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# Identifying the Effective Factors on Financial Performance of Bank Branches

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## Abstract

The main aim of this paper is to identify and distinguish the effective factors on financial performance of bank branches in Tehran. Identification of such factors is important because it can be a proper guideline to codify strategies and adaptive decision making in order to development and proper management of bank branches. To do this, there are many parameters to locate the bank branches and to control all these parameters, much time and costs are needed. While such of these parameters may be ineffective on location of bank branches. Hence, the study of key parameters can lead to saving time and money. On the other side, the integration of bank branches into state and private banks shows the existing problem related to determining in location of bank branches. In present study, after examining subject's discourse and conducting pre-planned and organized interviews with directors of state banks, we explain and describe the effective factors on financial performance of banks. According to these findings and collecting data and by using correlation analysis, 14 main factors which all are effective in bank's performance are introduced. These factors are: the age of bank branches, number of business units, population growth rate, number of illiterates, number of hotels and restaurants, number of residential units, the age between 50-45, 55-59, 60-64, 70-74, 75-79, more than 80-year-old and the number of wholesales. Therefore, each parameter is explained and discussed. At the end, based on these findings, many practical suggestions are presented for state and private banks.

**Keywords:** Financial performance, Branches of bank, Correlation analysis, Financial, Iranian bank, Statistical method.

## 1 | Introduction

These days, due to the existence of competition between banks and financial and credit institutions to attract more resources, mastery over the components that are effective in equipping financial resources has gained special importance.

The main goal of banks or any economic unit, is to increase its value, in addition to fulfilling social responsibilities. In order to achieve the main goal of the bank, increasing efficiency and productivity, increasing market share, increasing profitability, and growth and development are considered.

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Increasing profitability is one of the main and important goals of economic units; identifying factors affecting profitability can help financial managers to better understand the economic unit. Banks' profitability factors are divided into two factors under management control (internal) and outside management control (external).

Therefore, investigating the effective financial factors in the profitability of banks, considering the expansion of bank branches and the growth of private banks and financial and credit institutions across the country, and thus being present in the competitive market, is considered a necessity today.

Today, banks and other service organizations have established branches in different regions to cover a wider area while providing better services. The location of bank branches and financial institutions is an essential driver in attracting customers.

Because of the strategic importance of the decision phase related to the location of new bank branches, this is a significant phase of a bank's lifetime. Appropriate selection of location to construct bank branches that can meet all potential clients' demands as far as possible has a significant effect on raising the number of clients and finally on the bank's financial performance. Nowadays, banks need to enhance their financial performance in order to succeed in international markets and achieve worldwide competitiveness. The meaning of financial performance in this paper is the same as cost-benefit analysis, which shows the result of the financial performance of a branch by considering all comparable factors to money. It serves as a standard accounting formula.

# 2 | Literature Review

Keskin and Abdioglu [1] studied the financial performance of bank branches in Turkey by pervasion to the banking sector. They studied this by various types of research in 2 aspects: one is regional geographic variables, and the other aspect is the financial crisis in 2011. Findings show that the geographical scale of regions where branches are located, income levels of the region, number of tourists, and tourism attractions all affect positive financial performance of branches.

In 2003, researchers introduced the financial crisis in saving and the decline of providing financial facilities to clients in the years of 1980 and 1990 as a global commercial crisis in the banking industry in Turkey. Therefore, most of the bank branches were integrated to raise their financial performance and savings. Zou et al. [2] introduced the integration of banks in the banking industry as the changing factor in bank financial performance. They argued that the integration of banks to set out their financial performance may be undesirable for clients since it affects on the way of accessing branches. On the other side, it causes a rise in efficiency and creates an efficient structure for branches. Finally, they showed that the integration of banks leadsthe non-elimination of a bank that has less efficiency.

Cinar and Ahiska [3] found out the strategic importance of proper selection of an organization's location, and they concluded that it is imperative because the costs of making a construction are much higher and getting it back is more difficult. Wrong decisions about the location of bank branches may lead to more than enough costs of transportation, losing a skilled workforce, and losing a competitive advantage. They also, by studying several researches studies, concluded that each organization must consider some standards related to its location and these standards must align with the organization's strategy and function. The definition of proper location is different according to the type of business, while the aim of proper location is to maximize use and achieve acceptable profitability.

