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Identification and Prioritization of Critical Success Factors for Television Broadcasting in Islamic Republic of Iran Broadcasting (IRIBa)

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Abstract

The Critical Success Factor (CSF) approach is one of the techniques that help managers identify, clarify, and sort out the most important and critical factors that contribute to the survival and success of an organization. The critical success factors are derived from the organization's mission and strategic goals. Deficiencies can be addressed by pursuing appropriate strategies based on effective CSFs in the media industry. Therefore, most researchers, managers and strategists focus on the CSF approach, which can help television companies provide comprehensive and effective CSFs to identify the appropriate strategies. This study uses a combination of the Delphi technique to identify CSFs in media broadcasts and the Fuzzy Decision-Making Trial and Evaluation Laboratory (FDEMATEL) method to evaluate CSFs in broadcasting in Islamic Republic of Iran Broadcasting (IRIB). This study identifies eight CSFs: Competitiveness, technology, audience reach, management and leadership, human resources, finance, internal environmental factors, and external environmental factors in IRIB. Identifying the relevant CSFs, this paper proposes a decision-making framework to help managers to develop their television stations, which would inevitably result in attracting more potential customers and an increase in their profit.

Keywords: Medfia managemenft; Medfia broadcasft; Crfificafl Success Facftors; Decision-making trial and evaluation; Fuzzy dematel

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Introduction

Broadcast media are moving to a business model that increasingly focuses on audiences to generate profits through advertising, digital subscriptions or membership payments, e-commerce and micropayments. As a result, broadcasters are striving to maximize audience satisfaction. In addition, cultural and social differences have changed values and the nature of interest. On the other hand, technological developments and the emergence of modern media have created diverse competition. In recent years, the rapid development of technology and the presence of numerous competitors have made it possible to produce a wide variety of content. If managers and decision-makers do not look for strategies to increase revenues and attract audiences, they will be forced to disappear from the market. Before embarking on planning a revenue strategy, decision-makers need to analyze broadcasters' internal and external environments. On the other hand, it is necessary to study audience demand and media structure systematically. People as media users have always been important for the media industry because their engagement means long-term participation in the products on the market. Increasing competition and the dominance of advertising as the main source of media revenue have made audiences even more attractive to media managers [1-7].

Business aspects that an organization considers to achieve certain goals are called Critical Success Factors (CSFs). CSFs are useful in identifying the areas where an organization should focus its efforts to achieve its goals. These CSFs can help an organization gain a competitive advantage while improving overall performance when put into practice. To improve success, CSFs must be

considered and specified in all areas of the organization. Internal forces can impact CSFs, so it is important to address issues such as internal forces, barriers, and challenges. CSFs are the key criteria, characteristics, or variables that make an organization successful [8-11].

Islamic Republic of Iran Broadcasting (IRIB), a state-run broadcasting corporation, is the country's only national radio and television system. IRIB uses terrestrial digital transmission TV and satellite transmission for broadcasting content. Although IRIB is Iran's most widely distributed media outlet, it has been plagued by major crises over the past decade. Due to the number, diversity, and popularity of satellite TV networks and social media, IRIB has lost its audience. Research shows that many Iranians are turning to alternative sources of information instead of the state-run radio and television because Iranian broadcasting does not provide complete or even adequate coverage. The main cause of the huge decline in IRIB's ratings is attributed to a lack of diversity. The major difficulties can be divided into three categories: Lack of diversity and the resulting audience decline, lack of transparency and trust, and economic and financial inefficiency. These problems have led to a number of serious doubts and criticisms of the overall media policies of the Iranian government, which manages and controls the country's broadcasting infrastructure. Despite a blanket ban on all satellite radio and television channels (Iran, 1995), research shows that more than 42% of Iranian viewers access media content generated by foreign-based satellite television networks. And this number is increasing significantly every year. A number of powerful individuals, organizations, and sectors have the power to control and influence public policy regarding radio and television broadcasting. The Council for the Cultural Revolution is responsible for setting the basic principles of Iranian cultural policy. As a result, this council actually has the power to issue regulations for all types of state-owned media, including radio and television. The Iranian Parliament is responsible for setting public policies on radio and television. In addition, the government can influence macro-level policies by increasing or decreasing budgets for broadcasting and other types of financial support, as it is responsible for setting annual budgets for the broadcasting organization (Experts, 1979). IRIB's total budget is financed by advertising and the government [12-17].

High mountains can block radio and television signals to neighboring areas. Satellites are usually used to transmit radio and television images to those areas, but economic sanctions imposed on Iran by the U.S. make it difficult for Iranian government broadcasters to acquire satellite platforms. This is one of the most important consequences of the sanctions: Satellite operators have stopped transmitting radio and television images from Iran through their platforms, severely limiting public access to IRIB programming in some cities. This problem could be solved by a broadcast relay station, using cable or satellite services instead of terrestrial TV signals. In addition, there is a need to build a land-based network to transmit radio and television images from all parts of the country, but due to sanctions it is not possible to use the most advanced technology.

