

Capturing managers and experts' perspectives on organizational transformation in Iranian Fisheries Organization using Q methodology

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**Running Title:** Capturing managers and experts' perspectives on organizational transformation

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**Abstract**

The present research was conducted with the aim of identifying the subjective patterns of managers and experts of Iranian Fisheries Organization regarding organizational transformation. The research was carried out with the participation of a number of managers and experts of the Fisheries Organization who were selected by a purposeful sampling approach. The main research method for collecting required data was in-depth interview. After reviewing and summarizing 75 statements extracted from the interviews, 41 statements were finally selected as Q samples. After sorting Q statements, exploratory factor analysis and varimax rotation approach were employed to identify subjective patterns. The results revealed that five different subjective patterns can be identified among the managers and experts of the Iranian Fisheries Organization regarding the organizational transformation, which explained 72.87% of the total variance in the factor analysis model. The results of factor analysis indicated that the subjective patterns identified included participatory policies, capacity development and change management, appropriate organizational structures, incentives for change, and clarification of financial and administrative affairs. In the end, it was recommended that it is very important to develop more units and mechanisms within the organization for communication and interaction with other actors. Rereading and amending the regulations related to the support of the information system in the organization is an undeniable necessity that can develop and institutionalize the teamwork culture in the fisheries organization. In addition, the results of present study can facilitate the organizational transformation and ultimately increase the success and responsiveness of the fisheries organization.

**Keywords:** Iranian Fisheries Organization, Organizational transformation, Q methodology, Subjective patterns.

## 36 **1. Introduction**

37 The change is the only stable principle of the world (Serman, 2000; Filho & Raath, 2018;  
38 Insulander, 2019). Because, in the current uncertain context and conditions, instability is the most  
39 dangerous threat for the organizations (Farjoun, 2007; Dust et al., 2018). Based on this,  
40 organizations are forced to innovation and continuous and permanent changes for their survival  
41 and dynamism (Tim et al., 2019; Abdul-Kahar, 2020). Organizations often make decisions  
42 considering operational improvements or choosing new business opportunities to maximize their  
43 profits. Therefore, managers in the process of change must have high skills to make others aware  
44 of the necessity of change. In other words, they should be able to convince their subordinates and  
45 guide changes in the desired direction (Logemann et al., 2018). In general, in today's world, it is  
46 not enough to use past experiences to solve the current and future problems of the organization.  
47 Therefore, the managers of the organizations should think of another way to provide goods and  
48 services with minimum cost and superior quality according to market and customer needs.  
49 Therefore, cooperative behaviors are performed with the intention of helping others (Ahmadi et  
50 al., 2020; Ben Slimane & Padilla-Angulo, 2018).

51 According to what was mentioned earlier, in the current era, investigating and studying the process  
52 of managing organizational change is essential, important, and necessary (Sudhir, 2018). In fact,  
53 transformation is a special type of change. Change means the process of innovation in the members  
54 of an organization (Chen et al., 2015). In other words, organizational transformation is a continuous  
55 and fundamental change based on theory, values, and practical methods that leads to the  
56 reconstruction and dynamism of the entire organization (Hanif et al., 2014; Hornstein, 2015;  
57 Hornstein, 2015). Nevertheless, organizational transformation and human capital management in  
58 organizations of different countries are facing many challenges (Garcia et al., 2015). For example,  
59 globalization, lack of skilled and committed workforce, lack of recognition of employees' needs,  
60 lack of plan, lack of meritocracy, discrimination, insufficient productivity of human resources, lack  
61 of motivation, lack of employee participation (in decision-makings, organization policy meetings,  
62 and other affairs), and lack of cooperation between the organizations and experienced employees  
63 are just some of the main challenges of the organization in many countries of the world (Sudhir,  
64 2018; Chen et al., 2015; Zhao et al. , 2019).

65 In the meantime, organizations in countries such as Iran, due to international sanctions and their  
66 specific national and international policies, experience inherently more difficult conditions than

67 organizations in countries with more economic stability. For example, the review of the reports of  
68 the Iranian Fisheries Organization shows that this organization has many issues and problems, such  
69 as the lack of experienced labor, the decrease in the productivity of human resources, the lack of  
70 motivation in the employees, the decrease in hope for the future, the lack of active participation,  
71 lack of effective communication with other organizations, lack of satisfaction of employees and  
72 clients, and weakness in planning (Kotwani, 2020). In addition, due to the rapid changes and  
73 developments in the environment, the Iranian Fisheries Organization is not an exception to this rule  
74 and must be able to respond to the diverse demands of the users and owners in accordance with  
75 their needs and at the right time (Haskell et al. al., 2014; Adeniji et al., 2018; Mogholi & Zarei,  
76 2020). From the perspective of researchers (see Janežič et al., 2018; Khan, 2019; Tim et al., 2019),  
77 organizational transformation is one of the most key answers to these challenges. In other words,  
78 such fast and complex business environments in today's organizations require organizational  
79 transformation (Khan, 2019). This is despite the fact that there is not much desire for organizational  
80 transformation in Iranian organizations such as the Iranian Fisheries Organization. **There are many**  
81 **obstacles for non-transformation in Iranian organizations. For example, issues such as stagnation,**  
82 **monotony, deterioration of work ethics, lack of innovation, centralized planning system, lack of**  
83 **designing power (Akhvan-Alaf, 2015),** lack of performance evaluation system, structural and  
84 organizational problems, overlapping tasks, not prioritizing quality policies, lack of appropriate  
85 criteria for selecting employees , the lack of meritocracy in taking organizational positions  
86 (Seyedjavadin & Moshfegh, 2008) are among the most important obstacles to the lack of  
87 organizational transformation in Iran (Tahri Attar et al., 2018; Imran et al., 2019; Alipour and  
88 Alizadeh, 2017; Hakimzadeh et al., 2019).

