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Compilation and explanation of the leadership brand model in the agricultural industry, the citrus product of the south of the country

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Abstract

The purpose of the current research was to develop an organizational leadership brand model and to investigate and rank the factors affecting the leadership brand in agricultural products (Case Study: Citrus of Hormozgan Province). This research consists of two main parts: in the first part, in order to select the variables affecting the leadership brand in the field of agriculture, the theoretical foundations of research and library studies have been used and after reviewing the articles published in domestic and foreign scientific sites, four elements of personal characteristics of leadership, cultural elements, brand elements and agricultural infrastructure elements were identified as variables affecting the leadership brand in the field of agriculture, Then, using group decision-making technique in three stages, four elements with 80 indicators were identified as factors affecting the leadership brand in the field of agriculture. The final model was constructed for modeling using the technique of the structural equation. The research plan was a combination that was obtained through qualitative strategies (foundation data) and interviews with 35 managers and experts of the Research Department of the Ministry of Agriculture, the Farmer's House and the Chamber of Commerce, and then, through quantitative strategy, the research hypotheses of the research were calculated as a good test for fitting the model. In the qualitative section, after purposeful sampling, data collection tools were used. In the quantitative part, a questionnaire was distributed among 315 managers and experts in order to investigate the viewpoints of managers and experts of the mentioned organizations and to analyze the data, structural equations model with the PLS approach was used. Four general elements of leadership brand variables including personal elements and characteristics, cultural elements, brand elements and agricultural infrastructure elements were identified and categorized as variables affecting the leadership brand in the field of agriculture. The results of quantitative sector findings showed that each of the four elements of leadership brand has a positive effect on leadership brand in the field of agriculture.

Keywords: Leadership brand, Personality traits, Cultural elements, Brand elements, Agriculture
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1 Introduction

Agriculture is an important part of the economy, the welfare of the whole country largely depends on its performance. Therefore, leadership in the agricultural sector is a vital and global necessity. Clearly, the continued need for productive agriculture and effective agricultural leaders to address some of the fundamental issues facing a growing global population is undeniable. By creating a distinctive leadership culture in the entire organization and aligning with business strategies, the leadership brand can bring the desired results to the organization that the organization is trying to achieve [1]. After apples, the citrus production industry has taken the second place in the world and plays an important role in the production of wealth and economic development in many countries of the world. The production of this product in our country also has a special place, and in some provinces of the country, a significant share of the people's economy depends on the production of this product and its marketing and sale. Agricultural organizations therefore need to identify and implement better-managed brand leadership as well as innovative ways to create, deliver and capture value in this rapidly changing agricultural environment. So far, many researches have explained leadership brand models separately, but no research has comprehensively investigated the different dimensions of leadership brand. Therefore, compiling and explaining the dimensions and criteria of the leadership brand in the agricultural industry, especially in the field of agricultural products (compounds in the south of the country), is considered one of the most important topics of this research.

1.1 Statement of the research problem

Considering Iran's territorial talents, agricultural products have long been assigned a special place in the country's export boom. In this regard, one of the most important aspects of export, which has not been sufficiently considered in our country, is the topic of leadership brand and the use of its well-known strategies, especially in the case of agricultural products and transformation products. Not having an efficient brand in the citrus industry is one of the reasons for failure in export. The export priorities in the global market have changed compared to the past, it is not possible to look for a sales market with traditional trade [10]. The basic problem and gap in research regarding the issue of brand leadership in agricultural industries is the lack of understanding of the comprehensive model and understanding of the different dimensions of this issue in the citrus products of the south of the country. The leadership brand is part of every system and organization's line-up, and considering that so far, many researches have addressed the topics of brand and leadership inside and outside, but no research has comprehensively and fully examined the various elements of the leadership brand in the agricultural industry. has not been investigated, therefore, the current research seeks to investigate this issue and fill the existing gap. The present study examines the brand of leadership in the field of agriculture from four dimensions of elements and personal characteristics of leadership (including: skill in formulating strategy, executive skill, talent management skill and personal skills); Cultural elements (including: values, leader evaluation systems and policies and manpower needs); Brand elements (including: brand strength, brand symbol and brand identity) and agricultural infrastructure elements (including: knowledge management, packaging and sorting, investment in distribution network, investment in advertising and technology and mechanization); studies. In fact, every research begins with the intention of answering and finding a suitable solution for a main problem, and in this research we are looking for an answer to the question: "What is the leadership brand model in the agricultural industry in general and the citrus products of the south of the country?".

1.2 Research questions and assumptions

The current research is of exploratory and modeling type and seeks to compile and explain the leadership brand model in the agricultural industry in general and citrus products in the south of the country, so the main questions of the research are stated as follows:

1. What are the most important factors promoting leadership brand in the field of citrus products in Hormozgan province?
2. What is the intensity and impact of each of the leadership brand factors in citrus products of Hormozgan province?
3. What is the optimal leadership brand model in the field of citrus products in Hormozgan province?

The main assumptions of the research based on the output of the model obtained from the Delphi section are as follows:

1. Personal elements and characteristics have a positive effect on the leadership brand in citrus products of Hormozgan province.

2. Cultural elements have a positive effect on the leadership brand in citrus products of Hormozgan province.
3. Brand elements have a positive effect on the leadership brand in citrus products of Hormozgan province.
4. Agricultural infrastructural elements have a positive effect on the leadership brand in citrus products of Hormozgan province.

2 Fuzzy Delphi technique

In the first step, 73 indicators were extracted from the subject literature by reviewing the subject literature and research conducted [2]. The fuzzy Delphi approach was used to screen the indicators and identify the final indicators. Experts' views on the importance of indicators have been collected. In this study, triangular fuzzy numbers have been used to fuzzify the experts' point of view.

