



Prioritization of the Reasons for Desertion from Military Service in the Islamic Republic of Iran: A Quantitative Study

Mehdi Khosronia¹

Abstract

Introduction: Conscripts are one of the most critical elements of the corporate body of the Islamic Republic of Iran's army. Therefore, keeping soldiers safe from potential harm impacts improves military performance. Desertion from military is one of the results of possible psychological/physical injuries, whose control is rooted in the precise identification of those injuries as the reasons leading to the desertion of soldiers.

Objective: The present study has been carried out while adopting a quantitative approach to prioritize the reasons for desertion from military service.

Materials and methods: The present study used library and field methods to collect the reasons for desertion from military service. The results of these two methods formed the qualitative data of the research. In the following, the qualitative data were converted into quantitative data, weighted, and then prioritized using the TOPSIS method, one of the popular methods used in multi-criteria decision-making (MCDM).

Results: Based on the results obtained from the TOPSIS method, the most important reasons for desertion from military service were prioritized as follows: economic issues> psychological problems> service time> social injuries> pressure from fellow service members> behavior of cadre personnel> place of service> commanders' management> sexual issues.

Discussion and conclusion: The quantitative approach used in the current research makes it possible to prioritize the reasons behind desertion from military service with high accuracy and is considered a complement to previous qualitative research. Finally, this research suggests the government put its result into consideration for better management of military desertion.

Keywords: Runaway behavior, Soldiers, Quantitative study

¹ PhD Candidate, Department of Management, Industrial Engineering Faculty, Malik Ashtar University; Tehran, Iran

Introduction

Armed forces are the spinal cord of each government. Powerful, disciplined, and trained armed forces defend territorial integrity, protect national independence and national interest, and establish public order and security in a country [1]. Conscripts are the main members of the body of armed forces [2]. The conscription system is a common phenomenon in most countries, and the Islamic Republic of Iran is no exception. All male nationals of the Islamic Republic of Iran's government who are obliged to do general military service according to the rules and regulations are called service members [1]. Despite growing technical, scientific, technological, and technical developments, no agent has ever replaced the manpower in military organizations [3]. For this, maintaining manpower, including service members, is one of the main and inherent duties of these organizations [4]. Military service is seen as the stage of transference from adolescence to the labor and production period, which helps form peoples' character; thus, it is very important [2]. In addition to providing such opportunities as the experience of independent life, increasing the threshold of tolerance, and frugality, strengthening communication and social skills, exercising tolerance and patience, responsibility taking, and enforcing lawfulness and order, military service can also involve such disadvantages as increasing false demands for continuing study, failure to use soldiers' expertise, economic woes, etc. [5, 6]. Challenges of this kind could have different

consequences, of which military desertion is the most important.

Military desertion refers to the abandonment of one's service post or unit without the intention of returning [7]. According to the rules and regulations of the Islamic Republic of Iran's Military Duty Organization, the service member who quits his place of service or training without leave for over 15 consecutive days is called a deserter [8]. Data indicate the growing trend of military desertion in Iran [19]. Most previous studies have pointed to the intra- and extra-organizational factors as the most important factors causing desertion [9]. Mo'emn pour argues that social and cultural problems with the conscription system, failure to use soldiers in their city of residence, failure to use the expertise of graduate soldiers, delays in marriage, etc. are the most important factors that lead to soldiers' lack of motivation [10, 6]. In a qualitative study, Javad Ashtiani et al. investigated the causes of military desertion, demonstrating that the combined effects of personality reasons (e.g., soldiers' psychological status), intra-organizational reasons (e.g., the lack of welfare facilities), and inter-organizational reasons (e.g., soldiers' family status) could cause soldiers to desert [11].

This study addressed intra- and extra-organizational factors, along with personality factors. Nouri et al. used the LISREL Structural Equation Test to prioritize eight major duties of commanders in preventing conscripts' desertion [12]. They demonstrated that mediation with solving service members' communication problems, guiding soldiers, and conducting specialized studies about them were the three major duties of commanders to prevent desertion. Kamalvand et al. did a case study about the first airborne base of Mehr Abad, suggesting that somatic and mental diseases, distress, and difficult climates could be regarded as extra-organizational factors, while discrimination at the place of service, harassment at the hand of senior soldiers, and lengthy service periods were the intra-

organizational factors, which had the highest effects on desertion [13, 14].