89 Also, studies (see Alipour and Alizadeh, 2017; Nazifi et al., 2018; Tielen, 2008) show that the  
90 mental patterns of managers of organizations such as the Iranian Fisheries Organization can play a  
91 key role in organizational transformation. For example, Nazifi et al. (2018) state that identifying the  
92 mental patterns of managers can help to change the future policies of organizations. Yasini et al.  
93 (2017) also claim that identifying mental patterns can lead to increased sensitivity and  
94 responsibility of managers in line with organizational transformation.

95 **Preliminary investigations show that despite the importance and role of the mental patterns of**  
96 **managers of the Iranian Fisheries Organization in the organizational transformation, sufficient**  
97 **studies have not been conducted in this field (Jalilian et al., 2023).** In addition, organizational

98 transformation in the fisheries organization and any other organization is dynamic, and this process  
99 depends on the various organizational, social, and economic components specific to that  
100 organization. Therefore, the results of researches that have examined the role of managers' mental  
101 patterns on organizational transformation in other organizations cannot be generalized for the  
102 fisheries organization. As a result, the current research suggests the lack of sufficient understanding  
103 of the mental patterns of managers of the Iranian Fisheries Organization as the main research gap.  
104 In order to fill this research gap, identifying the mental patterns of managers and experts of the  
105 Iranian Fisheries Organization regarding organizational transformation was determined as the main  
106 goal of the research. In general, it can be mentioned that this research has three novelties or original  
107 contributions. First, the current research is innovative because it examines the issue of  
108 organizational transformation in the Iranian Fisheries Organization. To the best of our knowledge no  
109 other research has been done in the field of organizational transformation in the Iranian Fisheries  
110 Organization. Second, this research uses the Q methodology to identify the mental patterns of  
111 managers and experts in the fisheries organization. The application of this methodology to examine  
112 the mental patterns of managers and experts in the Iranian Fisheries Organization has also been  
113 done for the first time. Thirdly, this research leads to the identification and development of the  
114 intellectual framework of managers and experts in the fisheries organization. By identifying the  
115 determinants of organizational transformation from the point of view of managers and experts, the  
116 present research provides insights for practical organizational transformation and improving the  
117 success and accountability of the organization.

## 118 119 **2. Materials and methods**

### 120 **2.1. Type of research**

121 This study was conducted in January and February 2023. In terms of paradigm, it is mixed  
122 (combination of qualitative and quantitative methods) study and in terms of purpose, it is  
123 considered as an applied exploratory study. Q methodology steps were used to sequence the  
124 research steps. Therefore, the phase of examining the situation and forming the concourse  
125 environment was done using a qualitative approach. Quantitative stage was also done using Q  
126 factor analysis approach.

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## 130 2.2. Population

131 The statistical population was managers and experts of Iran Fisheries Organization. Referring to  
132 the report of the Iranian Fisheries Organization, the number of experts and managers was 30, of  
133 which 14 were selected as samples. Details about the number of samples and the sampling method  
134 have been provided in Q methodology section (Section 4-2). However, it should generally be noted  
135 that the Iranian Fisheries Organization consists of 4 general directors, each of whom has 2 deputies,  
136 and each deputy has 2 to 3 heads of specialized groups. Finally, head of specialized group works  
137 with 2 to 3 subject experts.

## 138 139 2.3. Steps of Q methodology

140 The Q method is a quasi-quantitative method whose purpose is to find and describe mental patterns  
141 and identify the agreement and contradiction in people's perspectives, opinions, and preferences  
142 about a specific issue (Stevenson, 2015; Ramlo, 2016).

### 143 144 2.3.1. Choosing the participants and definition of the concourse or Q population

145 In order to create a concourse environment in Q methodology, it was necessary to select  
146 participants who can provide sufficient and accurate information in the field of organizational  
147 transformation in the Iranian Fisheries Organization. For this purpose, by consulting various  
148 members of the organization, one of the experts was selected as the first participant and a semi-  
149 structured questionnaire was provided to him. After finishing the interview with the first  
150 participant, he was asked to introduce another person for the second interview. This process  
151 continued until the selection of the 14th expert and/or manager. It should be noted that the  
152 researchers concluded from the 11th to the 14th interview that the continuation of the sampling  
153 process does not add new insights to the previous results about the organizational transformation.  
154 In this regard, after the end of the semi-structured interview with the 14th participant, the sampling  
155 process was stopped. In other words, at this stage, the researchers came to the conclusion that  
156 theoretical saturation has been achieved about the organizational transformation in the Iranian  
157 Fisheries Organization. It should be noted that the validity of the semi-structured questionnaire that  
158 was used at this stage was reviewed and confirmed by several experts in the field of behavioral and  
159 management sciences. It should also be noted that in order to analyze the text of the interviews,  
160 MAXQDA12 textual data analysis software was used. The results of these 14 interviews were used  
161 to form the concourse environment. The concourse environment actually includes a comprehensive

162 and diverse set of materials related to the literature of the research subject (Van Exel & DeGraaf,  
163 2005). In this research, Q population/concourse environment included 75 statements which were  
164 drawn through 14 semi-structured interviews and research and study of scientific articles.