Based on the above problems, an evaluation system is needed to study the structure and complexity of television broadcasting with a systematic approach so that media managers can evaluate and select a favorable strategy before successful implementation [18-22].

Against this background, this study begins with a comprehensive review of the media literature and extracts all factors involved to answer the questions posed below. Then, a hybrid Delphi-DEMATEL approach is used to clarify, evaluate, and rank the CSFs that influence IRIB's television programming. The critical factors are examined from different perspectives, such as political, social, cultural, technological, and economic. Finally, we draw conclusions based on the discussion we have.

Thus, the questions of this research are as follows:

- What are the effective CSFs for developing and managing television broadcasting in IRIB?
- What CSFs are the most important and influential?

The research makes it clear that of all the existing media sectors, broadcasting is the one that is most protected from the current turmoil in global media markets; this is primarily because broadcasting is subsidized in some form by the government in most countries around the world, which gives it at least some financial stability . However, it is also the sector most likely to suffer from direct government interference in content decisions, a variable that renders management decision-making essentially meaningless. Several studies have found that governments can effectively influence audience attitudes and behavior by using government-controlled media. According to research done by Marius Dragomir, the media industry has been severely affected by the economic downturn. Those media outlets that cover tabloid topics and are more digitally savvy than others and those that depend on investors are surviving or even gaining an increasing market share. On the other hand, independent media are in dire financial straits all over the world. In addition, Dragomir believes that government interference in the media is increasing as a result of this type of funding. Government control manifests itself in many ways, with the most impact on management decision-making. The government can indirectly control news content by offering financial support, which can inevitably lead the media to dispense themselves from their transparency-based policies; otherwise, they would be denied that financial support. Management plays a crucial role in the media, whether state-run or independent. Lucy Küng has attempted to expand the role of management in the media by classifying many articles into three parts: Changing Contexts, Emerging Challenges, and Applying Leadership Theories to Media Leaders. "Excellent" project management and leadership promote media success. Management is the interaction with an organization's human resources and the use of the physical resources available to a manager to efficiently and effectively achieve desired goals and objectives. Four basic functions of management, namely planning, organizing, actuating, and controlling. In the management of broadcast media, accurate planning should be done, which

includes the pre-production process that involves determining the idea or concept for the completion of a television program to be produced, sources, and budget estimates. Organization is a method by which broadcasters organize and divide their work among employees. When implemented efficiently and smoothly, the organization's goals can be achieved. Organizational functions of broadcasting media management can be ensured by distributing their production tasks. Activation of broadcast production activities is the executive phase in achieving the objectives of broadcasting organizations, and the activation function in broadcasting media management can be created during the production process. Control is defined as a measure taken to ensure that our output is consistent with what we have originally plan [23-30].

In a rapidly evolving economic, cultural, and technological environment, media managers face new daily challenges. One of the most important tasks of a manager is to properly utilize an organization's resources. The recruitment process in management involves the identification of needs, recruitment, selection, placement, training, development, and appraisal of the personnel. This responsibility includes the effective allocation of the organizations financial, technological, and natural resources and the deployment and control of human resources (or human capital). Having or not having qualified personnel is an important factor that can play a fundamental and sustainable role in all areas and can be effective in management, leadership, entrepreneurship, and technology. Khojasteh points out some CSFs such as the shortage of skilled manpower, manpower efficiency, complex organizational structure, and increasing cost of traditional media production. Some studies specifically address the functions of human resource management in media firms. Becker, Vlad, and Martin show how changes in the media market have affected employment patterns. They found that large media outlets tend to hire only experienced people. Costello and Oliver have examined the literature [31-35].

Human resource studies in the media industry to determine how change may affect human resource functions such as recruitment, retention, and employee performance in the media industry. They recommend that media companies train their employees to keep them up to date with technological developments. Media companies and their employees must remain adaptable to gain a competitive advantage over their peers. The impact of organizational innovation as a CSF on strengthening technological capabilities in media management. Their paper analyzes nine CSFs, such as product and service innovation, process innovation, and the use of technology [36-41].

Companies must plow back a portion of their revenues into technology and innovation to grow their businesses. The cycle of investment and innovation drives the growth of an organization's business. Without it, that business languishes and fails. It grows static. But with it, that business thrives and grows like a healthy organism. Therefore, media companies cannot help but adapt to this challenging environment. Laven argues that technological development is one of the CSFs in the media's competition for audience favor. In addition, the impact of the Internet on traditional broadcast media and the possibility of convergence in multimedia services are crucial. Flew provides an overview of developments in media broadcasting technology and identifies trends for the coming years. Based on the structure of his report, two main developments are driving the trends in media. These developments are the increasing access to broadband Internet and the continuous evolution of media technology. Broadband Internet is increasingly available to the public, which has allowed for the access and use of digital media in the form of television, video, and wireless and cellular phone. The cost of broadband is falling, as is its speed and the size and weight of the equipment needed to access it. Media technology, including mobile devices and applications, is also evolving rapidly. As broadband access increases, media content is increasingly delivered over the Internet. The shift to broadband and Internet-based content is impacting the entire media sector as traditional television and radio advertising revenues are displaced by Internet advertising [42-49].