Table 1: The spectrum of nine fuzzy degrees for the evaluation of indicators

Definitive equivalent	**Linguistic variable**	**Fuzzy number scale**
1	very unimportant	(1,1,1)
2	Very unimportant to unimportant	(1,2,3)
3	unimportant	(2,3,4)
4	Unimportant to medium importance	(3,4,5)
5	medium	(4,5,6)
6	Medium to important	(5,6,7)
7	Important	(6,7,8)
8	Important to very important	(7,8,9)
9	very important	(9,9,8)

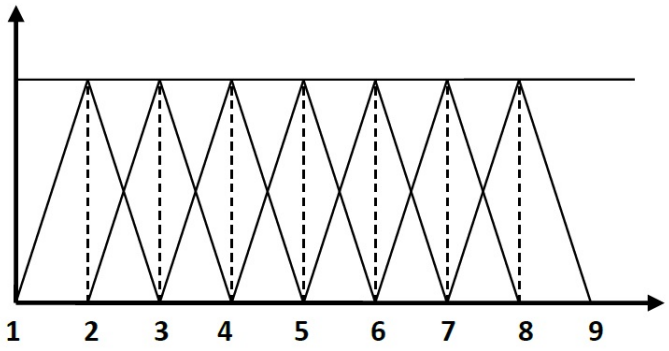

Figure 1: Valuation of indicators relative to each other using triangular fuzzy numbers

In the next step, the fuzzy average of the fuzzy averages of people's scores should be calculated. To calculate the average of the comments of n respondents, the fuzzy average will be calculated as follows:

Each triangular fuzzy number for each index is given as a sub-display

$$\begin{aligned} \tau_j &= (L_j, M_j, U_j) \\ L_j &= \min(X_{ij}) \\ M_j &= \sqrt[n]{\prod_{i=1}^{n} X_{ij}} \\ U_j &= \max(X_{ij}) \end{aligned} \tag{2.1}$$

The index i refers to the expert. So that

τ_j : Fuzzy average of the j-th criterion

X_{ij} : The i-th expert evaluation value of the j-th criterion

L_j : The minimum amount of evaluations for the j-th criterion

M_j : The geometric mean of the experts' assessment of the performance of the j-th criterion

U_j : The maximum amount of evaluations for the j-th criterion [6, 17].

In fact, these aggregation methods are experimental methods presented by different researchers. For example, a conventional method for aggregating a set of triangular fuzzy numbers is considered to be minimum l, average m, and maximum u [4].

$$F_{AGR} = \left(\min\{l\}, \left\{\frac{\sum m}{n}\right\}, \max\{u\}\right) \tag{2.2}$$

In this study, we have used the fuzzy average method. The fuzzy average of n triangular fuzzy numbers will be calculated with equation (2.3):

$$\widetilde{F}_{AVE} = (L, M, U) = \frac{\sum l_i^k}{n}, \frac{\sum m_l^k}{n}, \frac{\sum u_u^l}{n} \tag{2.3}$$

In this regard, the triangular fuzzy number $\widetilde{F}_i = \left(l_i^k, m_i^k, u_i^k\right)$ Fuzzy equivalent is the opinion of the kth expert about the ith criterion. The fuzzy average of the opinion of the expert panel for each of the research indicators is given in the table.

De-fuzzification of values

For defuzzification, the surface center method is used as follows [8, 15]:

$$DF_{ij} = \frac{[(u_{ij} - l_{ij}) + (m_{ij} - l_{ij})]}{3} + l_{ij} \tag{2.4}$$

Round one: The de-fuzzified value greater than 0.7 is accepted, and any index with a score lower than 0.7 is rejected [17]. All items scored more than 7 and remained in the model. At this stage, the indicators of: achievement of results, leadership style, integrity, graphic or visual symbol, sharing of emotional aspects, quick brand identification, direct marketing, indirect marketing were added to the research indicators. The manpower map drawing index was also removed due to overlapping.

Round Two: The fuzzy Delphi analysis continued for the remaining indicators in the second round. Based on the results, it has been determined that all cases have scored more than 0.7.

Round three: Fuzzy Delphi analysis continued for the remaining indicators in the third round. Based on the results, it has been determined that all cases have scored more than 0.7. has changed Next, in order to ensure the final agreement and completion of Delphi, I will compare the diffusion values of round 3 and 2. If the value difference is less than 0.8, it is reported. Delphi is complete.

Table 2: The distance between the final value of the second round and the third round

Indicators	**symbol**	**The result of round 2**	**The result of round 3**	**difference**	**Result**
Future perspective	C1	7.97	7.67	−0.3	Agreement
Invest in the business process according to the value proposition	C2	7.39	7.94	0.55	Agreement
Focus on strategy	C3	7.64	7.69	0.05	Agreement
Create a leadership statement	C4	7.72	7.97	0.25	Agreement
Attention to the mission of the organization	C5	8.08	7.75	−0.33	Agreement
To be an inspiration	C6	7.97	7.69	−0.28	Agreement
energizing	C7	7.64	7.84	0.2	Agreement
Employee participation in strategy development	C8	7.67	8.11	0.44	Agreement
team work	C9	7.78	7.97	0.19	Agreement
Achieving results	C10	7.97	7.89	−0.08	Agreement
method of leadership	C11	7.75	7.64	−0.11	Agreement