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### 166 **2.3.2. Forming and evaluating the Q sample**

167 Q samples are actually statements or phrases about the research topic (Adams et al., 2020). At this  
168 stage, in order to summarize the statements related to the concourse environment and create a  
169 manageable set of statements, the concourse matrix method was used. In other words, at this stage,  
170 75 statements constituting Q concourse environment/population were evaluated. In order to obtain  
171 a suitable sample of the concourse environment, similar and repeated statements were combined  
172 or some of them that had less connection with the issue of organizational transformation in the  
173 Iranian Fisheries Organization were removed. In addition, the extracted statements were given to  
174 four participants to give their opinions on. After collecting the opinions and making the requested  
175 corrections for the statements, the research questionnaire was finalized. This work helped to verify  
176 the validity of the research tool. After summarizing the results at this stage, a special set of  
177 statements was obtained, which was considered as the Q sample. Q sample included 41 statements,  
178 the complete list of which is given in the following sections and in the form of Table 3.

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### 180 **2.3.3. Q ranking**

181 In this step, according to Yoshizawa et al. (2016), the final cards for ranking were given to the  
182 managers and experts, and they were asked to rank the statements based on forced distribution in  
183 the charts. For this purpose, a matrix was provided to the managers/experts to easily sort Q samples  
184 based on forced distribution. In order to achieve the purpose of classification, the Q-chart for 41  
185 statements of the research was adjusted in such a way that they could evaluate the set of statements  
186 in a symmetrical distribution from strongly agree (+5) to strongly disagree (-5) (Figure 1).

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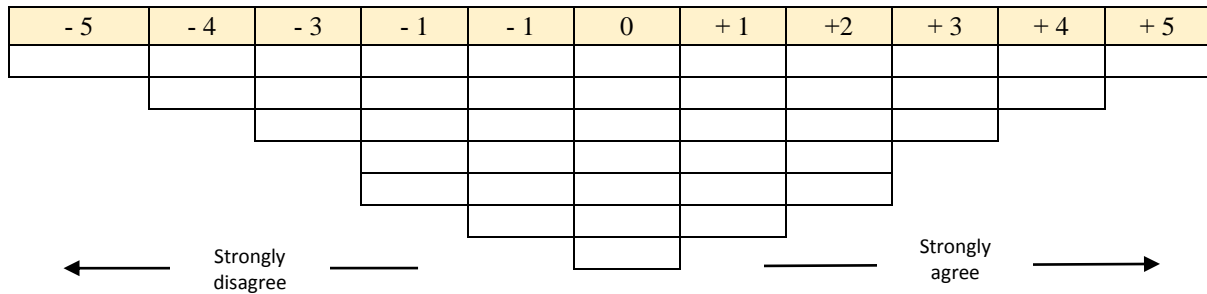
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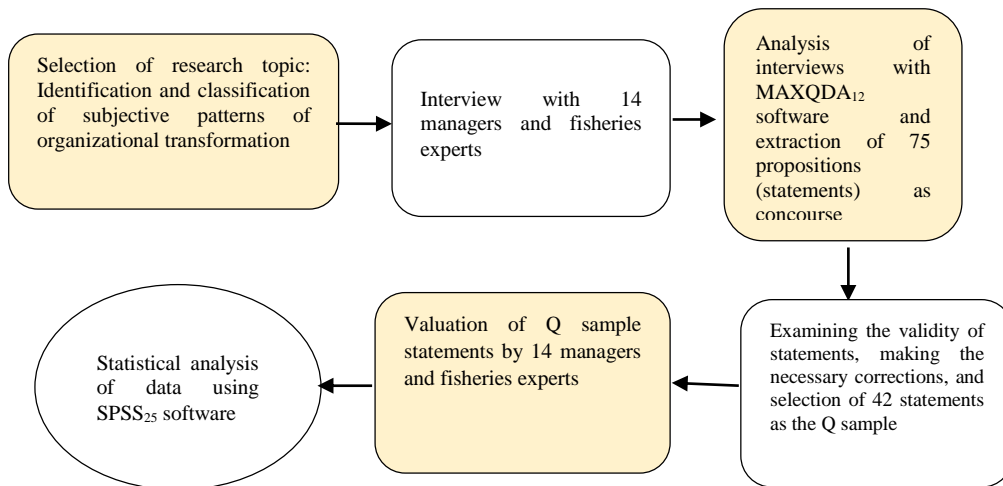
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201 **Figure 1.** Chart of ranking and evaluation of Q statements.  
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203 **2.3.4. Q factor analysis**

204 In the last step, the statements of the Q sample were analyzed using Q factor analysis method and  
205 SPSS<sub>25</sub> software. Varimax rotation method was applied to perform Q factor analysis. The  
206 suitability of the data for analysis was also checked with the help of KMO statistic and Bartlett's  
207 test. In general, the different stages of Q methodology are represented in Figure 2.



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213 **Figure 2.** Q methodology steps.  
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217 **3. Results**

218 In order to analyze organizational development in the Iranian Fisheries Organization, 14 managers  
219 and experts who were experts in this field and had work experience or skills were interviewed in a  
220 targeted manner. 11 of them were men and 3 were women. **There were several major reasons for  
221 the low participation of women in the study. First, the senior managers generally do not have a  
222 positive attitude towards the managerial and specialized skills of women in the fisheries  
223 organization. Second, in many Iranian organizations such as the Fisheries Organization, there are  
224 mainly cultural beliefs against women's management. In other words, many members of**

225 organizations believe that the head of organizations should not be a woman. Thirdly, historically,  
226 women in Iran have always been placed in positions where they had to do repetitive work and  
227 occupy low-level organizational positions. Fourth, organizations such as the Fisheries Organization  
228 are not compatible with women's characteristics and these organizations are generally patriarchal.

229 The analysis of the data collected from the interviews resulted in 75 propositions that formed the  
230 discourse space in the field of organizational transformation in the Iranian Fisheries Organization.  
231 Then, the validity of the propositions was evaluated based on the views of four interviewees and  
232 three university professors (with expertise in organizational transformation). After making the  
233 necessary corrections, 41 statements were finally selected as Q samples. The results of this section  
234 are presented in the form of mental patterns in Table 3.