Media companies create content for audiences to consume and audiences for advertisers to consume. Khojasteh believes that finding a different model for presenting content is one of the most important concerns of media management. It affects the type of content and has an impact on different areas of the organization, including the production process, organizational structure, and human resource model. In order to make the best strategic and management decisions, managers in content and audience markets need specialized training and an understanding of the unique dynamics of the markets in which they operate [50-56].

Mierzejewska looks at strategic management, structural theories, transnational media management, organizational culture, technology and innovation, and leadership to identify critical factors for media. Identifying all the CSFs involved and the cause-and-effect relationships between the factors helps predict the future of media. Some of the factors mentioned in the article are creativity in content creation, technological innovation, and organizational and strategic planning capability. Generic success factors for media products from the literature. These factors have been synthesized into complex concepts, the building blocks of success, based on theories and empirical findings, which they have further examined in an exploratory qualitative study. They have concluded that the building blocks apply to all media types, regardless of the seriality and content types of the media products. They have also found that four building blocks are necessary for media success: good distribution, environmental focus, form/design, and human resources. Kalathil looks at the CSFs of media development from different angles. Working with different forms of media in different areas, working in conflict and post-conflict environments, lack of reliable information, examining the evolving media landscape, focusing on the essential hard and soft infrastructures of the media sector, and monitoring and evaluation are essential components of a media development program. Coyne and Leeson believe that audience demand, investment, privatization, and the study of all aspects of the media industry are CSFs in media management. Audience behavior research is crucial for any media management

strategy in a competitive environment. Understanding how the audience behaves allows the media company to create the right content to impact the business. In other words, without a deep understanding of how the audience responds to content, it is impossible to define how to tailor media to elicit the greatest degree of attention and feedback.

Broadcast media are handled differently in countries with different government systems and social, economic, and political circumstances. In countries with authoritarian governments, for example, the government controls the broadcast media and often censors content it deems unfavorable. In countries with capitalist economies, broadcast media are typically owned by large corporations that use them to promote their products and interests. And in countries with democratic governments, broadcast media are typically regulated by independent agencies and are intended to reflect a wide range of views. Therefore, we need to examine these issues to know which media components are needed, which are not, and which need refinement. The same is true at the global and national levels and at the local level. We need to be clear about our objectives and the best way to achieve them [57-66].

As mentioned earlier, various aspects of media management have been studied in previous research. Most of them have been conducted to study policymaking and media management. In Iran, Riahi has highlighted CSFs for the growth of small and medium enterprises in the form of industrial clusters. He has also used a hierarchical decision-making method to weight and rank the importance of each aspect based on expert opinions. Decision-makers in broadcasting companies have used a variety of methods to identify CSFs. Hollifield uses theories of strategic management and organizational culture to examine the issues facing newly independent media in states where political and economic systems are being renegotiated. The critical factors identified in this study are hyper-competition for audiences and advertisers, aging and shrinking audiences, lack of credibility, concentrated and unstable advertising markets, and governmental pressures on content and operational decisions. In another study conducted by Talebian, the Delphi method identifies the most important parameters, namely 28 key parameters, with a major impact on media technology and target audiences. Njeri has considered the following CSFs in media outlets: the threat of new entrants, the threat of substitutes, the power of suppliers, the bargaining power of buyers, and the intensity of competition. The study shows that different strategies are key to succeed in the competitive environment of media in Kenya. The OECD Global Forum has also emphasized that technological development and the emergence of new products and services have increased competition in media markets. They believe that other factors, including government policies, audience behavior, and the availability of appropriate programming, are among CSFs [67-72].

In analyzing the different media in Iran, Zanconato categorizes contributing factors in Iranian media into four groups: Politics, organizations, education, and monopoly. He also claims that no company in Iran publishes figures to measure audience ratings. Lupo has worked on a multi-objective approach to television program design in which audience ratings and costs are the most important objectives to optimize as they are crucial factors in the decision-making process. He mentions the issues of costly production, organization and strategic planning ability, and inadequate structure in the face of environmental changes and media technologies. He creates and solves an integer mathematical programming model with the predicted values of audience ratings and costs provided as input data by a suitable prediction engine. The future studies in media broadcast, they find 38 factors that affect media broadcasts such as Political, Government Support, Human resource quality, etc. The general factors involved in broadcast media management [73]

Materials and Methods

To achieve the purpose of the research, we used a methodology based on the Delphi approach and fuzzy DEMATEL **(Figure 1)**.