The judicial organization of armed forces investigated the status of soldiers imprisoned in nationwide prisons to conclude that social, cultural, and familial variables and the maladaptation of service members were the most important extra-organizational factors, while soldier punishment and service period stresses were the most important intra-organizational factors [15]. Zarei also identified and investigated eight extra-organizational factors affecting personal desertion, concluding that economic woes, the lack of motivation, and dark relations were respectively regarded as the three main extra-organizational factors affecting soldiers' desertion [16]. Sanchuli divided reasons for military desertion into intra- and extra-organizational factors. Accordingly, commanders' negligence was the main intra-organizational reason, while the lack of motivation, negative propaganda, economic issues, etc. were the main extra-organizational factors of military desertion [17].

Military service members' desertion in other countries is also a major issue. A comparison of studies done in Iran and in other countries and attention to existing similarities can be very effective in an accurate evaluation of the reasons for military desertion. Ares et al. investigated 2705 11th and 12th graders in Israel to suggest that 54% of them were willing to quit military service [18]. In Israel, military service is mandatory, which is projected to last at least 32 months for men and at least 24 months for women [19]. This study indicated that the growing willingness to abandon

service in Israel was due to the negative effect of globalization on soldiers' commitment to their country [18]. In the mid-2010s, around 2000 Eritreans fled their country for deserting from the army. In Eritrea, military service is mandatory for men and women. Also, national service following the completion of training courses will be unlimited [20]. In Russia, military service for all men aged 18-27 is mandatory. However, half of all conscripts called up for duty, i.e., around 75000 conscripts, refuse to participate in the service [21]. Kelly et al. indicated that the number of military deserters in the U.S. Army from 1991 to 2001 reached 1%, which showed a growing number [22]. Multimaki et al. did a study in Finland and suggested that excessive alcohol and drug consumption as well as stressful relations with peers, friends, and families were among the main reasons for temporary abandonment of military service [23].

The present study used questionnaires completed by soldiers with the experience of desertion to identify the most important reasons for deserting military service. Then, qualitative data were converted and prioritized into quantitative data using the TOPSIS method. The quantitative approach in prioritizing the reasons for desertion can complement the qualitative method of previous studies for the study of military desertion. It can also be regarded as a move forward to quantitatively investigate the reasons for military desertion. Considering the growing number of desertions among military service members, and despite all studies done in this area, it is very important to accurately understand the reasons for military desertion. Using the TOPSIS method in this study was done with the same goal. The TOPSIS method, while being a simple method, enjoys the good speed and is effective in resolving multi-criteria problems. Moreover, this method helps facilitate decision-making in quantitative and qualitative criteria. As well, the conversion of qualitative criteria into quantitative criteria can be done easily with this method. In TOPSIS, it is possible to examine several criteria for prioritization. Meanwhile, other similar

methods face limitations. Furthermore, TOPSIS takes into account the weights of all criteria to minimize the possibility of their ignorance in the final decision-making [24]. In sum, the present study takes a big stride in the identification of the reasons for military desertion among service members.

Materials and procedure

This study collected key data by using library and field methods. In the library method, the views of experts and theorists of the military field were collected. A summary of these theories is presented in the prelude to the present article. In the field method, questionnaires were provided to soldiers with experience of desertion. The results of the library and field methods produced the most important factors of desertion. These factors constituted the qualitative data of the study. Later, the TOPSIS method, which is the main subset of multi-criteria decision-making (MCDM), was used to convert and prioritize qualitative data into quantitative data.

In modern management, decision-making in unstable complicated environments is highly important. In most decision-making issues, various factors are generally raised and the deciding individual has to choose the best option (s) from among several limited or unlimited options. Multi-criteria decision-making (MCDM) has been a more effective method to investigate multi-dimensional and conflicting problems. In multi-criteria models, several measurement criteria may be used instead of using an optimal measurement criterion. This decision-making technique involves a set of qualitative and quantitative factors.