### 235 236 **3.1. Q factor analysis**

237 In the quantitative part, 41 statements related to the Q sample were evaluated in the form of a forced  
238 distribution matrix by 14 managers and experts of the Fisheries Organization. The results of Q  
239 factor analysis demonstrated that the reported values for KMO statistic and Bartlett's sphericity test  
240 are 0.62 and 219.859, respectively. Based on the results of this section, the values of these indices  
241 were significant at the 0.01 level, which indicated the suitability of the data for Q factor analysis.  
242 Also, a scree plot diagram was used to show the amount of variance explained by the most  
243 important factors (Figure 3). The results of this figure are based on the eigenvalue index. According  
244 to the results of this diagram, it can be concluded that there are five distinct subjective patterns  
245 among managers and experts. Based on the results of the Q factor analysis using the principal  
246 components method, managers and experts were divided into five groups according to the  
247 difference in their perspectives and opinions about the effective factors in organizational  
248 transformation. As the results reported in Table 1, the first (first factor), second (second factor),  
249 third (third factor), fourth (fourth factor), and fifth (fifth factor) subjective patterns could account  
250 for 24.45%, 15.52%, 11.20%, 11%, and 10.69% of the total variance of the factor analysis model,  
251 respectively.

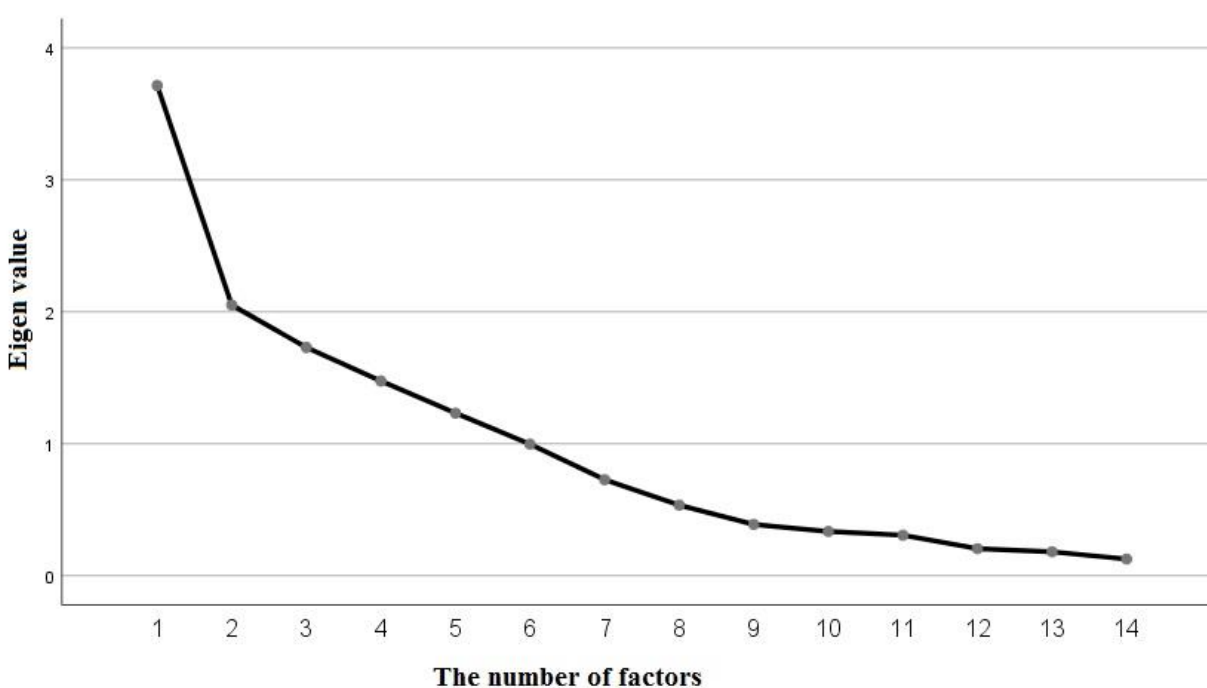
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**Table 1.** Subjective patterns extracted from Q factor analysis and the amount of variance explained by each subjective pattern.

Group	Subjective pattern	Variance %	Cumulative variance percentage	Eigen value
1	Participatory policies	24.45	24.45	3.42
2	Capacity development and change management	15.52	39.98	2.17
3	Appropriate organizational structure	11.20	51.18	1.56
4	Incentives for change	11.00	62.18	1.54
5	Clarification of financial and administrative affairs	10.69	72.87	1.49

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**Figure 3.** Scree plot diagram.

### 259 3.2. Rotated matrix of the factors

260 Table 2 shows the summary of the results related to the rotated matrix of the factors. The results of  
 261 this section also show the managers who have the subjective patterns in a classified manner.

262 Considering that the loading factors are greater than  $\frac{2.58}{\sqrt{n}}$ , it can be claimed with 99% confidence  
 263 that the obtained loading factors are statistically significant (Table 2). It should be noted that  $n$  is  
 264 equal to the Q sample (41 statements). According to the above formula, the standard limit for  
 265 loading factors was calculated as 0.40. Considering that the loading factors specified in Table 2  
 266 have values greater than 0.40, it can be mentioned that the first, second, third, and fourth managers

267 and experts jointly had subjective pattern 1. Sixth, seventh and fourteenth managers and experts all  
 268 had subjective pattern 2. In addition, the fifth and eighth managers and experts were the only  
 269 participants who had subjective pattern 3. Based on the results of Q factor analysis, the ninth and  
 270 thirteenth participants had subjective pattern 4. Finally, tenth, eleventh and twelfth managers and  
 271 experts were also categorized in the subjective pattern 5. The basis of naming the subjective  
 272 patterns was the existence of common traits and characteristics among the types of mentalities  
 273 among the managers and experts participating in the research.

