	2
	Threats (T) 0.116	T1	0.400	0.046	1
		T2	0.200	0.023	2
		T3	0.200	0.023	2
		T4	0.200	0.023	2

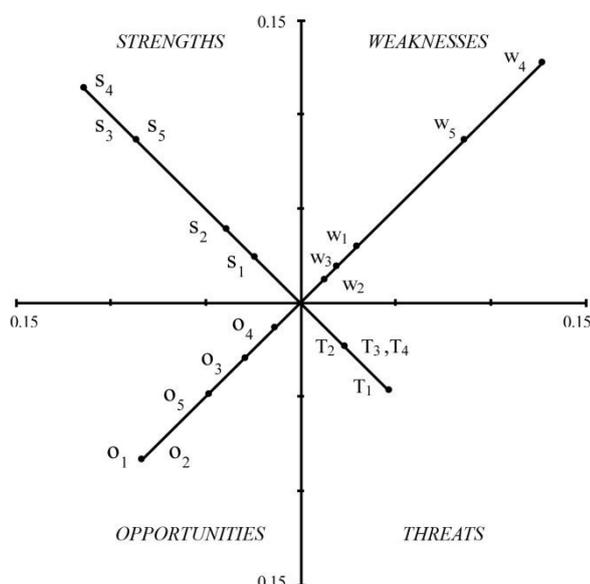


Figure 2. Graphical interpretation of pairwise comparisons of SWOT sub-factors.

Table 7. TOWS matrix for rural cooperatives development in Iran.

TOWS matrix	External factors	
	Opportunities (O) O1, O2, O3, O4, and O5	Threats (T) T1, T2, T3, and T4
Internal Factors	<p>SO Maxi-Maxi strategy</p> <p>S1 SO1. Facilitate procurement of production inputs and develop supply and value chains of rural cooperatives inputs and products to benefit from opportunities such as legal supports and facilities.</p> <p>S2 SO2. Implement public policy and provide technical and financial services using rural cooperatives to benefit from support structures and existing successful examples.</p> <p>S3 SO3. Specialization of management of rural cooperatives to benefit from opportunities.</p>	<p>ST Maxi-Mini strategy</p> <p>ST1. Increase competitiveness and reduce dependency of rural cooperative on financial, legal, and governmental support through provision of production inputs and optimization and improving supply and value chains.</p> <p>ST2. Involve rural cooperatives in policy planning and implementation and provide financial and technical services.</p> <p>ST3. Increase competitiveness and reduce dependency of rural cooperative on financial, legal, and governmental supports by developing and promoting professional management of rural cooperatives.</p>
	<p>WO Mini-Maxi Strategy</p> <p>W1 WO1. Enhance authority and knowledge of current management and educate professional managers for rural cooperatives to benefit more from available opportunities.</p> <p>W2 WO2. Authorize specific statute for rural cooperatives for multiplicity and existence of successful examples and their support structures.</p> <p>W3 WO3. Develop programs to improve performance and economy of rural cooperatives for maximum benefit of opportunities such as financial support and facilities.</p>	<p>WT Mini-Mini Strategy</p> <p>WT1. Improve competitiveness and reduce threats emanating from lack of credit and government support and political and programmatic instability through development of knowledge in rural cooperatives management.</p> <p>WT2. Policymaking and planning to improve performance and economy of rural cooperatives to enhance competitiveness and reduce threats of instability of policies, programs, lack of funding and government supports.</p>



sub-factors. They identified three SO, ST and WO, and two WT strategies based on previously identified sub-factors. These strategies are varied from some policy based to social, economic and legal based strategies.

Internal and External Space Analysis of Rural Cooperatives

Table 6 and Figure 3 show that in the internal space, the strengths (0.351) of rural cooperatives were greater than the weaknesses (0.275). In the external space, the opportunities (0.258) were greater than the threats (0.116). Figure 4 shows that the internal challenges of the IRCs (S+W= 0.626) are greater than its external challenges (O+T= 0.374) and the positive aspects of the IRCs (S+O= 0.609) are greater than its negative aspects (W+T= 0.301).