Organizational competence	C12	8.11	8.08	−0.03	Agreement
Response to change	C13	7.55	8.03	0.48	Agreement
Creating organizational systems	C14	7.86	7.97	0.11	Agreement
Customer orientation	C15	7.34	7.81	0.47	Agreement
Maintain market position	C16	7.14	7.72	0.58	Agreement
Creating new markets	C17	7.47	8.03	0.56	Agreement
Innovation and innovation leadership	C18	7.84	8.00	0.16	Agreement
Distinct value proposition	C19	7.34	8.00	0.66	Agreement
Responsibility at work	C20	7.89	7.89	0	Agreement
Expertise and technical skills	C21	7.59	7.64	0.05	Agreement
Empowering others	C22	7.58	8.11	0.53	Agreement
Ability to influence others	C23	7.84	7.69	−0.15	Agreement
innovative management practices	C24	7.97	8.11	0.14	Agreement
Creating a positive work environment	C25	7.97	7.64	−0.33	Agreement
Create a suitable environment for discussion and negotiation	C26	8.22	8.14	−0.08	Agreement
Strengthening competencies	C27	8.22	7.75	−0.47	Agreement
Human capital development	C28	7.89	7.75	−0.14	Agreement
Change in the level of knowledge and skills of employees	C29	7.97	7.61	−0.36	Agreement
Employee productivity	C30	8.16	7.89	−0.27	Agreement
Creating a brand for the organization and its employees	C31	7.97	7.61	−0.36	Agreement
Helping employees manage career paths	C32	7.64	7.84	0.2	Agreement
Finding the talents of the next generation and nurturing them	C33	8.03	7.78	−0.25	Agreement
Charismatic personality	C34	8.08	8.14	0.06	Agreement
Individual reputation	C35	7.72	8.03	0.31	Agreement
Skill	C36	7.5	7.86	0.36	Agreement
Ability	C37	7.36	7.84	0.48	Agreement
motivation	C38	7.93	8.00	0.07	Agreement
Emotional and analytical intelligence	C39	7.44	7.75	0.31	Agreement
Bold decision	C40	7.72	8.00	0.28	Agreement
stress tolerance	C41	8.28	8.42	0.14	Agreement
Having energy and enthusiasm	C42	7.53	8.16	0.53	Agreement
Honesty	C43	7.47	8.22	0.75	Agreement
Attention to human resources	C44	7.53	7.67	0.14	Agreement
Attention to organizational values	C45	7.5	8.03	0.53	Agreement
The culture of creating appropriate communication	C46	7.25	8.06	0.81	Agreement
Growth of values	C47	7.61	8.11	0.4	Agreement
Brand and culture alignment with values	C48	7.94	7.78	−0.16	Agreement
Evaluating leaders based on missions	C49	7.44	7.59	0.15	Agreement
Evaluating leaders based on achievement of results	C50	7.42	7.78	0.36	Agreement
Evaluating leaders based on fostering a culture of success	C51	7.61	7.69	0.08	Agreement
Reward system	C52	7.22	7.72	0.5	Agreement
Creating a learning culture	C53	7.47	8.03	0.56	Agreement
Support creativity	C54	7.67	7.92	0.25	Agreement
Cultural educational programs	C55	7.66	8.31	0.65	Agreement
Product and service identification	C56	7.42	7.89	0.47	Agreement
Buyer's ability to recall the product	C57	7.66	7.67	0.01	Agreement
Product awareness	C58	7.03	7.42	0.39	Agreement
A graphic or pictorial symbol	C59	7.44	7.89	0.25	Agreement
Sharing emotional aspects	C60	7.72	7.97	0.25	Agreement
Quick brand recognition	C61	7.28	7.97	0.69	Agreement
Consumer overlap with brand image	C62	7.86	8.06	0.21	Agreement
Creating communication through user images	C63	7.53	7.94	0.11	Agreement
Separation of consumers	C64	7.3	7.69	0.39	Agreement

Social identity indicator	C65	7.31	7.89	0.58	Agreement
The feeling of oneness of people with a brand	C66	7.34	8.06	0.72	Agreement
Knowledge sharing	C67	7.44	8.16	0.72	Agreement
Development of collaborative knowledge space	C68	7.06	7.81	0.75	Agreement
Development of learning	C69	7.58	7.44	−0.14	Agreement
Improvement in delivery of goods	C70	7.78	8.39	0.61	Agreement
Improved storage process	C71	8.17	8.11	−0.06	Agreement
waste reduction	C72	7.14	7.59	0.45	Agreement
Improving production infrastructure	C73	7.17	7.47	0.3	Agreement
Participation of external resources	C74	7.06	8.25	0.59	Agreement
Supply Chain Management	C75	7.69	8.00	−0.32	Agreement
Direct marketing	C76	7.42	7.69	0.27	Agreement
Indirect marketing	C77	8.2	7.53	−0.67	Agreement
Reduce production costs	C78	7.19	7.78	0.59	Agreement
Increase Productivity	C79	7.44	7.75	0.31	Agreement
increase production	C80	7.64	7.80	0.16	Agreement

The research components were named with a numerical index so that they can be easily tracked and studied during the research.

2.1 The end of the Delphi technique rounds

In the third round, no questions were asked, which is a sign for the end of the Delphi rounds. In general, one approach to the end of the Delphi is to compare the average scores of the second and third round questions. If the difference between the two steps is smaller than the very low threshold (0.8), then the survey process is stopped [5]. According to the results of the experts' opinion and the three Delphi rounds, the table of coefficients and the ranking of the main variables of the leadership brand in agriculture are presented in the following table:

Table 3: Path coefficients and ranking of the main elements of the leadership brand

The main elements	**Path coefficients**	**rank**
Brand Elements → Brand Leadership	0.171	4
Infrastructural elements of agriculture → leadership brand	0.398	1
Cultural elements → leadership brand	0.245	2
Leadership Personal Characteristics → Leadership Brand	0.174	3

Table 4: Path coefficient and ranking of leadership brand indicators

	Path coefficient	**rank**
Values → brand leadership	0.109	3
Packaging and sorting → brand leadership	0.079	11
Invest in advertising → brand leadership	0.066	13
Investment in distribution network → brand leadership	0.111	2
HR Policies and Needs → Brand Leadership	0.052	14
Leadership evaluation systems → leadership brand	0.103	6
Technology and mechanization → brand leadership	0.086	9
Brand strength → brand leadership	0.105	5
Knowledge Management → Brand Leadership	0.094	7
Executive skill → leadership brand	0.112	1
Skill in formulating strategy → brand leadership	0.08	10
Talent Management Skills → Brand Leadership	0.069	12
Personal Skills → Leadership Brand	0.092	8
Brand Symbol → Brand Leadership	0.106	4
Brand Identity → Brand Leadership	0.052	14

3 Test of structural models

In this part, the general structure of the conceptual model of the research is tested, to determine whether the theoretical relationships between the variables that were established by the researcher at the stage of developing the conceptual framework were confirmed by the data or not. In relation to this issue, three issues are considered:

The signs (positive and negative) of the parameters related to the communication paths between the latent variables show whether the calculated parameters have confirmed the hypothesized relationships.

The value of the estimated parameters; It shows how strong the predicted relationships are. Here, the estimated parameters must be significant. That is, the absolute value of t-value must be greater than 1.96.