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 275 **Table 2.** The rotated matrix of the correlation of the managers and experts'  
 276 perspectives in each of the subjective patterns

277 Participants' code	278 Subjective pattern 1	279 Subjective pattern 2	280 Subjective pattern 3	281 Subjective pattern 4	282 Subjective pattern 5
283 1	0.897	- 0.009	0.052	0.067	- 0.052
284 2	0.884	0.013	0.017	0.001	- 0.010
285 3	0.886	- 0.085	0.005	- 0.027	- 0.053
286 4	0.820	- 0.274	- 0.058	-0.013	- 0.006
287 6	- 0.224	0.850	0.226	0.035	- 0.025
288 7	- 0.014	0.919	- 0.108	0.004	0.033
289 14	- 0.025	0.504	0.132	0.574	0.014
290 5	- 0.118	0.029	0.825	0.097	0.089
291 8	0.257	0.215	0.0.504	- 0.172	- 0.097
292 9	- 0.330	- 0.149	0.463	0.507	- 0.024
293 13	0.173	- 0.043	- 0.147	0.879	0.068
294 10	0.111	-0.024	0.213	- 0.137	0.832
295 11	- 0.272	0.444	- 0.483	0.284	0.448
296 12	- 0.161	-0.043	- 0.181	0.189	0.757

291 In Table 3, the views of each of the managers and experts were ranked on Q statements. Doing this  
 292 made it possible to find out what rank each of the Q statements get in each of the mental patterns.  
 293 As the results of Table 3 show, in the first, second, third, fourth, fifth, and sixth mental patterns,  
 294 the items related to participatory policies, capacity development and change management,  
 295 appropriate organizational structures, incentives for change, and clarification of financial and  
 296 administrative affairs have been assigned the highest ranks.

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**Table 3.** Scores of each statement based on the load factor in the subjective patterns of experts and managers.

Statement	Subjective pattern 1: Participatory policies	Subjective pattern 2: Capacity development and change management	Subjective pattern 3: Appropriate organizational structure	Subjective pattern 4: Incentives for change	Subjective pattern 5: Clarification of financial and administrative affairs
Advising and seeking advice from colleagues	39	1	27	10	11
Interaction and communication with other organizations related to Fisheries Organization	33	2	9	24	12
Involving representatives of fisheries-related organizations in decision-makings	32	4	28	14	7
Conducting collaborative research with other organizations and institutions related to Fisheries Organization	38	6	17	23	4
Involving all stakeholders in all processes related to decision-making and evaluations	31	5	41	6	39
Creating continuous learning opportunities for experts	37	7	20	4	2
The value of learning and teaching in the organizational culture of Fisheries Organization	35	41	36	2	5
Changing the attitude of managers towards creating transformation in the organization	21	29	10	5	41
Managers' support for organizational transformation	16	12	14	8	37
Operationalizing the initiatives, ideas, and opinions of experts in order to improve services	18	18	15	11	9
Communication and interaction with research institutes and universities in order to support aquaculture	20	9	7	1	40
Identifying information fields related to different fisheries sectors	26	11	11	32	10
The serious determination of senior managers for	22	37	6	30	3

organizational transformation					
Producing and transferring the required and valid findings to other relevant departments and organizations	19	33	1	22	14
Strengthening interactions between research, education, and extension with the Fisheries Organization	27	19	2	28	21
Creating the opportunity for fair participation of experts in internal and external conferences	23	28	23	34	15
Needs assessment and targeting of educational courses	24	24	18	38	31
Accepting employees and reducing their resistance to organizational change	29	8	29	39	34
Selection of people with expertise and experience in management positions of the Fisheries Organization	36	15	21	25	29
Selection of managers familiar with fisheries management positions	25	25	34	23	25
Connection and communication with other information systems	30	32	12	17	28
Recruitment of skilled and experienced personnel	28	31	16	21	23
Providing the possibility of communication between different units and departments of the organization	15	34	30	19	36
Merging posts with similar duties	11	22	8	41	38
Justifying employees by enumerating the benefits of organizational transformation	3	16	13	35	32
Providing fair insurance and welfare services to experts	2	21	4	12	16
Encouraging experts to present new programs and activities	1	14	26	7	20
Organizing discussion forums and educational workshops	8	26	22	3	6

Supporting officials and policy-makers for organizational transformation and improving its position in the organization	13	30	31	15	8
Everyone's determination to replace the traditional management system with a new system	5	17	38	29	17
Giving importance and encouraging experts to acquire new skills and knowledge in the field of information	6	27	40	27	24
The justification of organizational transformation costs	4	23	35	36	19
Providing incentives for the initiative of experts	17	36	25	16	22
Encouraging group learning	7	35	34	13	26
Compliance with legal regulations and activity standards	9	13	33	31	13
Allocation of necessary credit for the development of information and communication technology	12	20	5	18	27
Investing in order to create aquaculture databases	34	38	3	26	18
Compilation of clear procedures and instructions	40	40	39	20	35
Preventing parallel work of departments	41	39	37	37	30
Specific and clear responsibilities	10	10	19	9	1
Increasing the quantity and quality of standards	14	3	32	40	33

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306 **4. Discussion and implication**

307 **4.1. Subjective pattern 1: Participatory policies**

308 The first subjective pattern had an eigen value of 3.42 and could explain 24.45% of the total  
309 variance. Due to the conceptual and semantic affinity of the statements, this subjective pattern was  
310 named "participatory policies". According to the ranking of the statements (Table 3) and based on  
311 the subjective pattern of the managers who were categorized in this pattern it can be argued that  
312 participatory policies create the basis for interaction and communication with other organizations.

