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Critical success factors on credit field in export development bank of Iran and prioritizing them by analytic hierarchy process

Mohammad Reza Kabaranzade Ghadim, and Amir Hossein Kordnouri

PhD, Assistant Professor, Azad Islamic University, Central Tehran, Iran
Graduate, Entrepreneurship Management, Azad Islamic University, Central Tehran, Iran
Email: kabaranzad@yahoo.com

ABSTRACT

Present paper aims at identifying and studying critical factors on credit in Export Development Bank of Iran (EDBI) and prioritizing them by analytic hierarchy process (AHP) approach. By reviewing studies on critical success factors in the field of credit of banks, relevant factors are extracted and by using the opinions of experts and credit customers, critical success factors are extracted and identified. Finally, 20 success sub-factors are identifies and categorized in three main groups including employees, facilities and credit infrastructures. By using AHP, critical success main and sub- factors are prioritized by credit experts and customers. According to results from experts, credit infrastructure has the highest importance among critical success factors followed by credit facilities, services and infrastructures. By analyzing the data, the hypothesis of this research were explored and it was found that among the critical success factors only infrastructural loans factor was of great difference in the view points of experts and customers. Also, in the subgroup factors some useful results were gained that they are completely explained in the research. Considering the obtained results and priorities and considering available resources and facilities, credit managers and decision makers are able to plan to improve status quo.

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Keywords

Export Development Bank of Iran (EDBI), critical success factors, experts, Analytic Hierarchy Process (AHP)

INTRODUCTION

Critical success factors are tools to measure an organization's performance to achieve its missions (Zavavaya et al, 2011). Therefore, critical success factors are inside an organization and they should be identifies and explored. Lack of attention to such factors would expose whole system to failure (Razavi and Sabeti, 2010). Watson and Frolik (1993) believe that critical success factors should be determined and respected rightly if an organization plans to succeed. In another definition, Bruno and Lidker assert that critical success factors include features, conditions or variables which can have a remarkable impact on organizational competitiveness if they are managed well. Pinto and Slovin (1987) consider critical success factors as the factors which improve the chance of conducting the projects remarkably. According to Karalli (2004), critical success factors are key points of organizational performance necessary to achieve the mission and they will become common points to realize organizational goals if they are clearly expounded. According to above pints, a current problem is how to identify critical success factors in credit field of EDBI and planning to improve and control them. To this end, they are identified by experts and customers of credit field in EDBI and they are then prioritized by AHP. Present paper is organized in four parts. The second part is on research background on critical success factors and conducted studies in this field especially in banking. Part 3 explains methodology and research findings are submitted in part four. Ultimately, by identifying critical success factors on credit field in EDBI by credit customers and banking experts, relevant factors are investigated and

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some recommendations are provided to improve this field in surveyed bank.