Because multi-criteria are preferable over single-objective models, multi-criteria models are nowadays becoming more popular in complicated decision-making. In this decision-making, several criteria are used instead of one single criterion multi-criteria decision-making (MCDM) not only reduces costs and time but also increases the accuracy of decision-making.

In general, the conversion of qualitative criteria into quantitative criteria, making criteria without scales, and determining the relative weights of criteria are the three main stages of multi-criteria decision-making. Multi-criteria decision-making models are divided into two main categories of multi-objective models and multi-attribute decision-making (MADM). Because of the complexity of the category of desertion among soldiers, various factors affecting desertion, and the complicated relations between these factors, it is required to use multi-criteria models to accurately investigate such a category. Subsequently, it was key to adopt an appropriate method to optimally account for the present study's questions. For this, the TOPSIS method was used to prioritize the reasons for desertion.

TOPSIS is one of the multi-criteria decision-making (MCDM) methods, which was first developed by Hwang and Yoon in 1981, and then expanded by Yoon in 1987 and Lai and Liu in 1993 [24]. The TOPSIS method can be used to compare and rank options, and choose desirable option (s), to determine and group distances between options. The TOPSIS method includes six main stages forming a decision matrix, decision matrix normality, determining a positive ideal solution and a negative ideal solution, obtaining the distance of each option from positive and negative ideals, determining the coefficient of closeness for each of the options, and rank the options based on the coefficient of closeness. In this method, comparative criteria can have different units of measurement from each other. In other words, comparative criteria can have positive and negative nature. Thus, in the TOPSIS method, negative and positive indices can be used in a combined form. In this method, the best option is the closest option to the

ideal option and the farthest option from the non-ideal option. The ideal option is the option that involves the highest profit and the lowest costs, while a non-ideal option is the one that involves the lowest profit and the highest costs. Therefore, an ideal option comes from the maximum sum of values of each of the criteria, whereas the non-ideal option is obtained from a minimum sum of the values of the criteria. After qualitative data were extracted from the library and field methods, qualitative data were converted into quantitative data using the TOPSIS method. Then, quantitative data were compared and prioritized. Based on the prioritization of quantitative data, qualitative data were prioritized. Thus, the most important factors affecting soldiers' desertion were successfully identified.

Findings

According to library and field studies, six positive and negative qualitative indices were selected. Thus, none options were identified in the stage of selecting options. The six qualitative positive and negative indices were 1: age

(negative aspect of C1), 2: education (positive aspect of C2), 3. Marriage status (positive aspect of C3), 4. Economic situation (positive aspect of C4), 5. Social position (positive aspect of C5), and 6. Mental status (negative aspect of C6). The nine selected options were 1. Service time (A1), 2. Mental problems (A2), 3. Economic issues (A3), 4. Personnel behavior (A4), 5. Service place (A5), 6. Social harms (A6), 7. Service peer pressure (A7), 8. sexual issues (A8), and 9. Commander management (A9).

In the following, findings from implementing the TOPSIS algorithm are presented. In the first stage, data matrices were formed after scoring the indices. In the second stage, the decision-making matrix was converted into a scale-free matrix. In the next step, the scale-free matrix was converted into the symmetrical scale-free matrix. According to formula 3, the k value is 0.45512. Using this value, E, d, and W values ate calculated. Thus, d was calculated to be 0.075606. Later, the V value was calculated. In the next stage, positive and negative ideals were determined for each index. All the values are given in Table 1. In Table 2, the distance from the positive ideal and the distance from the negative ideal, and the relative closeness of each option to an ideal solution are given. As stated, the formulae used in each stage are as follows:

$$(1) \quad n_{ij} = \frac{a_{ij}}{\sqrt{\sum_{i=1}^m a_{ij}^2}}$$

$$(2) \quad P_{ij} = \frac{a_{ij}}{\sum_{i=1}^n a_{ij}}; \forall i, j$$

$$(3) \quad k = \frac{1}{\ln(m)}$$

$$(4) \quad E_j = -k \sum_{i=1}^m [p_{ij} \ln p_{ij}]; \forall j$$

$$d_j = 1 - E_j ; \forall j$$

(5)