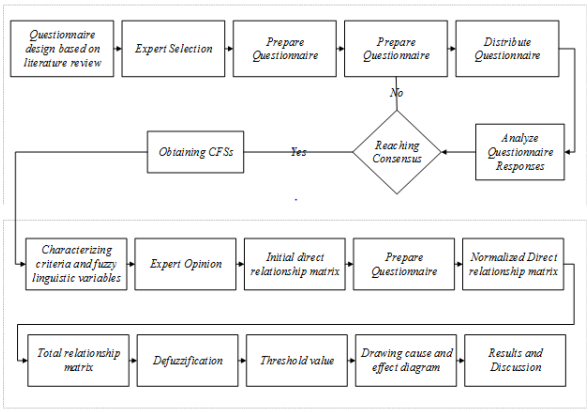

Figure 1 Research Framework.

Delphi methodology

The Delphi method can be used for complex problems that require an intuitive interpretation of facts or educated guesses. It is also recommended as an alternative to conventional meetings to avoid problems caused by strong personalities, team pressure, and status effects. Kezar and Maxey emphasize that the Delphi method is well suited for solving complex and multifaceted problems that require the attention of multiple stakeholders. The Delphi method consists of multiple rounds of questionnaires - depending on the pragmatic decision, but there must be at least three iterations of questionnaire collection. The goal of the first iteration is to define specific questions about the various components of the issue at hand. An open-ended questionnaire is distributed to a panel of experts and decision-makers. By sorting, categorizing, and searching for common themes, the responses to the open-ended questions will be qualitatively analyzed. These responses are modified and then used to create the second questionnaire. The second and subsequent rounds are more precise, as the questionnaire requires ranking and quantitative analysis of the different items in terms of their importance. According to the results reported back by the researchers from the previous rounds, there is a tendency to approach a consensus of opinions. Using a literature review and the Delphi approach

to interview and collect data from forty experts who have over 15 years of experience in the media industry, we were able to identify the CSFs in this study .

The Delphi technique relies on a panel of experts. This study uses experts with knowledge, expertise, and experience in the media industry for a comprehensive overview of the topic. The experts selected were decision-makers in the media field (seven experts), media managers (twelve experts), professors from a management faculty (five experts), professors from a media faculty (nine experts), and organizational strategists with relevant knowledge and experience in the media field (seven experts). The experts were presented with a comprehensive definition of the problem under study. A questionnaire consisting of critical factors extracted from the literature review was provided to solicit the experts' opinions on the topic. The experts were asked whether the questionnaire was comprehensive and missing any factor. In addition, the experts were asked to categorize the factors. They divided all the factors affecting the media into seventeen groups. The responses and common viewpoints were compiled and summarized. Based on the responses to the first questionnaire, a questionnaire was created to determine the likelihood of each factor occurring in Iran National Radio and Broadcasting Corporation. Some factors were omitted due to their insignificance or thematic overlap. A new list and group of CSFs was created after comments were solicited in a second round of the Delphi technique. The results of this questionnaire were collected and analyzed. Another questionnaire was created and returned to the specialists based on the responses. The specialists were again asked to provide explanations, make suggestions, and answer the questions. The responses to the third questionnaire were collected and evaluated after a consensus was reached on CSFs. The factors were divided into 8 groups, and each group was assigned an appropriate title **(Table 1)**.

Table 1. All media factors categories gathered from literature review.

Competitiveness	Technology	Audience (media) Coverage
(i) Impartiality and free expression of different perspectives	(i) Hybrid media	(i) large national audience reach (network)
(ii) Trust in broadcast corporation	(ii) Convergence of technologies, platforms and services	(ii) large local audience reach.
(iii) audience targeting	(iii) Increasing the cost of traditional media production	
(iv) Attraction Audience Strategies	(iv) Technological innovation	
Management and Leadership	Human Resource	Financial
(i) Tall, complex and high-volume organizational structure	(i) Lack of specialists	(iii) Overestimation of requirements
(ii) Inappropriate structure in the face of environmental changes and media technologies	(ii) Lack of meritocracy	(iv) Insufficient budget
(iii) Mismanagement of risks	(iii) Efficiency of manpower	(v) Changes in the budget for the financial year
(iv) Organization & strategic planning capability	(iv)Supplying manpower	
(v)Ambiguity of planning		
Internal Environment Factor	External environment Factor	Education
(i) Creativity in content creation	(i) New government legislation or	(i) Staff education and skills
(ii) Speed in informing	new rules	(ii) Promotion of media knowledge
(iii) Changing priorities in existing programs	(ii) Exchange rate fluctuations	
(iv) Late changes requested by shareholders	(iii) Internal and external country politics	
(v) New shareholders	(iv)War	
(vi) Conflicting goals of cost, time, quality, and scope	(v) Sanction	
(vii) Uncertain constraints and lack of planning	(vi)Short-term cyclical changes in the economy	
(viii) Estimation/ planning errors	(vii) Inflation	
(ix) Wrong time plan prediction		
(x) Limited time underestimation of requirements		
(xi) Misinterpretation of requirements		
(xii) Dishonesty and unethical relationship		
(xiii) Change the pattern of media consumption		
Business Intelligence	Revenue	Innovation Capability
(i) Insight into Competition	(i) Advertisement	(i) Learning capability