Background

There are many definitions on critical success factors. In 1960s, Ronal Daniel coined critical success factors concept. However, the concepts and approaches on critical success factors have become stronger today. An early definition is provided by Rucart (1979). According to him, critical success factors are fields which can guarantee successful competition and efficiency if they realized. They should be constantly monitored and protected. By reviewing conducted studies, one can see that various studies are conducted in this regard while critical success factors on banks' credit field is not addressed in particular. In 2008, in a study titled "affecting factors on increase is customers' savings in Rafsnajan Tejarat Bank branches (in terms of customers)", the most important affecting factors on increases in savings by customers are addressed and concluded that improving social relations between employees and customers, employees' well personal traits, promotions, paid earnings and desired services are all important factors (Maghuinejad, 2008). In 2006, Yazdani Dehnavi conducted a study titled "effective factors on the success of banks and financial companies in equipping monetary resources" and asserted that ITC, skills, bank's human forces, the diversity and quality of banking services, customer satisfaction, internal environment utility and location of branches are important tools used to attract optimized monetary resources. In their study titled "a comparative study on affecting factors in the success of public and private banks (in terms of customers)", Rasulian and Pourabedin (2009) mentioned seven affecting factors including bank branches positioning, banking service quality, banks' promotional activities, banking service costs, how to conduct banking operations, employees' demeanor and physical facilities of branches. Zadmehr (2011) conducted a study titled "identifying critical success factors on business process management in Bank Mellat branches" and introduced four strategies extracted from evidences and interviews in terms of priority: mitigating the time of service delivery, customer satisfaction, paying minor facilities by short term reimbursements and cost mitigation. In their study on "identifying and rating e-banking critical success factors", Molk Akhlagh et al (2011) identified 27 success factors and categorized them in six groups (strategic, technical, administrative, data, stakeholders and resources). In their paper titled "studying affecting factors on CRM success in Bank Melli branches in Terhan", Momeni et al. (2013) identified knowledge management, customer orientation, marketability and CRM technology as affecting factors on CRM. In his study titled "critical success factors on formulating different strategies in banking industry", Chen (1999) identified 25 critical success factors to recognize different compounds of such factors in banking industry: banks' reputation and its good mental perception, bank's status (the possibility of operation and transportation), the number of branches, the quality and quantity of delivered services by bank, interest and commission rates, security, kindness and courtesy of staff, the velocity of services, employees' knowledge and skills, long experience in CRM, management capability of bank manager, the power of managing assets and debts, the ability to control and monitor internally, mechanization ability, bank system health, attracting the savings, being active in providing new services, service development based on customers' demands, segmenting the market and executing marketing plans by each segment, constant promotions, sufficient incentives for personnel, competition analysis, right forecasting on banking industry in future, successful stock and security market and deregulation. In his research on executing business process management in micro banking, Sarang (2005) studied the relationship between business process management and banking industry performance in South Africa. He compared business process management and reengineering of processes, critical success factors and consistency of processes and strategies. The main impetuses in managing the processes include agility, productivity and constant improvement. Yung and Jang (2006) studied long term profitability in Taiwanese banks and concluded that banking services are the most important factor in profitability of bank branches. Also, bank's employees are seen as the most important factor in achieving profitability. Cheng and Chiu (2008) studied critical success factors on business reengineering in Hong Kong banking industry. They found four main

factors including management commitment; focus on customer, using IT and constant changes and development as functional tools to evaluate reengineering business process in banking. In 2010, Trkman studied critical success factors in business process management in Sky Bank in Slovenia. His findings indicated that the success of business process management principles impact on identifying conditional variables on bank strategy. Critical success factors are seen in all organizational level and can extracted from varied resources. Therefore, by strategic planning and determining macro aims, high-level critical success factors will convert into low – level ones. In other word, we cannot achieve high – level critical success factors otherwise to execute low – level ones (Carali, 2004). Likewise, identifying critical success factors should be done in different level such as organizations, units and even in particular workgroups. If executed well, this process can be used in different levels such as organizations and industries and even in broader social, economic and political levels (Zhou et al, 2010). Today, common approaches are used to extract critical success factors such as AHP. In this paradigm, critical success factors are extracted to realize strategic plan and macro goals of the organization in four different levels and relationship is created among them. In such relationship, critical success factors should be equal in all levels and lower level factors should lead into high level ones (Carali, 2004). Therefore, by reviewing conducted studies, present papers attempts to identify critical success factors in banks and after collecting the opinions of credit experts in EDBI, critical success factors should be determined in EDBI and its hierarchical structure is explained as below.

METHODOLOGY

In present study, research process (the steps to measure critical success factors) is depicted in figure 1.

Hierarchical structure of critical success factors in credit field

To design as hierarchical structure for critical success factors in EDBI credit field, all critical success factors used in past studies and models are used and by considering special tasks of EDBI, relevant critical success factors were determined by eliminating the deficiencies, using the opinions of instructors, experts and customers of the bank and using a polling form. Then, adaptable critical success factors were categorized in four groups as shown in figure 2. As seen, sub critical success factors are classified in three groups: employees, facilities and credit infrastructures.

