

## Chapter 2

# SERVQUAL–Based Performance Analysis of Agricultural Financing in E–Banking Industry: An Evaluation by IT2 Fuzzy Decision–Making Model

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### ABSTRACT

*The aim of the study is to measure the effectiveness of commercial banks in the agricultural financing in Turkey. For this purpose, 10 different criteria are identified based on five different SERVQUAL perspectives. Moreover, 10 different Turkish deposit banks traded on BIST are taken into consideration in the analysis process. Interval type-2 fuzzy DEMATEL (IT2 FDEMATEL) method is used to weight the dimensions and criteria. Also, deposit banks are ranked with interval type-2 fuzzy TOPSIS (IT2 FTOPSIS). The findings show that flexibility of needs, branch availability, and qualified personnel are the most important criteria for agricultural financing. Hence, it is recommended that banks design a system in which customers can access the banks in flexible times related to the agricultural financing. Another important recommendation is that banks open new branches near the agricultural regions so that farmers can reach the banking services easily. Furthermore, banks should also improve their personnel for agricultural issues with necessary trainings.*

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## INTRODUCTION

The agricultural sector meets the compulsory vital needs of people in the country. In other words, meeting the food needs of the country depends on the agricultural sector. In addition to this, the agricultural sector contributes to the unemployment rate by providing employment in the country. Moreover, with the help of the agricultural sector, raw material is provided to agriculture-based industry. Also, through the export of agricultural products, the agricultural sector has a positive effect on the current account balance of the country (Sagib et al., 2015).

In contrast, the agricultural sector faces some difficulties in terms of its structure. As an example, there is periodic income as the agricultural sector depends on climate. Costs are continuous, although manufacturers need long-term waiting to reach revenue. On the other hand, in today's world, the agricultural sector must be connected to modern agricultural machinery rather than physical power. In this way, it will be possible to increase the efficiency of agricultural production. Therefore, agricultural producers need to provide financial support to have modern agricultural machinery (Antón & Cattaneo, 2019).

Banks are the financial institutions that play key role in agricultural financing. They can provide appropriate financial products to the farmers according to their demands. In this framework, loans with flexible maturity can be given to the farmers. Another important point is that operational procedures can be minimized for these people so that they can take loans easily. Additionally, appropriate credit cards can be designed to satisfy the liquidity needs of the farmers. Furthermore, necessary branches and ATMs can be opened near to the agricultural regions (Cook et al., 2015).

Hence, performance analysis of the banks related to the agricultural financing should be made periodically since they play a key role for this industry. In this circumstance, the essential point is that appropriate methodology should be chosen for this performance measurement. Otherwise, incorrect results lead to ineffective strategies. Therefore, performance management method should consider many different factors at the same time in order to reach more effective results.

SERVQUAL is the methodology that is used to measure service quality of the companies. This method has mainly 5 different factors. All physical aspects of the company are taken into account in the "physical appearance". The "reliability" aspect of the SERVQUAL model deals with how much customers trust the company. On the other side, "response" considers the time of the service provided. In addition to the mentioned issues, the confidence level of the employees to the company is discussed in "assurance" dimension. Finally, in the "empathy", sensitivity of the companies to the customers is evaluated (Galeeva, 2016).

In this study, it is aimed to measure effectiveness of Turkish banks for agricultural finance. The theoretical approach to the study is based on the 5 main components of service quality according to the SERVQUAL measurement model. First, the direction and magnitude of the interaction between these key elements will be measured by IT2 FDEMATEL method. Subsequently, with the help of the IT2 FTOPSIS method, Turkish banks are evaluated according to the performance results.

The main novelty of this study is presenting criteria set for the performance measurement of the banks regarding agricultural finance. Another novelty in our study will be the comparative analysis of public, private and foreign banks on the financing of agriculture. Another originality in our study is the analysis of the Turkish banks' performance in the financing of agriculture by integrating IT2 FDEMATEL and the IT2 FTOPSIS methods.

This study consists of 4 different sections. In this part, the main reason of selecting this topic is defined. In the second section, the studies focused on agricultural financing are classified and the missing part

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