313 In addition, such policies lead to strengthening interactions between institutions and receiving  
314 support from these institutions. As a result, the feeling of effectiveness of giving and receiving  
315 advice from colleagues and experts is strengthened. Involving all the stakeholders in the processes  
316 related to decision-making and evaluation of reports of aquaculture activities leads to increasing  
317 recognition and awareness about the importance of the participation of representatives of fisheries-  
318 related organizations in decision-making and solving challenges. To implement this subjective  
319 pattern and use it for organizational transformation, it is suggested to use three key strategies. First,  
320 participatory policy-making for the purpose of organizational transformation requires consulting  
321 and seeking advice from colleagues. Second, the organization should try to interact constructively  
322 with other fisheries-related organizations and involve their representatives in decision-makings.  
323 Thirdly, the organization should try to do collaborative research with other organizations and  
324 institutions. This can help to involve all the stakeholders in all the processes of decision-making  
325 and evaluations and ultimately organizational transformation.

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#### 327 **4.2. Subjective pattern 2: Capacity development and change management**

328 The eigen value and explained variance of this subjective pattern were 2.17 and 15.52%,  
329 respectively. The interviewees believed that having new competencies related to communication,  
330 facilitation, and intermediacy can accelerate identifying and developing new opportunities for  
331 technical and organizational innovations and building skills in the field of information and  
332 communication technology for organizational transformation. In addition, a employees' desire to  
333 use these technologies and innovations in their job activities can lead to their empowerment in the  
334 field of skills and competencies required by the information system and organizational  
335 transformation. In addition, the rapid sharing of information has a significant effect on better  
336 acquisition of knowledge and new information on job duties. This issue can make employees play  
337 a role as an effective member in the organization. In other words, they can properly analyze the  
338 existing issues and problems and provide solutions for them through communicating with different  
339 parts of the organization's information system in crisis situations. In other words, the conditions  
340 within the organization should be such that it leads to strengthening the interactions of the  
341 employees of the research, education, and extension departments of the fisheries organization.  
342 They should believe that they can influence the organization's goals and help to accept and establish  
343 the information system in the fisheries organization. In order to implement this subjective pattern  
344 (capacity development and change management) and create organizational transformation using it,

345 some key strategies are suggested. Firstly, opportunities for continuous learning of experts and  
346 managers should be created in order to change their attitude towards the organizational  
347 transformation. Secondly, managers should provide meaningful support for organizational  
348 transformation in order to operationalize initiatives, ideas, and opinions of experts in order to  
349 improve services. Thirdly, the communication and interaction of research institutes and universities  
350 should be strengthened. This can lead to the support of aquaculture as well as the production and  
351 transfer of valid findings to other relevant departments and organizations. Fourthly, interactions  
352 between the research, education, and extension departments with the fisheries organization should  
353 be strengthened. This can provide opportunities for more experts of this organization to attend  
354 internal and external conferences. Fifth, in order to increase the willingness to accept organizational  
355 change among employees and reduce their resistance to organizational change, a preliminary needs  
356 assessment study should be conducted.

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#### 358 **4.3. Subjective pattern 3: Appropriate organizational structure**

359 The eigen value and the explained variance of the third subjective pattern were equal to 1.56 and  
360 11.20%, respectively. According to the perspectives of the managers and experts in this subjective  
361 pattern and the importance score of the statements (Table 3), it can be concluded that according to  
362 the existing organizational structures, communication with other information systems of the  
363 organization is possible. Of course, it should be mentioned that this work requires the support of  
364 the senior managers of the fisheries organization. Therefore, it is very important to develop more  
365 units and mechanisms within the organization for communication and interaction with other actors.  
366 Rereading and amending the regulations related to the support of the information system in the  
367 organization is an undeniable necessity that can develop and institutionalize the teamwork culture  
368 in the fisheries organization. In order to take advantage of the opportunity that this subjective model  
369 has created in the organization, some important considerations should be taken into account.  
370 Firstly, efforts should be made to use individuals with expertise and experience in the management  
371 positions of the Fisheries Organization. Secondly, positions with similar or identical duties should  
372 be merged with each other to avoid parallel work in the organization. Thirdly, proper  
373 communications should be formed between different units and departments of the organization.  
374 Fourthly, in the recruitment process, the organization should try to hire human resources who have  
375 more skills and experience than other applicants.

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#### 377 **4.4. Subjective pattern 4: Incentives for change**

378 Two of the study participants had this subjective pattern. Its eigen value was 1.54 and explained  
379 11% of the total variance. The subjective pattern of change incentives shows that managers and  
380 experts believe that employees can be justified by explaining the benefits of establishing a suitable  
381 information system in the organization, assigning appropriate salaries to experts, providing fair  
382 insurance and welfare services, and justifying the cost. The information system causes an increase  
383 in employees' desire to replace the traditional management system with new information systems.

384 In this regard, it seems that paying more attention to/providing incentives for the initiative of  
385 experts and encouraging them to acquire new skills in the field of information can be an efficient  
386 strategy in the field of organizational transformation. Also, the support of officials and policy-  
387 makers for organizational transformation and the formation of discussion forums and training  
388 workshops can lead to an increase in people's interest in group work that produces practical results.  
389 In addition to these cases, a person's belief that something is wrong in the fisheries organization  
390 and must be changed, and that there is a deep gap between the current structure of the organization  
391 and the desired situation, provides the basis for concrete changes in this field. In other words, the  
392 conditions within the fisheries organization should be such that the members can understand the  
393 relationship between their work and its consequences.