(ii) Insight into Audiences	(ii) New ways of making money (setting up a cable network, selling apps, archives	(ii) Resources allocation
(iii) Analyze Patterns	(iii) Sponsorships	(iii) Manufacturing capability
(iv) Content Marketing		(iv) Marketing capability
		(v) R & D capability
Technology upgrade	Investment	Program Production Capacity
(i) Transition from analog to digital	(i) Stocks	(i) Timely response
(ii) Network as infrastructure	(ii) Investment funds	(ii) Equipment
New media formats		(iii)
Cost Control	Audience Expectation	
(i) control Costly productions	(i) The need for specialized channels	
(ii) Keeping a Track of Costs	(ii) Interest in entertaining programs	
(iii) Planning the budget properly	(iii) Change the pattern of media consumption	

Dematel

DEMATEL is a method to instruct the sequence of assumed information. It is an effective method for identifying a cause-effect chain of complex system components. It involves evaluating the interdependent relationships among CSFs and finding the critical ones through a visual structural model. Structuring complex issues through graphical representations and analyzing causal influences can help illuminate complex issues, concerns, systems, or concepts. The DEMATEL (Decision-making Trial and Evaluation Laboratory) technique is a methodology that can be used to investigate and solve complex and intertwined problems. The end product of the DEMATEL technique is a visual structural model, a diagram of impact relationships that respondents use to coordinate their own global actions. The most important feature of the DEMATEL technique is to construct relationships between criteria. DEMATEL uses a matrix operation to identify the causality and influences among all CSFs to identify the main problems in a complex system and their improvement methods.

Fuzzy

The fuzzy calculus theory is a part of mathematics that has been extensively studied in recent years and has proven to be a realistic and impressive tool for representing technical and scientific phenomena. Fuzzy Logic (FL) is essentially a multi-valued logic that allows the interpretation of intermediate values between traditional evaluations such as true/false, yes/no, high/low, etc. Computers formulate and interpret terms such as tall or very fast to implement a more logical way of human thinking in computer programming. We may encounter a complex or uncertain situation where we cannot decide whether this statement is true or false. In this case, fuzzy logic provides very valuable flexibility in reasoning.

Fuzzy Dematel

An in-depth comparison of the most commonly used multicriteria decision-making strategies. They have also suggested DEMATEL as the best material for barrier studies. They used the fuzzy set theory to extend the normal DEMATEL technique to fuzzy DEMATEL, taking into account biases and fuzziness in the decisions/evaluations made by humans. In this study, the fuzzy DEMATEL method has been used, which is a fuzzy set extension of the regular DEMATEL technique. As mentioned earlier, fuzzy DEMATEL can account for human judgments' inherent biases and ambiguities.

Results

Data were collected through interviews and questionnaires. In this study, the following data collection method was used:

- Expert interviews.
- Literature review.
- Field study (questionnaire).

Four questionnaires were used for data collection: critical factors identification questionnaire (three questionnaires) and paired comparisons based on fuzzy DEMATEL Questionnaire **(Table 2)**.

Table 2. Linguistic variable.

Linguistic Terms	Influence Score	Triangular Fuzzy Numbers
No Influence (NO)	0	(1,1,1)
Very Low Influence (VL)	1	(2,3,4)
Low Influence (L)	2	(4,5,6)
High Influence (H)	3	(6,7,8)
Very High Influence (VH)	4	(8,9,9)

The result of reliability measured by Cronbach's alpha in the questionnaire for identifying critical factors in the media. Questionnaires are generally considered reliable when Cronbach's alpha is higher than 0.7. For other questionnaires, compatibility is measured. Forty experienced experts specializing in media were selected for the pairwise comparisons. The structure of the DEMATEL technique assumes that a framework has an arrangement of different criteria (C), with the formula C={C1, C2, ...Cn}. In this study, 8 CSF groups are considered based on 40 expert opinions. The steps of the fuzzy DEMATEL technique are as follows:

Characterization of criteria and fuzzy linguistic variables. This step involves establishing benchmarks for decision-making; criteria should be accessible to decision-makers for comparison.

Expert opinion on this step, experts are asked to determine the impact of each criterion on the other criteria. Therefore, a series

of pairwise comparisons between indicators must be performed. The notation Õij = (lij, mij, uij) shows the expert's opinion about CSF i on CSF j; in this way, a matrix of fuzzy numbers is characterized for each respondent (S-B et al., 2015). The pairwise comparison is performed using linguistic variables. Therefore, five-point fuzzy linguistic scales are used: very high influence (8, 9, 9), high influence (6, 7, 8), low influence (4, 5, 6), very low influence (2, 3, 4), and no influence (1, 1, 1) **(Figure 2)**.

Initial direct relationship matrix: The direct relationship matrix is created by the media experts. The initial direct relationship matrix is formed by taking the average of the same opinions on each criterion. This matrix is an n × n matrix.

Normalized direct relationship matrix: Normalization is performed using the following equations.