The multiple correlation square shows the amount of variance of each internal (dependent) latent variable that is explained by the external (independent) latent variables. The higher the value of multiple correlation, the higher the explanatory power of the variance.

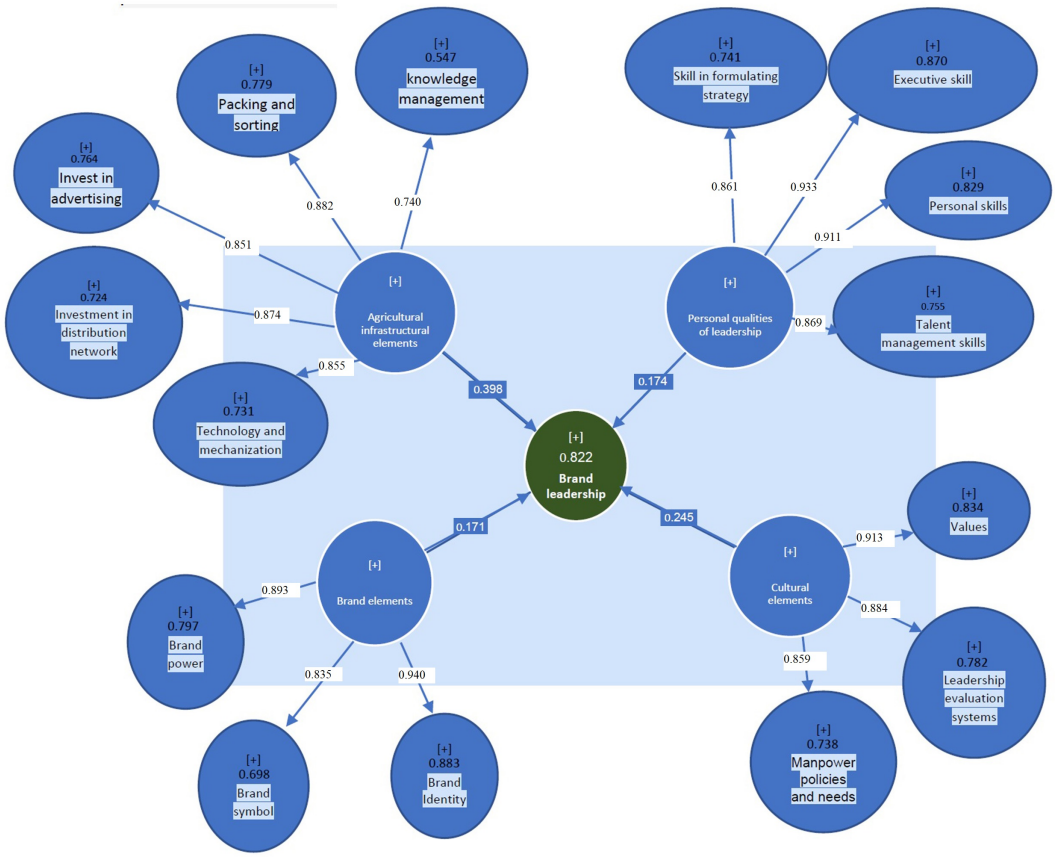

Figure 2: Diagram of path coefficients

Figure 2, titled the chart of path coefficients, examines the path coefficient of the variables and the effect of each of the independent variables on the dependent variable. The value of the path coefficient is in the range of -1 and 1. The more positive this value is, the greater the influence of the independent variable on the dependent variable.

The coefficient of determination shows the amount of explanation of the variance of the dependent variable by the independent variables. One of the problems of the coefficient of determination is that it overestimates the success rate of the model and takes less into account the number of independent variables and the sample size, so some researchers prefer to use another index called the adjusted coefficient of determination. The results of the coefficients of determination are given in Table 5.

Table 5: Coefficient of determination

	The coefficient of determination	**Adjusted coefficient of determination**
Leadership brand	0.822	0.820

The adjusted determination coefficient of the leadership brand is 0.820, which indicates that 82% of the leadership brand changes are influenced by the variables studied in this research and the rest are factors that are not considered in the model.

Another criterion is to examine the structural model of the effect size. Cohen [7] values of 0.02; 0.15 and more than 0.35 have been evaluated as weak, medium and strong values, respectively.

Table 6: Coefficient of determination

	Leadership brand
Brand elements	0.045
Agricultural infrastructural elements	0.216
Cultural elements	0.094
Personal qualities of leadership	0.048

The results of examining the effect size values in Table 6 showed that this value was reported in the weak to strong range. The highest value related to the size of the effect of organizational culture on knowledge sharing and the lowest value related to the size of the effect of organizational culture on competitive advantage were reported.

Significance of path coefficients (beta): One of the indicators of confirming relationships in the structural model is the significance of path coefficients. The significance of the coefficients of the complementary path is the magnitude and direction of the beta coefficient of the model. If the obtained value is above the minimum statistic at the confidence level, that relationship or hypothesis is confirmed. At the significance level of 90%, 95%, and 99%, this value is compared with the minimum t statistic of 1.64, 1.96, and 2.58, respectively.