Population

In this research which is done in service section, the population of the study Consists of two group. First experts who work in loan sections of Tehran branches now a days and second group are the customers of all branches of Tehran province who are now in continual contacts with the bank. It means that these customers have debts to the banks or are in the process of receiving loans or services from the bank and thesis because of the professional nature of this bank. In present research conducted in service sector, the relevant population consists of customers of all EDBI branches in Tehran province with constant relationship with bank. It means that they have either debts and/or are in the process of receiving facilities and services. This is due to specialized nature of the bank.

In present study, experts and customers are sampled and relative layer sampling method is used. Thus, the population was divided into separated layers and then relevant tests were conducted (Pouashraf, 2004). Therefore, experts and customers are selected in 5 branches of EDBI in Tehran. In this way, 3 experts and 3 customers are selected randomly in each branch and their information is collected by distributing 30 questionnaires.

Data analysis technique

To prioritize critical success factors and in accordance with figure 2, AHP technique is used. It was coined by Thomas L. Saati in 1970s and is now extraordinarily accepted worldwide so that one can point out thousands of papers and theses which have used this technique (Foreman and Ferguson, 2001). Later, this technique found rapidly its way in different engineering, basic and human sciences and it is seen as one of the best and most precise methods to rate and decide based on several indicators. To some extent, it works like human brain. One of its interesting features is that it makes it possible for decision maker to involve its personal judgments and experiences in the process

of decision making problem in addition to problem goals. On the other hand, it is designed so that one can degrade big and complicated problems and to simplify problems understanding and resolve (Ghodsipour, 2005). Another feature of AHP is the possibility to such software as Expert Choice (EC). It empowers decision maker to use this technique in resolving decision making problems by high velocity and care (Khatami Firouzabadi and Hamzeh Jonghani, 2013). In this manner, the opinions of selected customers and elites are gathered by a questionnaire in which preferences are determined for paired comparisons in accordance with table 1 (Ghodispour, 2005). In present technique, each respondent is asked to rate measures and sub-measures in a 1-9 scale in which 1 = indifference and 9 = absolute importance (Anand and Herras, 2008; Denge, 1999; Mikhailo, 2003; Saati and Vargas, 2001).