(6)

$$w_j = \frac{d_j}{\sum_{j=1}^n d_j} ; \forall j$$

(7)

$$d_j^- = \sqrt{(\sum_{i=1}^m v_{ij} - v_j^-)^2}$$

(8)

$$d_j^+ = \sqrt{(\sum_{i=1}^m v_{ij} - v_j^+)^2}$$

(9)

$$CL_1 = \frac{d_j^-}{d_j^- + d_j^+}$$

Finally, according to the calculations, c1 values were obtained, and the options were respectively ranked based on the order of importance: economic issues >

mental problems > service time > social harms > peer pressure > personnel behavior > place of service > commanders' management > sexual problems.

Table 1: Stage-by-stage data of TOPSIS

Data Matrix

D	C1	C2	C3	C4	C5	C6
A 1	4.41	2.75	4.58	5.58	5.41	5.83
A 2	5.5	3	5.16	5.66	5	5.33
A 3	5	3.75	5.6	6.16	4.75	5.83
A 4	4.5	3.08	3.66	3.16	4.41	3.91
A 5	4.83	3.41	3.08	3.25	4.41	3.41
A 6	3.41	3.25	2.75	4.75	5	5.08
A 7	4.58	3.08	4.58	3.33	4.5	4.5

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A 8	4	2.25	2.5	2.91	2.83	2.83
A 9	2.66	4.83	2.83	2.5	3.91	5.16
Σ a	38.8 9	29.4	34.7 4	37.3	40.2 2	41.8 8

Scale-free matrix

N *	C1	C2	C3	C4	C5	C6
A 1	0.33 4	0.27 4	0.38 1	0.42 8	0.39 8	0.40 8
A 2	0.41 7	0.29 9	0.42 9	0.43 4	0.35 0	0.37 3
A 3	0.37 9	0.37 4	0.46 5	0.47 2	0.32 5	0.40 8
A 4	0.34 1	0.30 7	0.30 4	0.24 2	0.32 5	0.27 3
A 5	0.36 6	0.34 0	0.26 5	0.24 9	0.36 8	0.23 8
A 6	0.25 9	0.32 4	0.22 8	0.36 4	0.33 1	0.35 5
A 7	0.34 7	0.30 7	0.38 1	0.25 5	0.20 8	0.31 5
A 8	0.30 3	0.22 4	0.20 7	0.22 3	0.20 8	0.19 8
A 9	0.20 1	0.48 2	0.23 5	0.19 1	0.28 8	0.36 1

Balanced scale-free matrix

W	C1	C2	C3	C4	C5	C6
A 1	0.11 3397	0.09 3537	0.13 1836	0.14 9598	0.13 4510	0.13 9207
A 2	0.14 1425	0.10 2041	0.13 8532	0.15 1743	0.12 4316	0.12 4268
A 3	0.12 8568	0.12 7551	0.16 1119	0.16 5147	0.11 8100	0.13 9207
A 4	0.11 5711	0.10 4762	0.10 5354	0.08 4718	0.10 9647	0.09 3362
A	0.12	0.11	0.08	0.08	0.10	0.08

5	4196	5986	8659	7131	9647	1423
A	0.08	0.11	0.07	0.12	0.12	0.12
6	7683	0544	9159	7346	4316	299
A	0.11	0.10	0.13	0.89	0.11	0.10
7	7768	4763	836	276	1885	7450
A	0.10	0.07	0.07	0.07	0.07	0.06
8	2854	6531	1963	8016	0363	7574
A	0.06	0.16	0.08	0.06	0.09	0.12
9	8398	4286	1462	7024	7215	3209