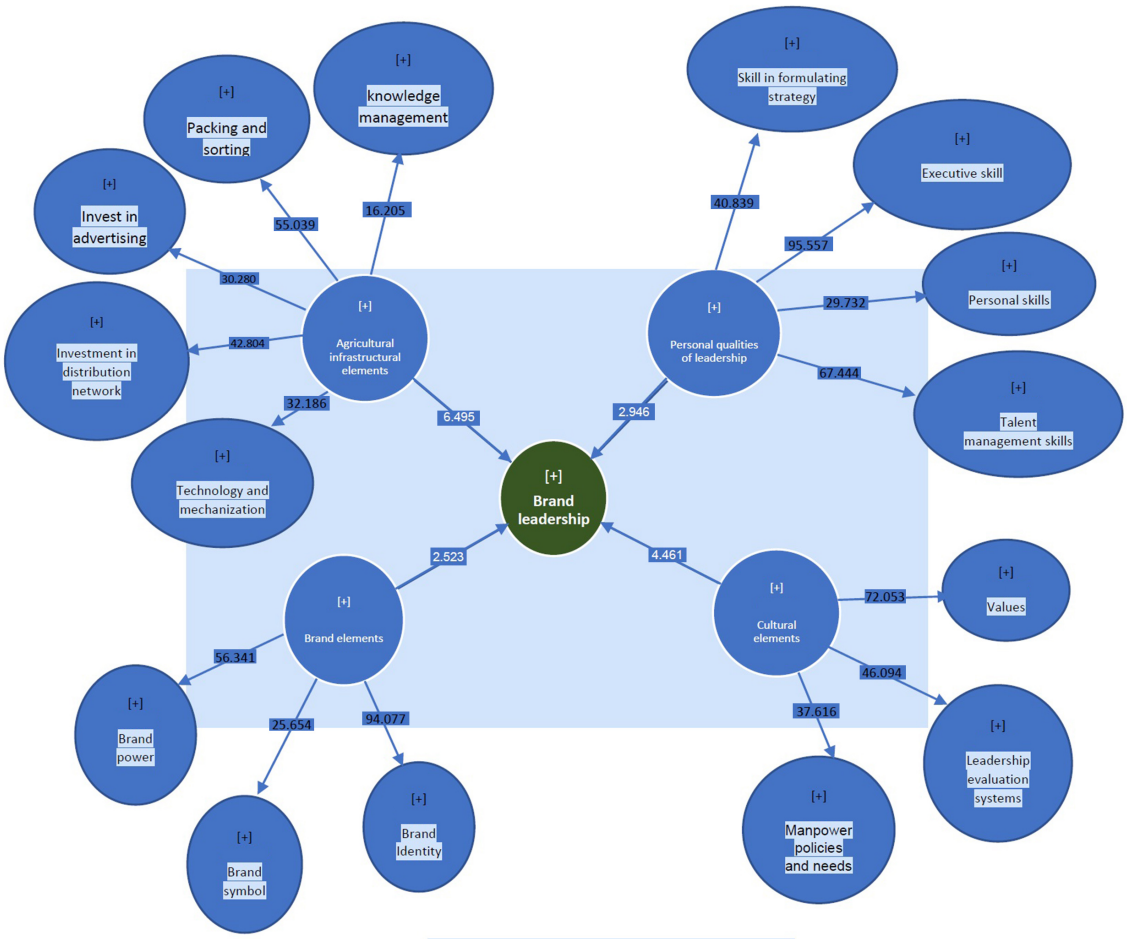

Figure 3: Significance of path coefficients

Figure 3 shows the significance of the path coefficients. The results obtained from this graph are explained in the

hypothesis results.

The predictive power of the model or shared redundancy is another criterion to check the structural model. The purpose of this index is to check the ability of the structural model to predict in an eye-opening way. The most famous and well-known criterion for measuring this ability is the Q2 index, based on this criterion, the model must predict the indicators of the reflective endogenous variables. The values obtained from this test are positive, which indicates the appropriate quality of the structural model [11]. Regarding the predictive power of the model regarding endogenous latent variables, three values of 0.02, 0.15, and 0.35 have been introduced as weak, medium, and strong values for this index, respectively [11].

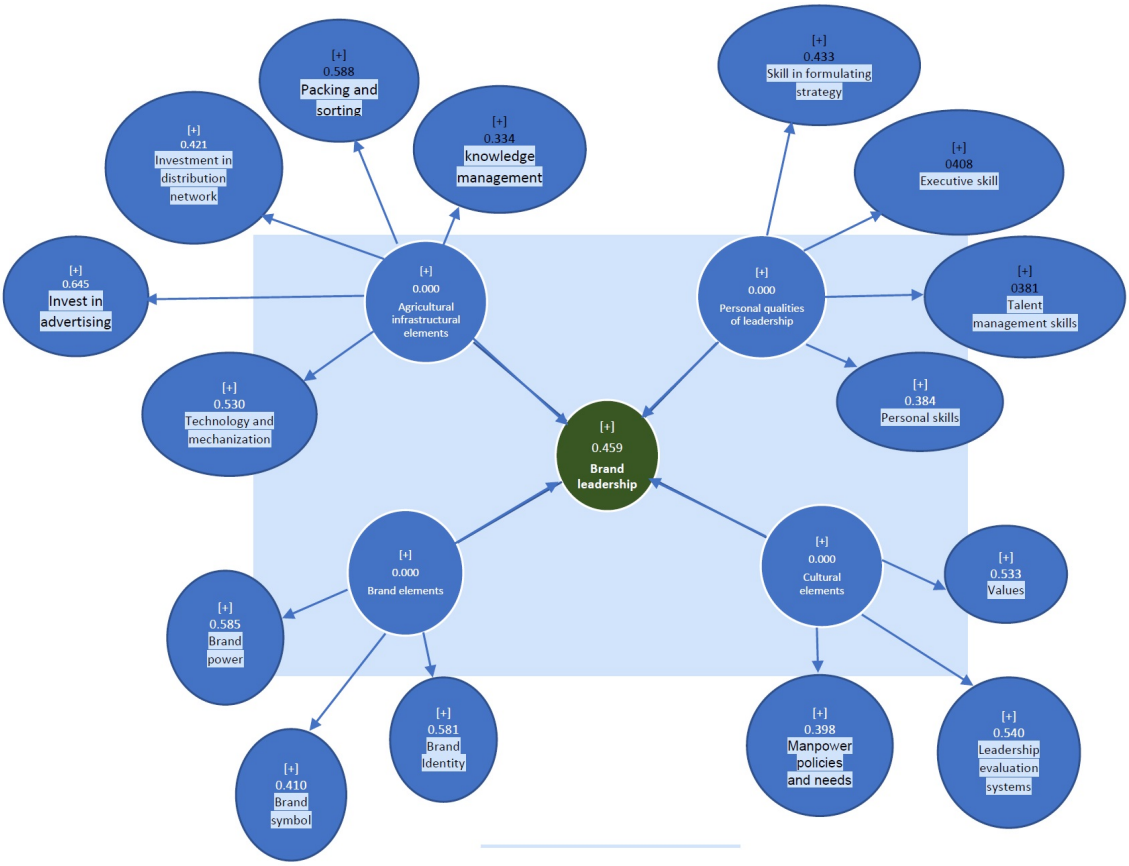

Figure 4: Redundancy sharing

Table 7: Predictive power of the model

	SSO	**SSE**	$Q^2 = 1 - SSE/SSO$
Brand leadership	1,600.000	865.772	0.459
Brand elements	4,400.000	4,400.000	
Agricultural infrastructural elements	5,600.000	5,600.000	
Cultural elements	4,800.000	4,800.000	
Personal qualities of leadership	17,200.000	17,200.000	

The results of Table 7 showed that the predictive power of the model was reported to be strong.