$\tilde{A}_h^{} = k \times \tilde{O}_h$

$k=\min(1/(\max\sum_{j=1}^{n}|(O_{ij})^{\sim}|),1/(\max\sum_{j=1}^{n}|\tilde{O}_{ij}|))$ $(i,j=1,2,\ldots,n)$

Step 5 Total relationship matrix. Each fuzzy array $[l'']_{ij}$, $[m'']_{ij}$, $[u'']_{ij}$ in matrix Ñ (total relationship matrix) is calculated using the following equations. Matrix I denotes the identity matrix.

$[l'']_{ij}=\tilde{A}_l \times (I-\tilde{A}_l)^{-1}$

$[m'']_{ij}=\tilde{A}_m \times (1-\tilde{A}_m)^{-1}$

$[u'']_{ij}=\tilde{A}_u \times (1-\tilde{A}_u)^{-1}$

Defuzzification: The fuzzy number should be defuzzified using the following equation **(Table 3)**.

$v= (l+4m+u) /6.$

Threshold value means threshold eliminates criteria with low influence in the model. The average of the entire relationship matrix is needed to calculate this common value. In the decision-making matrix, the entries above the threshold are replaced by one, and the entries below the threshold are replaced by zero **(Tables 4,5)**

Competitiveness(C1), Technology(C2), Audience Reach(C3), Management and Leadership(C4), Human Resource(C5), Financial(C6), Internal Environment Factor(C7), External environment Factor(C8)

The vertical axis is (R - J); if the value of (Ri - Ji) is positive, the CSF belongs to the cause group; otherwise, it belongs to the effect group. Thus, the casual diagrams convert the complex causative relationship between the measures into a structural model and provide a clear insight into the solution of the problem. Moreover, by using causal diagrams and distinguishing between cause and result criteria, better decisions can be made. Based on the results, the highest row (R) sum indicates the criteria that strongly impact other CSFs. For example, management and leadership have the highest influence on other CSFs. Furthermore, the highest column (J) sum indicates the criteria with the greatest impact among the other CSFs. For example, audience reach has the greatest impact on the other CSFs **(Figure 3)**.

Competitiveness(C1), Technology(C2), Audience Reach(C3), Management and Leadership(C4), Human Resource(C5), Financial(C6), Internal Environment Factor(C7), External environment Factor(C8)

The criteria can be divided into two groups based on R-J, namely causes and effects. All criteria with positive R-J values belong to the cause group, directly impacting the others. All criteria with negative R-J values belong to the effect group, directly impacting the other criteria **(Table 6)**.

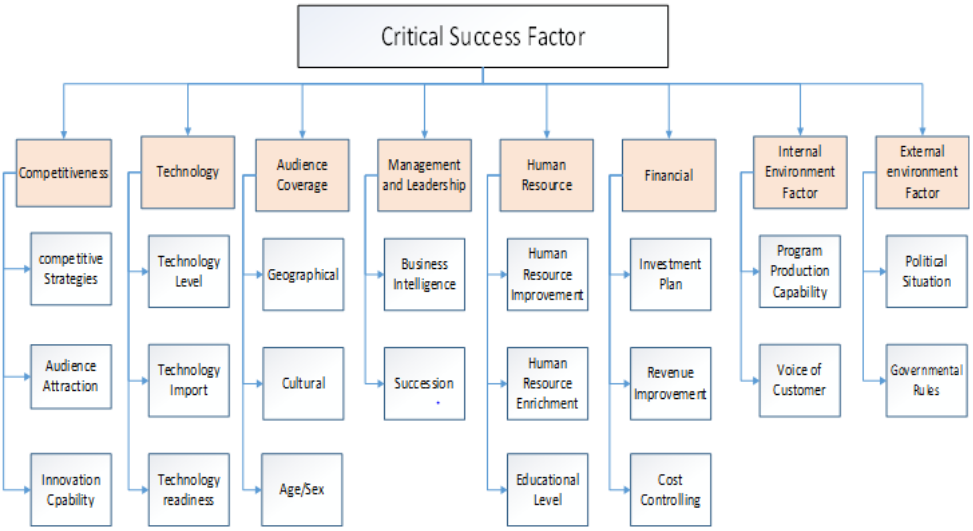

Figure 2 Critical success factors for Television broadcast.

Table 3. Defuzzified total relationship matrix.

	C1	C2	C3	C4	C5	C6	C7	C8
C1	0	2.3125	8.75	1.0938	1.0938	1.0938	1.0938	1.1875
C2	5.0469	0	8.75	2.625	4.875	1	2.5313	1.0938
C3	3.875	1.0938	0	2.5	1	1.0938	4.8906	1
C4	8.75	1.9375	6.9219	0	8.4844	6.6406	8.4688	2.1563
C5	3.0313	1	5.0156	1.7188	0	1	8.75	1
C6	8.75	8.75	1.3438	2.875	8.75	0	8.3281	1.2813
C7	8.6094	1.9688	8.4844	3	3.1563	2.75	0	1.0938
C8	2.6563	8.6094	2.3438	5.1563	2.7969	3.2656	2.5	0

Table 4. Decision-making matrix.