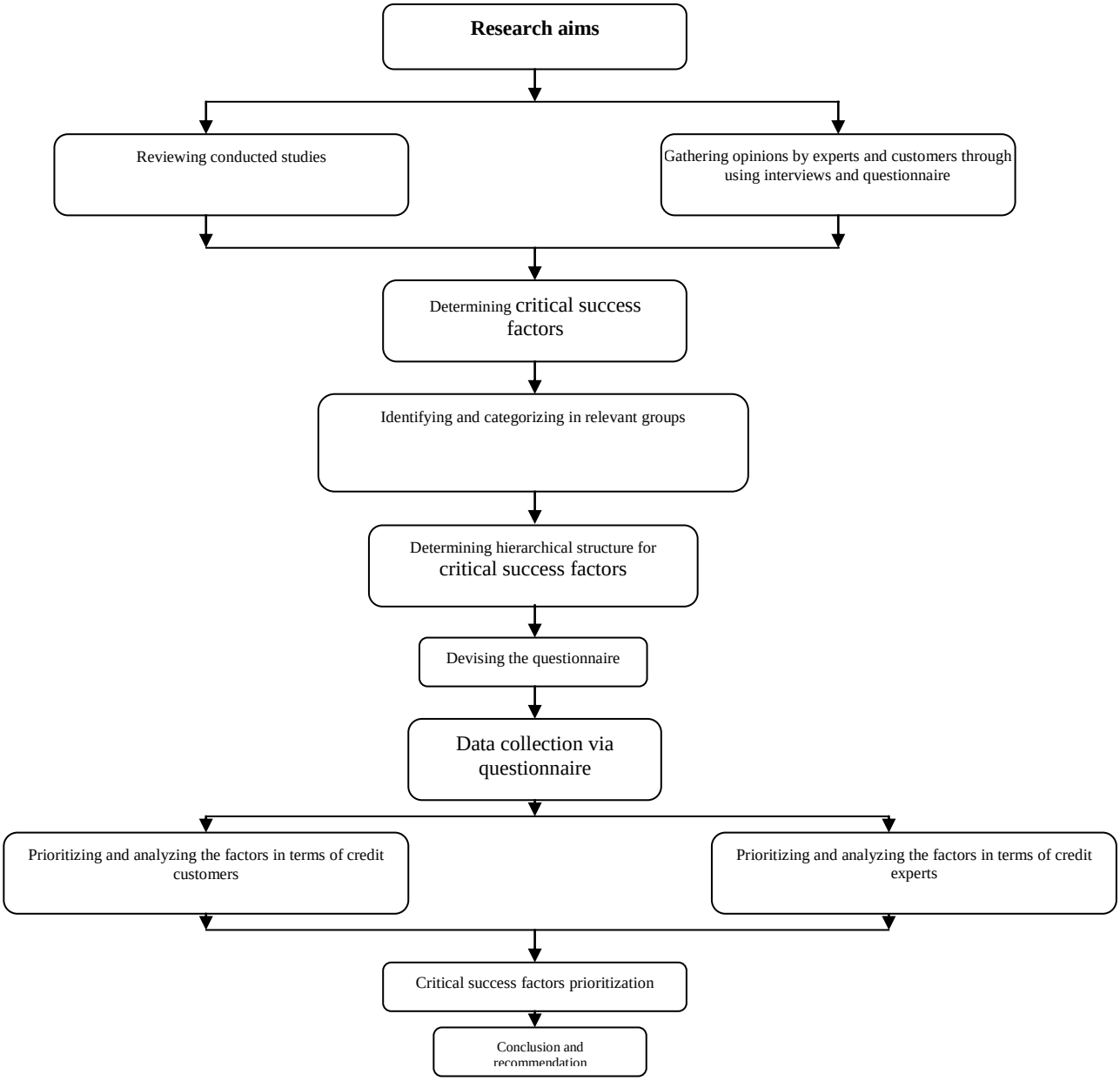

Figure 1. research process

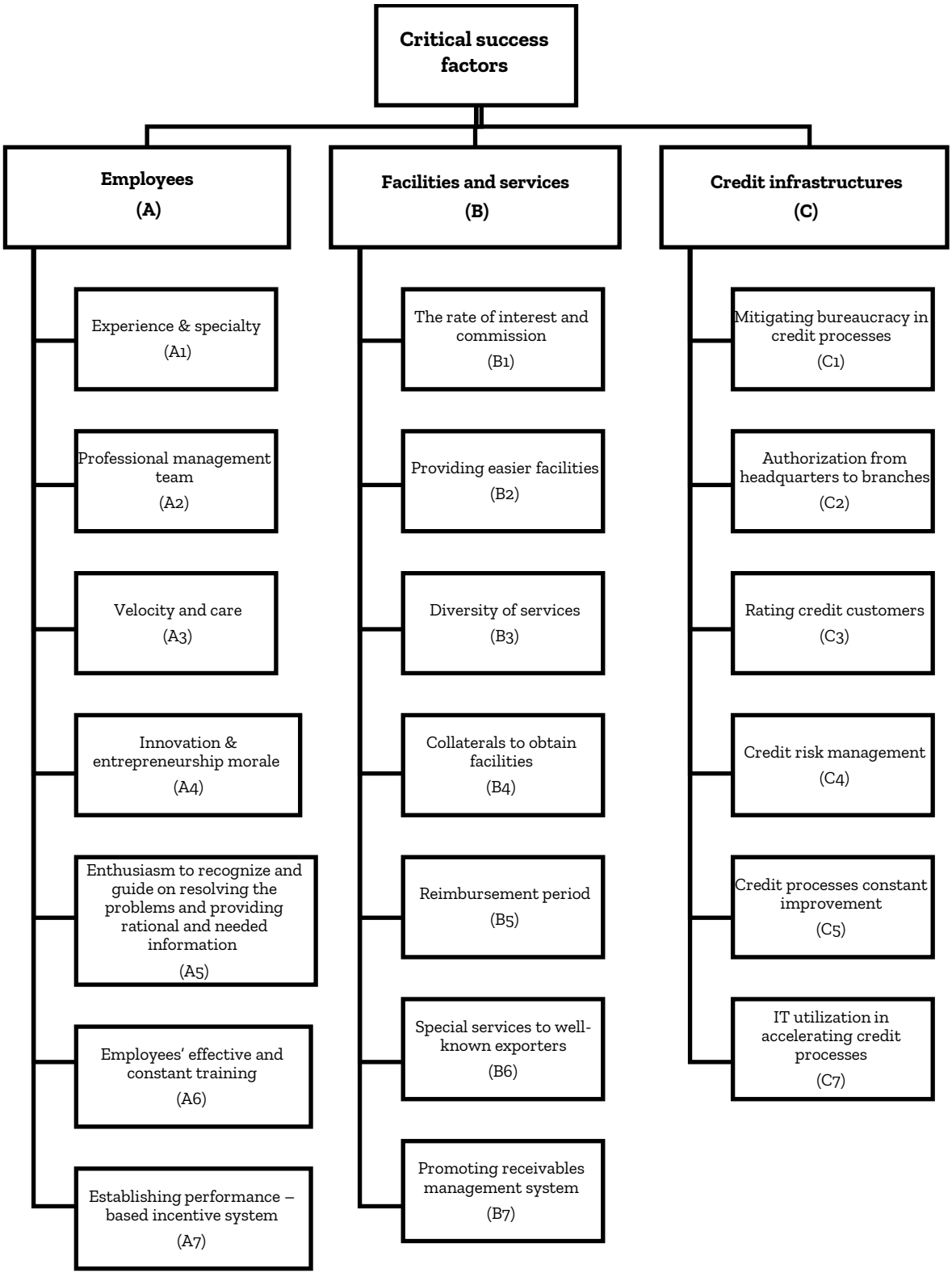

Figure 2. Hierarchical structure of critical success factors in EDBI credit field

Table 1. Preference values for paired comparisons

1	Indifference
3	More important
5	Strong importance
7	Very strong importance
9	Absolute importance
2, 4, 6, 8	Scores between above intervals

Collective pair comparisons matrix

When there are a lot decision makers and radical difference among members on one member of the matrix, personal judgment techniques are used. In this way, AHP allows each decision maker to insert its desired value into matrix and then convert personal judgments to collective judgments (for each pair comparison) by using their geometrical average (Ghodsipour, 2005).

By considering equal weight for obtained ideas, geometric average technique is used to compute collective paired comparison matrix. Geometric average is the best method to align judgments in collective AHPO (Aczel and Saati, 1983).

Therefore, the components on collective pair comparison matrix are computed as equation (1):

$$\bar{a}_{ij} = \prod_{k=1}^{N} \left(a_{ij}^{(k)}\right)^{1/N} \qquad (1)$$

$a_{ij}^{(k)}$ is *i*th row element and *j*th column of k*th* paired comparison matrix and N is the quantity of respondents. Therefore, by equation (2) we have:

$$\bar{a}_{12} = \left(a_{12}^{(1)} \times a_{12}^{(2)} \times \ldots \times a_{12}^{(k)}\right)^{1/N} \qquad (2)$$

Where $\bar{a}_{12}$is collective judgment on a_{12}.

After computing geometric average, the outcome of N compared matrix elements is achieved by a collective pair comparison matrix.

Computing the weights of indicators

To achieve the weights of indicators, total values of each column are computed first. Then, each element in collective compared matrix is divided in its total column to normalize pair comparison matrix (total normalized value is 1). Finally, the average of elements in each row is computed by EC in order to determine weight vector.

Computing inconsistency rate

Inconsistency rate of each A matrix can be computed as below:

1. To for a pair A matrix
2. To determine weight vector (W)
3. To estimate $_{max}\lambda$ (L)
4. To compute Inconsistency Index (I.I)
5. To compute Inconsistency Rate (I.R)

Overall, one can say that acceptable amount of a matrix inconsistency depends on decision maker. However, Saati introduces 0/1 as the acceptable level and believes that if inconsistency amount is greater than 0.1, it is better to revise judgments (Ghodsipour, 2005).