3.1 General fit of the structural equation model

The models that are analyzed with a variance-oriented approach through variance-oriented software such as Smart PLS do not have a general index to look at the model at once. That is, there is no index to measure the whole model similar to the covariance-based approach. But in various researches in this field, it was suggested that an index called GOF was proposed by Tenenhaus et al. [14]. This index considers both structural and measurement models simultaneously and tests their quality. This index is manually calculated as average R2 and average shared values.

$$GOF = \sqrt{\overline{communalities} \times \overline{R^2}}$$

This index is the square of the two average values of common values and the coefficient of determination. Since this value is dependent on the two mentioned indices, the limits of this index are between zero and one, and Wetzels et al. [16] three values of 0.01; 0.25 and 0.36 respectively as weak values; Moderate and strong were introduced for GOF [14].

Table 8: Results of fitting the general model

	The coefficient of determination	√The coefficient of determination	Common values	√Common values	GOF
Brand elements			0.568		
Agricultural infrastructural elements		0.822	0.521	0.535	0.439
Cultural elements			0.521		
Personal qualities of leadership			0.530		
Brand leadership	0.822				
Standardized Root Mean Square Residual (SRMR)					0.075

According to the value obtained for GOF, it is 0.439, which is close to the value suggested by Wetzles et al. [16], i.e. 0.36, which shows the strength of the model, and therefore, the appropriate fit of the overall model is confirmed.

The optimal value for the square root index of the standardized residual mean square is at most 0.08. The results obtained from this index showed that its value was reported to be equal to 0.075, which is a favorable value, and therefore the appropriate fit of the overall model is confirmed.

4 The final research model

In order to identify the variables influencing the leadership brand in the field of agriculture, four variables were identified after conducting library studies and obtaining experts' opinions [3, 9, 12, 13]. Four variables that had a great impact on the leadership brand in the field of agriculture were approved by the experts after conducting three rounds of Delphi. In the second round of Delphi, the variable "manpower map drawing" was removed due to overlapping with other variables. In the dimension of executive skill, two indicators of "realization of results" and "leadership style" were added. In the dimension of personal skills, the "correction" component was added. Next, the index brand elements of "brand symbol" were added, which consisted of three components: "graphic or visual symbol", "shared emotional aspects" and "quick brand recognition". Next, the agricultural infrastructural elements of the index "Investment in Advertising" were added with two components "Direct Marketing" and "Indirect Marketing". The results of the findings of the fourth chapter show the high consensus of the members on the identified factors and components in the third round.

According to the first question of the research on determining the most important factors affecting the leadership brand in the field of citrus products of Hormozgan province, the results showed that the agricultural infrastructure elements with the first rank and the most points were the most important factors in the prioritization of Delphi group members. After that, cultural elements, elements of personal characteristics of leadership and brand elements have been the attention of experts in the proposed model in the second to fourth ranks respectively.

According to the second question of the research about the intensity and impact of each of the leading brand factors in the citrus products of Hormozgan province, the results of the findings showed that the executive skill is ranked first, followed by the factors of investment in the distribution network, value , brand symbol, brand power, leader evaluation systems, knowledge management, personal skills, technology and mechanization, strategy development skills, packaging and sorting, talent management skills, investment in advertising, brand identity and policies and workforce needs which are humans.

The findings of the structural model showed that all variables have a positive and significant effect on the leadership brand in agriculture. Thus, by designing the effective factors on the leadership brand and with the help of Delphi method, the research model has been designed as follows. The final conceptual model of the current research after the conducted investigations and the three-round Delphi test is shown in Figure 5.