#### 394 **4.5. Subjective pattern 5: Clarification of financial and administrative affairs**

396 According to the results of the research, three of the participants had this subjective pattern. The  
397 eigen value of this pattern was 1.49 and it explained about 10.69% of the total variance. The  
398 perspectives of the managers and experts of this group show that in order to develop transparent  
399 procedures and instructions, it is necessary to define the responsibilities in a more specific and  
400 transparent manner. Because, this prevents the parallel work of devices and departments under the  
401 supervision of the organization. Also, clearly specifying the program implementation procedure  
402 leads to increasing the credit allocation necessary for the development of information and  
403 communication technology. Therefore, it is recommended that the rules and regulations in the  
404 organization to support the information system be reviewed and modified to create a teamwork  
405 culture in the organization. Also, hiring skilled and experienced human resources can be effective  
406 in determining the goals and strategies related to organizational transformation in the organization.  
407 This action itself can be effective in determining the duties of different departments in connection  
408 with the organizational transformation in the fisheries organization.



## 409 5. Conclusion, limitations, and future directions

410 The current research was focused on capturing and analyzing the subjective patterns of managers  
411 and experts in line with organizational transformation in the Iranian Fisheries Organization. The  
412 general conclusion of the study was that the managers and experts have five different subjective  
413 patterns, which in order of importance (the variance explained by each of these patterns) include  
414 participatory policies, capacity development and change management, appropriate organizational  
415 structures, incentives for change, and clarification of financial and administrative affairs. Present  
416 research ended with three important conclusions. First, for the purpose of organizational  
417 transformation, organizations such as the Iranian Fisheries Organization should consider  
418 cooperative policies and the development of organizational capacities for change management as  
419 a turning point. Second, organizations should provide infrastructure and organizational structures  
420 suitable for organizational transformation. It can be mentioned that providing change incentives at  
421 this stage can act as a trigger. Change incentives usually originate from the organizational  
422 environment or the environment outside the organization. These incentives include factors like new  
423 technology or changes in government regulations. Also, the inefficiency of managers can be an  
424 incentive for change in the organization. There are forces and incentives in the environment that  
425 increase the need for change. These incentives include external and internal incentives such as the  
426 environment, organizational requirements, cultural requirements, the nature of the workforce,  
427 technology, economic shocks, competition, social trends, global policies, the behavior of  
428 employees and managers, the mindset of leaders and employees. Third, lack of financial and  
429 administrative transparency leads to lack of trust and unwillingness to implement the principles of  
430 organizational transformation. In this regard, organizations and their managers should try to  
431 approve and implement the regulations related to the transparency of financial and administrative  
432 affairs in order to lay the groundwork for the realization of organizational transformation. Although  
433 in many cases there are limitations for this work and in the initial stages of implementing such a  
434 policy, the efficiency of the organization may experience decreases due to the competition of the  
435 organization's management competitors, in the long term it can lead to an increase in efficiency  
436 and concentration of tasks in the organization. In this way, organizational transformation will  
437 happen in the long term. In general, it can be noted that the present research, by identifying the  
438 subjective patterns of managers and experts, proposes three operational steps for organizational  
439 transformation. Following these three steps and the strategies proposed in each of them can help

440 governments, organizations, policy-makers, managers, experts, employees, and other users so that  
441 organizational transformation happens more easily. The realization of this can help organizations  
442 to adapt to the ever-increasing developments and changes of the present era in a more practical  
443 way.

444 This study had some limitations that should be discussed in this section. First, organizational  
445 transformation is a complex phenomenon and different constructs (subjective patterns) are  
446 considered as factors affecting it. Therefore, beyond the factors identified in this research, there  
447 may be other constructs for the organizational transformation of Iranian fisheries Organization that  
448 the current research did not address. Second, this research was carried out only in the Iranian  
449 Fisheries Organization and the sampling was done scientifically. Therefore, the results indicate that  
450 the model of subjective patterns is of great reliability. Nevertheless, testing the model of present  
451 research using other statistical methods such as structural equation modeling and repeating this  
452 research in other organizations can greatly contribute to the strength of the research results. Third,  
453 due to the fact that the research tool was based on self-reporting system, some considerations and  
454 administrative issues may have influenced the responses of the participants in the process of  
455 conducting the research. Therefore, it is suggested that future researchers use other methods to  
456 collect similar information. Comparing the results of the present research with the results of  
457 researches that are conducted with methods other than self-reporting system, can provide more  
458 further insights about the topic. This does not mean that the results of present study are not suitable  
459 for the international readers or Q methodology is not the best method to reveal subjective views of  
460 the respondents with their similarity and difference, but it refers to the limitations of the study that  
461 should be kept in mind by the readers and users of the results.

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## 466 467 **References**

- 468 Abdul-Kahar, A. 2020. Modern Challenges of Human Resource Management Practice in Job  
469 Placement and Recruitment within Organisations in the African Continent. *J. Hum. Resour.  
470 Manag.*, **8(2)**: 69-75.
- 471 Abinaya, K. 2014. Subjective well-being and psychological empowerment among the employees  
472 of an auto component manufacturing company. *Glob. J. Res. Manag.*, **4(2)**: 20-34.