RESULTS

Considering hierarchical structure of critical success factors in bank credit field and obtained information through questionnaire, the results of prioritizing main and sub- critical success factors and relevant inconsistency rate by Expert Choice software package are as below:

As seen in table 2, the main priority of critical success factors in EDBI credit field in the view of experts credit infrastructure, employees and facilities (services) while they are employees, facilities and infrastructures in terms of credit customers. Based on table 3, 4 and 5, the priority of sub factors in terms of experts and customers can be seen.

Prioritizing critical success factors in terms of credit experts and customers

a. Main factors (Table 2)

b. Minor factors (Tables 3-4)

Table 2. Prioritizing main factors based on weights by both groups

Group	Weight	Inconsistency rate	Rank
Credit experts	W_A=0.277	0.06	2
Customers	W_A=0.562	0.01	1
Credit experts	W_B=0.099		3
Customers	W_B=0.301		2
Credit experts	W_C=0.624		1
Customers	W_C=0.137		3

Table 3. Prioritizing sub critical success factors for employees by both groups

Group	Weight	Inconsistency rate	Rank
Credit experts	W_{A1}=0.243	0.06	2
Customers	W_{A1}=0.260	0.06	2
Credit experts	W_{A2}=0.181		3
Customers	W_{A2}=0.381		1
Credit experts	W_{A3}=0.071		5
Customers	W_{A3}=0.128		3
Credit experts	W_{A4}=0.037		7
Customers	W_{A4}=0.029		7
Credit experts	W_{A5}=0.047		6
Customers	W_{A5}=0.092		4
Credit experts	W_{A6}=0.100		4
Customers	W_{A6}=0.041		6
Credit experts	W_{A7}=0.320		1
Customers	W_{A7}=0.070		5

Table 4. Prioritizing sub critical success factors for facilities by both groups

Group	Weight	Inconsistency rate	Rank
Credit experts	W_{B1}=0.260	0.05	2
Customers	W_{B1}=0.222	0.06	2
Credit experts	W_{B2}=0.370		1
Customers	W_{B2}=0.130		3
Credit experts	W_{B3}=0.058		5
Customers	W_{B3}=0.035		6
Credit experts	W_{B4}=0.148		3
Customers	W_{B4}=0.374		1
Credit experts	W_{B5}=0.083		4
Customers	W_{B5}=0.085		5
Credit experts	W_{B6}=0.033		7
Customers	W_{B6}=0.130		3
Credit experts	W_{B7}=0.048		6
Customers	W_{B7}=0.024		7

Table 5. Prioritizing sub critical success factors for infrastructures by both groups

Group	Weight	Inconsistency rate	Rank
Credit experts	W_{C1}=0.324	0.04	1
Customers	W_{C1}=0.098	0.06	4
Credit experts	W_{C2}=0.139		4
Customers	W_{C2}=0.154		3
Credit experts	W_{C3}=0.041		6
Customers	W_{C3}=0.202		2
Credit experts	W_{C4}=0.067		5
Customers	W_{C4}=0.031		6
Credit experts	W_{C5}=0.177		3
Customers	W_{C5}=0.461		1
Credit experts	W_{C6}=0.252		2
Customers	W_{C6}=0.054		5

CONCLUSION AND RECOMMENDATIONS

Today, organizations are increasingly running their processes, customers, suppliers, products and services. Awareness toward organizational critical success factors has aided organizations in many cases and has made their decision making more effective. Therefore, present paper has identifies and prioritized relevant factors on using AHP approach as well as main and sub critical success factors in EDBI credit field by experts and customers. Based on results, bank managers and credit decision makers can improve the status of EDBI credit field by considering current facilities and resources through priorities announced by experts and customers.

Competing interests

The author declares that they have no competing interests.

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