E values

	E1	E2	E3	E4	E5	E6
	0.98	0.99	0.97	0.98	0.99	0.99
	8781	3826	7498	2164	0621	1503

d values

	D1	D2	D3	D4	D5	D6
	0.00	0.00	0.01	0.02	0.00	0.01
	8497	9379	7836	2502	6174	1219

Values W

	W1	W2	W3	W4	W5	W6
	0.11	0.12	0.23	0.29	0.08	0.14
	238	405	5901	7624	653	8391

Values V=n*W

*	C1	C2	C3	C4	C5	C6
A	0.03	0.03	0.08	0.12	0.03	0.06
1	7535	399	9878	7383	2498	0543
A	0.04	0.03	0.10	0.12	0.03	0.05
2	6863	7091	1202	9169	0048	535
A	0.04	0.46	0.10	0.14	0.02	0.06
3	2592	395	9694	0478	8579	0543
A	0.03	0.03	0.07	0.07	0.02	0.04
4	8322	8083	1714	2025	6537	0511
A	0.04	0.04	0.06	0.07	0.02	0.03
5	1131	2177	0391	4108	6537	5317
A	0.02	0.04	0.05	0.10	0.03	0.05
6	9106	0192	3785	8335	0048	2679
A	0.03	0.03	0.08	0.07	0.02	0.04
7	8996	8083	9878	5894	7027	6743
A	0.03	0.02	0.04	0.06	0.01	0.02
8	4051	7787	8832	637	6984	9381

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A	0.02	0.05	0.05	0.05	0.02	0.05
9	2588	9792	5437	6846	3516	3569

Positive and negative ideals for each index

	C1	C2	C3	C4	C5	C6
V	0.02	0.05	0.10	0.14	0.03	0.29
+	2588	9792	9694	0478	2498	3810

	C1	C2	C3	C4	C5	C6
V	0.04	0.27	0.04	0.05	0.01	0.06
-	6863	787	8832	6846	6984	0543

Table 2: Closeness of each option to an ideal value

	Distance from negative ideal	Distance from positive ideal	C1
A1	0.083824	0.049238	0.629961
A2	0.09087	0.044553	0.671009
A3	0.105818	0.39574	0.727814
A4	0.037756	0.083805	0.31085
A5	0.037405	0.086952	0.300788
A6	0.058115	0.071655	0.447832
A7	0.050069	0.075071	0.400103
A8	0.035013	0.102921	0.25839
A9	0.041815	0.102297	0.288797

Discussion and conclusion

The present study aimed to prioritize the reasons for military desertion in the Islamic Republic of Iran’s army. In various studies, researchers have adopted a qualitative approach to investigate the reasons for military service members’ desertion. However, the crisis of military abandonment has always been a major problem with Iran’s army. This indicates the serious need to complement previous studies to achieve

a final solution to control the said crisis. In this connection, the adoption of a quantitative approach in grouping and prioritizing the reasons for desertion seems to be a missing link in the previous studies. Naturally, adopting a quantitative approach can help accurately explain the previous qualitative studies. Furthermore, using an appropriate quantitative method can be very effective in explaining complicated relations between the reason for military desertion. Previous qualitative studies had emphasized the combined nature of factors leading to military abandonment. The identification of the said

combined nature will be only limited to library and field observations, without appropriate quantitative modeling. The present study used the TOPSIS method as a multi-criteria decision-making method to fill in the research gap. The TOPSIS method has the advantages of significant accuracy, saving time, helping multi-criteria decision-making, ease of use, and accurate prioritization, and for this, it can be used to quantitatively investigate the reasons for military desertion. Accordingly, the reasons for military desertion were respectively prioritized as economic issues > mental problems > service time > social harms > peer pressure > personnel behavior > place of service > commanders' management > sexual problems. In sum, the results are suggested to be investigated in macro-level policy-making to manage the category of military desertion. As well, researchers can also adopt an appropriate quantitative approach to better outline the reasons for service desertion. Thus, quantitative studies in this connection can, along with previous qualitative research, serve as an effective tool on how to manage this very important category.

Conflict of interest

The author hereby declares that there is no conflict of interest regarding the present study.

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