- 473 Adeniji, Ch., Adeyeye, O., MaxwellOlokundunn, O., DeborahMotilewa, S., and Akinbode, M.  
474 2018. Data on strategic change on employees' behavioural attitude and firm performance  
475 of selected manufacturing firms in Nigeria. *Data Br.*, **18**: 1551–1555.
- 476 Ben Slimane, F., and Padilla-Angulo, L. 2018. Strategic change and corporate governance:  
477 Evidence from the stock exchange industry. *J. Bus. Res.*, **103**: 206-218.
- 478 Chen, S. Y., Wu, W. C., Chang, C. S., and Lin, C. T. 2015. Job rotation and internal marketing for  
479 increased job satisfaction and organisational commitment in hospital nursing staff. *J. Nurs.*  
480 *Manag.*, **23(3)**: 297-306
- 481 Farjoun, M. 2007. The end of strategy? *Strateg. Organ.*, **5(3)**: 197-210.
- 482 Filho, L. W., and Raath, S. 2018. The role of transformation in learning and education for  
483 sustainability. *J. Clean. Prod.*, **199**: 286- 295.
- 484 Garcia, PRJM., Wang, L., Lu, V., Kiazad, K. and Restubog, SLD. 2015. When victims become  
485 culprits: The role of subordinates' neuroticism in the relationship between abusive  
486 supervision and workplace deviance. *Pers. Individ. Differ.*, **72(1)**: 225- 29.
- 487 Hanif, M., Shafique Khan, Y. and Zaheer, A. 2014. Impact of Organizational Resistance to Change  
488 on BPR Implementation: A Case of State Bank of Pakistan. *Eur. J. Innov. Bus. Manag.*,  
489 **6(4)**: 186-196.
- 490 Hornstein, H.A. 2015. The integration of project management and organizational change  
491 management is now a necessity. *Int. J. Proj. Manag.*, **33(2)**: 291-298.
- 492 Insulander, E., Brehmer, D. and Ryve, A. 2019. Teacher agency in professional development  
493 programmes—A case study of professional development material and collegial discussion.  
494 *Learn. Cult. Soc. Interact.*, **23**: 100- 330
- 495 Jalilian, S., Alambeigi, A., Hejazi, Y., Rezvanfar, A. and Rezaei, A. 2021. Content analysis of  
496 change organization toward confirmed Information System in Iranian Fisheries  
497 organization. *Iranian J Agric Econ Devel Res.* (In Press).
- 498 Janežič, M. and Dimovski, V. 2018. Modeling a learning organization using a molecular network  
499 framework. *Comput. Educ.*, **118**: 56-69 .
- 500 Khan, M. 2019. Knowledge, skills and organizational capabilities for structural transformation.  
501 *Struct. Chang. Econ. Dyn.*, **48**: 42-52.
- 502 Logemann, M., Cornelissen, J. and Piekkari, R. 2018. The sense of it all: Framing and narratives  
503 in sense giving about a strategic change, *Long. Rang. Plann.*, **52(5)**: 101852.
- 504 Adams, M. A., Kayira, J., Gruber, J. S., Idemudia, U., Tegegne, Y. T., Nantogmah Attah, A., ...  
505 and Ansong, M. 2021. Good governance practices in Ghana's FLEGT voluntary  
506 partnership agreement process: an application of Q methodology. *J. Environ. Policy Plan.*,  
507 **23(1)**: 1-15.
- 508 Ramlo, S. 2016. Mixed method lessons learned from 80 years of Q methodology. *J. Mix. Methods*  
509 *Res.*, **10(1)**: 28-45.
- 510 Sterman, J. D. 2000. Business dynamics: systems thinking and modeling for a complex world.  
511 McGraw-Hill Inc.
- 512 Stevenson, H. 2015. Contemporary discourses of green political economy: A Q method analysis.  
513 *J. Environ. Policy. Plan.*, **21(5)**: 533-548.
- 514 Sudhir, S. 2018. Human Resource Management: International Digest. *Bradford.*, **26(5)**: 18-21.
- 515 Tielen, M., van Staa, A. L., Jedeloo, S., van Exel, N. J. A. and Weimar, W. 2008. Q-Methodology  
516 to Identify Young Adult Renal Transplant Recipients at Risk for Nonadherence.  
517 *Transplant.*, **85(5)**: 700–706.
- 518 Tim, Y., Hallikainen, P. and Pan, S. L. 2019. Actualizing business analytics for organizational  
519 transformation: A case study of Rovio Entertainment. *Eur. J. Oper. Res.*, **281(3)**: 642-655.

- 520 Van Exel, J., and De Graaf, G. 2005. Q methodology: A sneak preview, Available at:  
521 <https://www.betterevaluation.org/sites/default/files/vanExel.pdf>.
- 522 Yoshizawa, G., Iwase, M., Okumoto, M., Tahara, K. and Takahashi, S. 2016. Q workshop: An  
523 application of Q methodology for visualizing, deliberating and learning contrasting  
524 perspectives. *Int. J. Environ. Sci. Educ.*, **11(13)**: 6277–6302.
- 525 Yasini, A., Rezaseikhah, H., Taban, M. and Zeinabadi, H. 2017. Identifying Mental Models of  
526 Employees Regarding Job Promotion at the University of Ilam Using Q Methodology.  
527 *Quarter. J. Pub. Organ. Manage.*, **5(1)**: Jan-Mar 2017, (107-120). (In Persian)
- 528 Kotwani N. 2020. Performance appraisal: Evaluation of employees performance. *Iconic res. eng.*  
529 *j.*, **3(10)**:150-1
- 530 Seyedjavadin, S.R. and Moshfegh, M. 2008. Survey the effect of staff performance evaluation on  
531 performance improvement in the studied university: Imam Sadegh university. *Strateg.*  
532 *Manag. Thought.* **2(2)**: 95-122.
- 533 Imran, M., Norasyikin, S., Aziz, A. and Wan, Ch. 2019. The effect of performance appraisal  
534 politics on employee performance in Emergency Services of Punjab, Pakistan. *Acad. Strat.*  
535 *Manag. J.*, **18(1)**: 1-7.