Proposed TOWS Strategies for IRCs Development

The inner and outer dependency of the SWOT factors and sub-factors indicates that SO strategies are the most powerful TOWS strategies for RICs development and WT

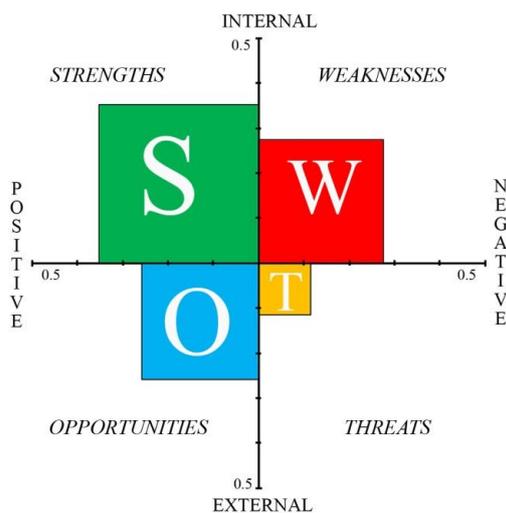


Figure 3. Internal and external environment space of RICs (SWOT factors).

strategies are the least powerful (Figure 4).

The final priorities of the alternative strategies are shown in Figure 5 and Table 8. They indicate that SO2 (0.134 or 1.000), SO1 (0.131 or 0.980), and ST2 (0.111 or 0.830) are, in order, the three best TOWS strategies and WO2 (0.005 or 0.033) is the weakest TOWS strategy for RIC development. Given the (a) rural multiplicity and dispersion, (b) inefficiency and fragmentary nature of agricultural crops value chains, and (c) top-down agricultural planning system in Iran and with respect to the capacity of rural cooperatives, it seems that adopting these strategies can play an important role in development of rural cooperatives and societies. When we employed conventional SWOT methodology, the three most important strategies were SO1, SO3 and WO1, while the expert team believed that the results of ANP-SWOT were closer to the reality of Iran's cooperatives.

This study presented a combined approach to help managers choose the best alternative strategies considering both internal and environmental factors. Because these factors and sub-factors that affect decision- and strategy-making are generally dependent, application of ANP in combination with SWOT analysis and TOWS strategic alternatives matrix comprised a useful and

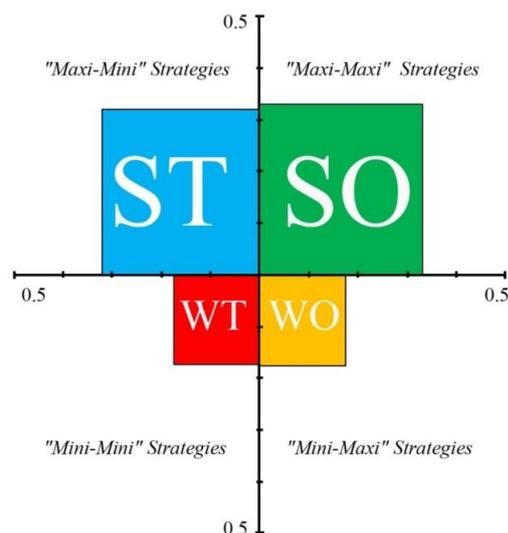


Figure 4. TOWS strategy spaces for RICs.

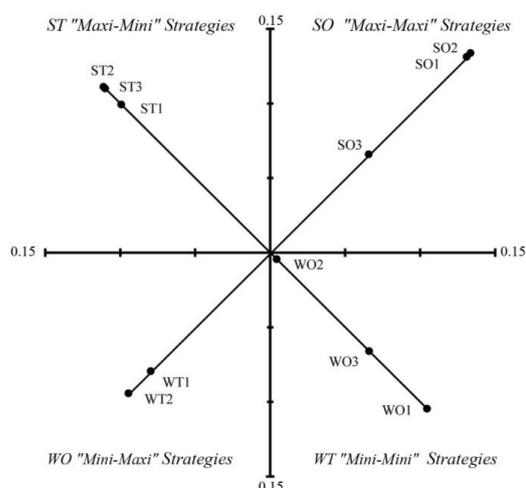


Figure 5. Graphical interpretation of TOWS strategies space of RIC.