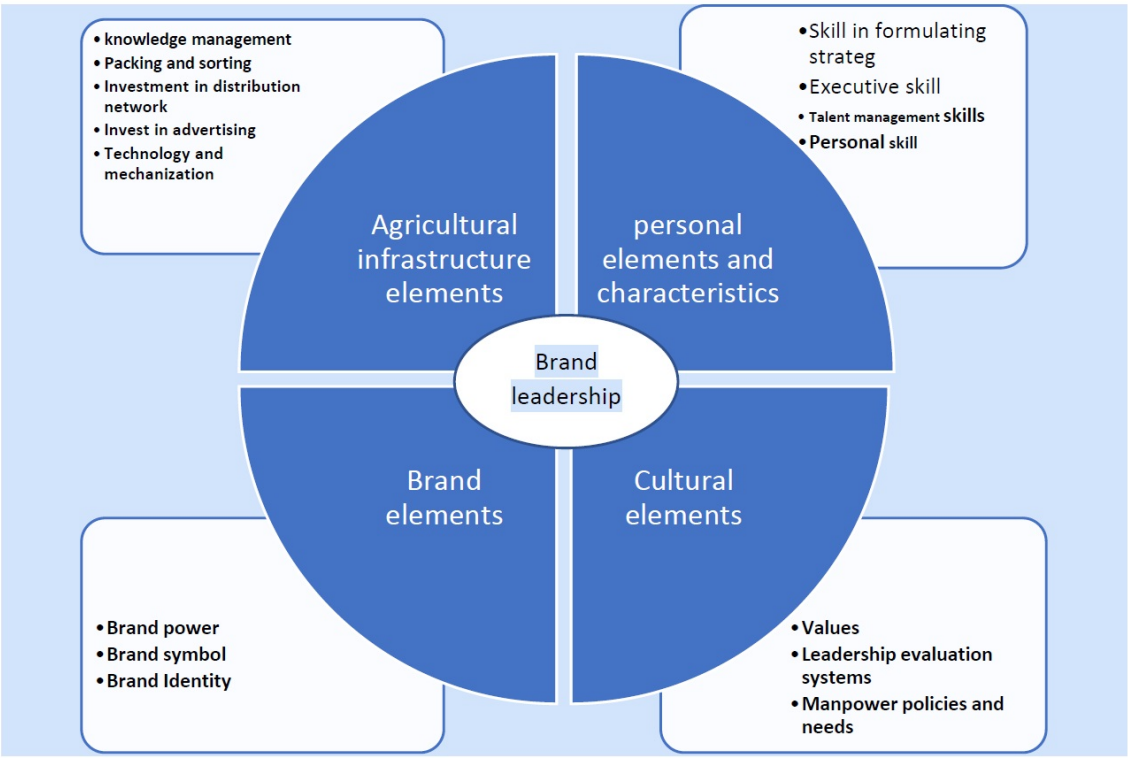

Figure 5: The final conceptual model

5 Hypothesis test results

1. The personal characteristics of the leader have an effect on the brand of the leader in the agricultural industry, the citrus product of the south of the country.
   The results of the test of this hypothesis showed that the value of the coefficient of the path of the personal characteristics of the leadership on the leadership brand is equal to 0.174. which is somewhat positive. The t-statistic of this relationship was reported as significant at the 95% confidence level [P-Value ≤ 0.05]. Based on this, the research hypothesis is confirmed. In this sense, the personal characteristics of the leader have a positive and significant effect on the brand of the leader in the agricultural industry, the citrus product of the south of the country.

Table 9: The results of the hypothesis test 1

Hypothesis	Path coefficient	t statistic	P Values	Result
Leadership Personal Characteristics → Leadership Brand	0.174	2.946	0.003	confirmation

2. Cultural elements have an effect on the leadership brand in the agricultural industry, the citrus product of the south of the country.
   The results of this hypothesis test showed that the value of the path coefficient of cultural elements on leadership brand is equal to 0.245. which is somewhat positive. The t-statistic of this relationship was reported as significant at the 95% confidence level [P-Value ≤ 0.05]. Based on this, the research hypothesis is confirmed. In this sense, cultural elements have a positive and significant effect on the leadership brand in the agricultural industry, the citrus product of the south of the country.

Table 10: The results of the hypothesis test 2

Hypothesis	Path coefficient	t statistic	P Values	Result
Cultural elements → leadership brand	0.245	4.461	0.000	confirmation

3. Brand elements have an effect on the leadership brand in the agricultural industry, the citrus product of the south of the country.
   The test results of this hypothesis showed that the value of the path coefficient of brand elements on leadership brand is equal to 0.171. which is somewhat positive. The t-statistic of this relationship was reported as significant at the 95% confidence level [P-Value ≤ 0.05]. Based on this, the research hypothesis is confirmed. In this sense, the brand elements have a positive and significant effect on the leadership brand in the agricultural industry, the citrus product of the south of the country.

Table 11: The results of the hypothesis test 3

Hypothesis	Path coefficient	t statistic	P Values	Result
Brand Elements → Brand Leadership	0.171	2.523	0.012	confirmation

4. Agricultural infrastructural elements have an effect on the leadership brand in the agricultural industry, the citrus product of the south of the country.
   The results of this hypothesis test showed that the value of the coefficient of the path of agricultural infrastructural elements on leadership brand is equal to 0.398. which is somewhat positive. The t-statistic of this relationship was reported as significant at the 95% confidence level [P-Value ≤ 0.05]. Based on this, the research hypothesis is confirmed. In this sense, agricultural infrastructural elements have a positive and significant effect on the leading brand in the agricultural industry, the citrus product of the south of the country.

Table 12: The results of the hypothesis test 4

Hypothesis	Path coefficient	t statistic	P Values	Result
Infrastructural elements of agriculture → leadership brand	0.398	6.499	0.000	confirmation

6 Analysis of findings and suggestions

In order to reach the final goal of the research and to design a conceptual model of factors affecting the leadership brand, the factors affecting the leadership brand were first identified through library studies and the review of various sources related to the subject. Then, using the Delphi method and benefiting from the valuable views and opinions of the expert panel members, an agreement and consensus was reached on 80 components. And based on this, a conceptual model was designed.

In order to test the initial model, the agreed variables of the Delphi method were distributed among the managers and experts of the organizations of the General Directorate of Research of the Ministry of Agriculture, the Farmer's House and the Chamber of Commerce, in the form of a questionnaire with 80 indicators. According to the target statistical population, a sample of 315 experts and senior managers was selected and the questionnaire was given to them. In this questionnaire, they were asked to determine the impact of each indicator on the leadership brand in the field of agriculture based on very low impact to very high impact. Among the respondents to the respective questionnaires, 206 were men (65%) and 105 were women (35%). The results of the distribution of sample people based on education showed that 114 people had bachelor's degrees (36%), 143 people had master's degrees (46%) and 58 people had doctorates (18%). Also, the results of age distribution showed that 87 people were less than 40 years old (27%), 125 people were between 40 and 45 years old (39%) and 103 people were more than 45 years old (32%). Based on work experience, 95 people had less than 10 years (30%), 114 people had work experience between 10 and 20 years (36%), and 106 people had work experience more than 20 years (33%).

Structural equation method and SmartPLS software were used to test the leadership brand conceptual model. Structural modeling is a powerful statistical technique that combines a measurement model and a structural model with a simultaneous statistical test. Through these techniques, researchers can reject hypothetical structures (models) or confirm their compliance with the data. After forming the model, t values were presented for the significance of the path coefficients in the model. If the absolute value of t corresponding to a path is greater than 1.96, it is significant. According to the calculations, all indicator variables had t values greater than 1.96. This means that the presence of variables in the model is significant (at the 0.05 level) and the significance of all variables means that their coefficients are significant. If a coefficient is significant, then regardless of the algebraic sign, its larger value means a stronger relationship between the two variables to which the coefficient belongs. According to the calculations, all

indicator variables had coefficients with values greater than 0.5, which shows the high power of all indicator variables in measuring the underlying variables (components). Also, by comparing the coefficients of the indicator variables related to the components of the leadership brand, the agricultural infrastructure elements with a coefficient of 0.398 have the largest value among the other components, and therefore it can be said that this component plays the largest role in measuring this dimension and the brand elements With a coefficient of 0.171, it has the lowest value among other components. Therefore, the proposed conceptual model was approved in the agricultural industry.