	C1	C2	C3	C4	C5	C6	C7
C1	0	0	1	0	0	0	0
C2	1	0	1	0	1	0	1
C3	1	0	0	0	0	0	1
C4	1	0	1	0	1	1	1
C5	1	0	1	0	0	0	1
C6	1	1	1	0	1	0	1
C7	1	0	1	0	0	0	0
C8	1	1	1	1	1	0	1

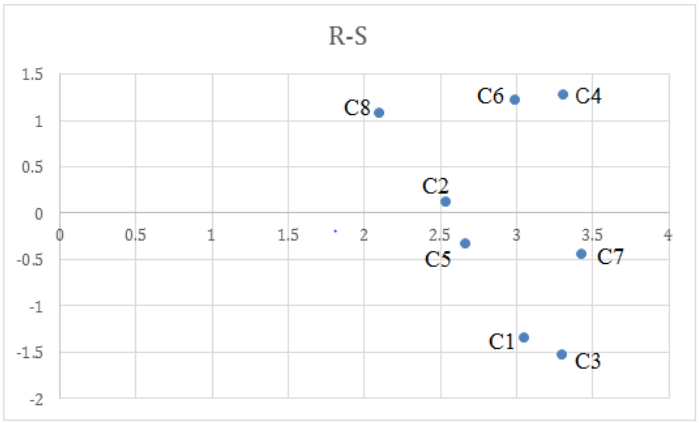

Figure 3 Cause-effect diagram of the study

Table 5. Prominence (R+J) and relation (R-J) of DEMATEL.

	C1	C2	C3	C4	C5	C6	C7	C8
R	0.853537	1.320867	0.882948	2.29333	1.165289	2.11071	1.48985	1.585312
J	2.203901	1.219198	2.421809	1.019808	1.496762	0.885732	1.943976	0.510656
R+J	3.057438	2.540065	3.304758	3.313137	2.662051	2.996442	3.433825	2.095968
R-J	-1.35036	0.101669	-1.53886	1.273522	-0.33147	1.224978	-0.45413	1.074656

Table 6. The ranks of CSFs in media industry

Criteria	R+S	Rank (1) *	R-S	Rank (2) *
C1	3.057438	4	-1.35036	7
C2	2.540065	7	0.101669	4
C3	3.304758	3	-1.53886	8
C4	3.313137	2	1.273522	1
C5	2.662051	6	-0.33147	5
C6	2.996442	5	1.224978	2
C7	3.433825	1	-0.45413	6
C8	2.095968	8	1.074656	3

The model of significant relationships is presented in a cause-effect diagram constructed according to campus. This model can be represented as a diagram where the values of R+J are arranged on the horizontal axis and the values of R-J on the vertical axis. The coordinate system determines the position and interaction of each factor with a point in the coordinates (R+J, R-J). Based on the diagram, it may be necessary to divide the results into two groups: Cause and effect factors.

Discussion

Causal factors

In order to evaluate the factors impacting television viewing in IRIB, it is crucial to focus on the causal factors that have a positive value of R-J. C8, C2, C6, and C4 belong to the cause group according to the cause-effect diagram. C4 (management and leadership) has the highest R-J value (1.27) among all factors in the cause group. In addition, C4 has a high R-value (2.29) among the causal factors in terms of the degree of influence. C4 (management and leadership) also has the highest R-value (2.29) in terms of the degree of influence. This shows that C4 has a significant influence on the other factors and, therefore, greatly impacts the whole process. After that, C6 (Finance) has the second-highest value (1.22) and thus is the second most important causal factor among all factors.

Effect factors

Effect factors C5, C1, C3, and C7 have negative R-J values and thus are effect factors. According to the cause-effect diagram, C7 (internal environmental factor) and C3 (audience reach) have the highest R+J value (3.43, 3.30) among the effect factors. Moreover, the degree of influence (J) values of C3 and C1 (2.42, 2.20) are high for the whole process. C7 and C3 also have quite high R+J values (3.43 and 3.30) in the process. On the other hand, the R-J values of C7 (internal environmental factor) and C3 (audience reach) are very low.

When Ri-Ji has a negative value, and the values of Ri+Ji are very small, it means that variable i is more independent, and fewer factors affect the variable; thus, human resources are more independent. When Ri-Ji has a positive value, and the values of Ri+Ji are very small, it means that variable i is also independent and can influence some other variables; therefore, technology and external environment factors are also independent.

According to the DEMATEL technique, a negative value of Ri-Ji and a very large value of Ri+Ji means that the variable i is the main problem to be solved but does not directly improve the variable. Therefore, internal environment factors, competitiveness, and audience reach are the main problems to be solved. When Ri-Ji are positive values, and Ri+Ji are large values, it means that variable i is the driving factor in solving the core problem and should be listed as a priority. Therefore, management and leadership are driving factors for solving the core problem and should be listed as a priority.

The three most important criteria are internal environmental factors, management and leadership, or audience reach. As shown in the cause-effect diagram, the internal environmental factors were identified as the most important CSF vis-a-vis the others. On the other hand, the external environmental factors were identified as the least important of the eight criteria. Audience reach has the greatest influence on the other factors. According to the results of the research, the experts suggested preventive measures against critical factors.