Table 8. Priorities of each TOWS strategy.

Alternatives group	Alternatives	Normal	Ideal	Ranking
SO (0.331)	SO1	0.131	0.980	2
	SO2	0.134	1.000	1
	SO3	0.066	0.492	10
ST (0.320)	ST1	0.099	0.742	6
	ST2	0.111	0.830	3
	ST3	0.110	0.823	4
WO (0.175)	WO1	0.105	0.783	5
	WO2	0.005	0.033	11
	WO3	0.066	0.494	9
WT (0.174)	WT1	0.094	0.706	7
	WT2	0.080	0.594	8

successful tool for strategy-making and choosing between strategic alternatives.

CONCLUSIONS

Although in any society cooperatives can play an important role in achieving development goals, but in many developing countries, such as Iran, they have not been successful. One of the most important causes of this failure has been their limited ability to formulate appropriate strategies or strategic planning. The present study offered

a hybrid method (ANP-SWOT) to choose and formulate better strategies for development of rural cooperatives. The results indicate that implementation of SO2, SO1 and ST2 strategies are of greater priority than the others. This is because villages are numerous and scattered, the value chains of agricultural crops are inefficient and fragmented, and the system of agricultural planning is top to down. Thus, with respect to the capacity of rural cooperatives, it seems that implication of these strategies can play an important role in facilitating the provision of services to rural areas, improvement and increase in efficiency of value chains, and involving the local community in the process of agricultural and rural planning. Undoubtedly, all these will accelerate and facilitate the rural development process of Iran. Moreover, the expert team believes such enhanced version of SWOT analysis method is capable to provide enriched insights for strategic management. It can help managers to choose the best alternative strategies and it is a useful and successful tool for strategy formulation and adoption.

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روشی تلفیقی (ANP-SWOT) برای تدوین و انتخاب راهبردهای توسعه تعاونی‌های روستایی در ایران

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چکیده

تعاونی‌های روستایی به عنوان یک سازمان کوچک متعلق به اعضا، دارای توان بالقوه لازم برای تسهیل توسعه اجتماعی و اقتصادی در مناطق روستایی هستند. با این وجود، در ایران و بسیاری از دیگر کشورهای در حال توسعه آنها دستاوردهای شایان توجهی در این زمینه نداشته‌اند. از آنجا که تدوین راهبرد و مدیریت آن روشی برای دستیابی به اثرات توسعه‌ای گسترده در هر سازمانی است، این مطالعه روشی تلفیقی برای تدوین و انتخاب راهبردهایی برای توسعه تعاونی‌های روستایی ارائه نموده است. این روش ترکیبی است از تجزیه و تحلیل SWOT، ماتریس TOWS و فرایند تجزیه و تحلیل شبکه (ANP). ما از روش طوفان اندیشه برای تجزیه و تحلیل محیط داخلی و خارجی تعاونی‌های روستایی به کمک تیمی از کارشناسان خبره بهره بردیم. پس از شناسایی عوامل کلیدی SWOT توسط این تیم، ماتریس TOWS به منظور تدوین راهبردی مناسب تشکیل شد. در نهایت، از روش ANP برای اولویت‌بندی این راهبردها استفاده شد. با توجه به نتایج، ۱۹ عوامل کلیدی راهبردی مانند فقدان دانش مدیریتی (W4) و توانایی بهبود زنجیره ارزش و تأمین (S4)، شناسایی شدند. تیم کارشناسان همچنین ۱۱ راهبرد را شناسایی نمود که در میان آنها راهبردهای SO1، SO2 و ST2 از اولویت بیشتری در ایران برخوردار شدند. تیم کارشناسان معتقد بودند که روش تلفیقی ارائه شده می‌تواند مدیران را در فرآیند تدوین و انتخاب بهترین راهبردها و عوامل مؤثر بر توسعه شرکت‌های تعاونی روستایی یاری نماید.