Goodness of fit indices were also used to check the appropriateness of the researched model in fitting the collected data. These indicators are presented as numerical values and for each of them, values are considered as desirable values. The placement of the goodness of fit indices for the investigated model in the desired range indicates the acceptable fit of the model and its appropriateness. The results of the research findings indicated that the goodness of fit indices are in the desired range and therefore the research model is approved. Therefore, based on the structural equation model, exploratory factor analysis, goodness of fit and calculations, the model calculated by Delphi experts is confirmed and its adequacy is confirmed.

Also, the questions and calculated components were formulated, adjusted and validated in the form of a questionnaire, and the research hypotheses were investigated using structural equation modeling. According to the method of structural equations, the findings are as follows:

Considering the impact of leadership personal characteristics, cultural elements, brand elements and agricultural infrastructure elements on the leadership brand in the agricultural industry, the citrus product of the south of the country, the results showed that the value of the path coefficient of these characteristics on the leadership brand was positive and the t-statistic These relationships are significant at the confidence level of 95%. Based on this, the leadership's personal characteristics, cultural elements, brand elements, and agricultural infrastructure elements have a positive and significant effect on the leadership brand in the agricultural industry, citrus products in the south of the country, and all 4 hypotheses of the research were confirmed.

The agricultural organizations of Hormozgan province, by strengthening the leadership brand, should present a different image to employees, customers, investors and beneficiaries in general, which requires the high commitment of each and every member of the organization, such as the board of directors of agricultural organizations in Hormozgan province. It should encourage the creation of the leadership brand in the organization, senior managers should be supporters and creators of fruitful ideas for the development of this brand, human resource specialists should make documented plans for the development and promotion of the leadership brand, and finally the CEO should be the "brand manager", in order to be the helmsman to guide the ship of the organization towards the many shores of organizational capabilities. When leaders of different levels come to the understanding that in addition to acquiring key leadership skills, they spread the essence of the leadership brand or leadership differentiators in the organization, they can claim that they have increased the value of their organization. A stable value that remains for other generations and is not harmed by environmental changes and becomes richer and richer with the passage of time.

References

[1] S.J. Abadi, Z. Mahdavipour, A. Rezaei and F. Nazari, *The relationship between employee self-concept, brand identity, brand pride and brand citizenship behaviour and customer satisfaction*, Int. J. Bus. Excel. **23** (2021), no. 2, 171–187.

[2] M. Aghaei, *Valuation of the Hamrah-e-Aval brand based on brand valuation models using Topsis multi-criteria decision-making model*, J. Revenue Pric. Manag. **20** (2021), no. 1, 42–53.

[3] S. Boguslavskay, *Structure of production and economic potential of the region*, Econ. Financ. Manag. Rev. **2** (2020), no. 2, 16–22.

[4] L. Chen and P.S. Fong, *Evaluation of knowledge management performance: An organic approach*, Inf. Manag. **52** (2015), no. 4, 431–453.

[5] C.H. Cheng and Y. Lin, *Evaluating the best main battle tank using fuzzy decision theory with linguistic criteria evaluation*, Eur. J. Oper. Res. **142** (2002), no. 1, 174–186.

[6] J. Cheng, J. Nakagawa, M. Yamamoto and T. Yamazaki, *Uniqueness in an inverse problem for a one-dimensional fractional diffusion equation*, Inv. Prob. **25** (2009), no. 11, 115002.

[7] J. Cohen, *The effect size*, Statistical Power Analysis for the Behavioral Sciences, (1988), 77–83.

[8] G. Dai, K.Y. Tang and K.P. De Meuse, *Leadership competencies across organizational levels: A test of the pipeline model*, J. Manag. Dev. **30** (2011), no. 4, 366–380.

[9] R. Fazli-Salehi, I.M. Torres, R. Madadi and M.A. Zúñiga, *Multicultural advertising: The impact of consumers' self-concept clarity and materialism on self-brand connection and communal-brand connection*, J. Bus. Res. **137** (2021), 46-57.

[10] I.R.A. Gusti, *Innovation and transportation of production cost control in improving the quality of agriculture resources as an acceleration solution to support business sector agriculture during the covid 19 period in Indonesia*, Int. J. Soc. Sci. (IJSS) **1** (2021), no. 4, 361–372.

[11] J. Henseler and G. Fassott, *Testing moderating effects in PLS path models: An illustration of available procedures*, Handbook of partial least squares, Springer, Berlin, Heidelberg, 2010, pp. 713–735.

[12] H. Hussinki, A. Kianto, M. Vanhala and P. Ritala, *Assessing the universality of knowledge management practices*, J. Knowl. Manag. **21** (2017), 1596–1621.

[13] T.H. Kim, J.N. Lee, J.U. Chun and I. Benbasat, *Understanding the effect of knowledge management strategies on knowledge management performance: A contingency perspective*, Inf. Manag. **51** (2014), no. 4, 398–416.

[14] M. Tenenhaus, V. Esposito Vinzi, Y.-M. Chatelin and C. Lauro, *PLS path modelling*, Comput. Statist. Data Anal. **48** (2005), no. 1, 159–205.

[15] G.-H. Tzeng and J.-Y. Teng, *Transportation investment project selection with fuzzy multiobjectives*, Transport. Plann. Technol. **17** (1993), no. 2, 91–112.

[16] M. Wetzels, G. Odekerken-Schröder and C. Van Oppen, *Using PLS path modeling for assessing hierarchical construct models: Guidelines and empirical illustration*, MIS Quart. **33** (2009), no. 9, 177–195.

[17] C.-H. Wu and W.-C. Fang, *Combining the fuzzy analytic hierarchy process and the fuzzy delphi method for developing critical competences of electronic commerce professional managers*, Qual. Quant.: Int. J. Method. **45** (2011), no. 4, 751–768.