According to them, decision-makers should focus on factors that are classified as causal factors and can positively impact the effect factors. Moreover, more attention should be paid to the factors that have higher priority and greater influence on other factors.

A review of the data collected has demonstrated that leadership has an essential effect on all other factors within an organization. Through our findings, we have discovered flaws within managerial leadership in the IRIB organization within the following areas: Planning, organizing, staffing, leading/directing, controlling/supervising, and inspiring. It is essential that these flaws be addressed as soon as possible. The IRIB organization cannot hope to be successful in the future if these deficiencies are not corrected. Managers should develop plans to align specific organizational goals with the organization's mission. They should implement plans in a way that makes the best use of available resources to achieve desired results. Managers should analyze the workforce to better match staffing needs and ensure they are prepared to meet the organization's immediate and long-term

goals. Improving the quality of human resources will increase the company's ability to innovate and strengthen its competitive advantage.

Our findings also show that the financial independence of the IRIB organization has been compromised by political currents, with many viewing the station as a mouthpiece for the government. Iran's domination of the station has led to censorship which stifles free debate and allows the authorities to ban opposition parties and control content, wreaking havoc on media freedom. This state of affairs is particularly worrying given that IRIB is the only broadcaster in Iran. It is the main source of information for the Iranian public, and there are no independent or professional media to challenge it. The media informs society about matters of public interest and creates an important platform for public debate, scrutiny, and reflection. The lack of both transparency and accountability in IRIB causes audiences to turn their backs on the government-controlled news media and instead seek reliable information elsewhere. The lack of access to free expression in IRIB has resulted in reduced audiences, leading to a decline in advertising revenue and profits, thus further reducing support from corporate investors. IRIB's reliance on the state budget perpetuates its repetitive cycle of stagnation.

The best way to solve a company's financial problems is usually to increase revenue, decrease expenses, or do a combination of both. When a broadcaster invests in research and development, it is able to identify the obstacles that hinder the transmission of its radio and television images to certain regions and consequently take appropriate measures to remove those obstacles. This investment can improve the level of technology, innovation and business intelligence. This increases the competitive advantage of companies and promotes profitability [74-77].

Conclusion

The objective of this study was to identify effective CSFs for the proper development and management of television broadcasting in IRIB. Based on a combination of the Delphi and fuzzy DEMATEL techniques, it can be concluded that competitiveness, technology, audience reach, management and leadership, human resources, finance, internal environmental factors and external environmental factors are important CSFs for IRIB. In other words, based on real data, these factors are all important for IRIB's development and survival in the international media landscape. The most important factors were found to be internal environmental factors, management and leadership, and audience reach. Some limitations of the proposed approach are highlighted for further studies, considering that each country has its own processes and strategies for broadcast media management, which depend on organizational techniques and social, economic and political context. In this study, we have shown a static representation of the interactions between CSFs so that key elements for the development of IRIB can be identified. The relationships among CSFs may change dynamically over time, so it is necessary to perform a what-if analysis based on the dynamic behavior of CSFs. The accuracy of the proposed fuzzy DEMATEL depends heavily on expert opinions. Note that experts will view IRIB from their own perspective and will not all view it in the same way. The experimental data set inevitably contains biases, so issues such as selecting panelists, providing feedback, and constructing IRIB are critical factors. In addition, other multicriteria decision-making techniques such as TOPSIS and ANP could be used so that the results could be compared. It is also recommended that statistical methods be used to prioritize criteria and expert opinion be given weight.

Appendix

Competitiveness refers to the ability of an organization, company, or government to operate, compete, advance, and act according to the principles of efficiency and effectiveness in order to outperform rivals. All techniques, skills, methods, and processes used in producing goods or services or in the achievement of goals are referred to as technology. The percentage of an audience (individuals or households) that has the opportunity to view a content (program or advertisement) distributed through a medium is called audience (media) reach. Human resources refer to the people who make up the workforce of an organization, business sector, industry, or economy. Financial factors refer to money or how money is managed. Internal environmental factors can be described as the tangible and intangible factors which are within the control of the organization. Internal factors are further divided into weaknesses and strengths. External environmental factors are factors that exist outside of an organization's internal environment and can affect how the organization operates. These external influences can either support or hinder the company's current practices. Education refers to a process that facilitates learning or the acquisition of knowledge, skills, and personal development. Business intelligence (BI) is a decision-making process supported by integrating and analyzing a company's data resources. Revenue is the income generated by a company by selling a product or service to its customers. Innovation capability is the ability of a company to identify new ideas and develop them into new/improved products, services, or processes that benefit the company. Investment is the use of an asset to increase its value over time. Program production capacity refers to the number of programs, products, or services a company can produce with its current resources. Cost control is the method of identifying and managing company expenditures and financial data to review and reduce them where possible. Audience expectation is anything an audience expects from a program, product, service, or organization.

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