Dereli et al. [4] studied the relation between various bank branches and competition among various bank marketing in the market and bank societies. They introduced the lack of rival branches or the smaller number of rival branches as the main factor in the success of bank branches.

Al-Hanbali [5] introduced the settling pattern of population, how population access to town, the main road of traffic, and proper recognition of traffic patterns are the most effective variables on the success of location designs of bank branches in the long-term.

Hirtle [6] showed that depositors consider the geographical location of a bank branch, its accessibility, and the aggregation of branches in a region.

The physical location of branches is another factor that is considered the main effective factor on the financial performance of bank branches. Accessibility and ease of arriving at bank branches by crossing streets, access to parking and public transport, proximity to shopping centers and regional offices all play an important role in determining a bank branch's location [7].

Recognition of the relation between social, economic variables and total deposits of each bank branch is a proposed issue in financial and banking studies. Based on findings from a quantitative and interview-based study, which was conducted in 2004-2010, social and economic factors, environmental elements, and each person's income in each region are considered as the effective factors on the selection of bank branches. In this study, a list of effective variables on the financial performance of bank branches is recognized by an interview process with 10 directors of banks. These variables are: population, number of production companies, number of employees, number of apartments, number of tax administrations, and amount of state investments. Finally, based on findings from this study, the amount of state investments and the statistical population have a considerable role in the number of total investments [1].

Some other factors are also considered as effective elements in an appropriate location for bank branches. In order to raise the financial performance of bank branches, they must locate themselves near railway services, express post, and communication services. The existence of wholesale centers and facilities that provide utilities is also effective in the selection of branch location [8].

One of the most important features of the financial performance of a branch is the amount of its deposits. According to previous studies, the power of deposits depends on the regional features of that bank branch [9].

Das et al. [10] studied many major and state bank branches in India, they mentioned that many factors like client's trust to the bank which is related to the staff's behavior, level of staff's education, bank environment, location of the bank, advertising and governmental regularities and also reduction of state interference in banking affairs are the effective factors on attraction of the people's deposits. They believed that the most important and effective factor of a deposit's attraction is the manner of bank staff toward clients and the trust of people in depositing there.

Evanoff [11] studied the number of bank branches in access to banking services which were provided for clients. Findings from these investigations showed that along with changes in population and economic factors, the number of branches in a region must be enough to have no adverse effect on banking services. Generally, increasing the number of banking branches has a positive effect on the client's access to banking services. However, some other studies show that population, economic, and social variables do not affect the construction of new bank branches.

Demir et al. [12], in their study, discussed the best location using AHP and VIKOR fuzzy analysis in the Kurdistan region of Iraq and showed that "security in the region" and "willingness to cooperate with the bank" are the most important criteria in location strategy. These results show a contrast with developed countries. In addition, other criteria such as socio-economic, employment, commercial, banking, and demographic potential are less important than security and willingness. The reason may be that society has recently merged with banks and interacts in their business.

In 2020, Rashid et al. [13] investigated the relationship between customer loyalty and financial performance. Conducted a survey of 356 questionnaires among customers of selected Islamic banks in Bangladesh to collect information on customer service quality and customer loyalty, while financial performance data was obtained from annual reports. In this study, Rashid et al. [13] found no significant relationship between customer loyalty and the financial performance of Islamic banks in Bangladesh. The findings of this study show that the financial performance of Islamic banks in Bangladesh depends more on many other financial and non-financial factors than customer loyalty.

These days, due to the competition between banks and financial and credit institutions to attract more resources, mastery of the effective components of equipping financial resources has gained special importance. The location of bank branches is an important driver in attracting customers, and bank marketers should carefully examine and evaluate it. Azadkhani and Yousefinezhad [14] conducted a descriptive-analytical research with the aim of locating National Bank branches in Ilam city and determining suitable areas with a innovative urban approach. After performing calculations using fuzzy hierarchy analysis and necessary investigations, they came to the conclusion that the neighborhoods of the city are in a good condition in terms of accessing banking services, as one of the indicators of smart urban growth. Commercial places are places of trade and money exchange, and placing banks in these areas can be valuable in terms of economics and profitability, as well as marketing and attracting customers.

Choosing the optimal location of bank branches is one of the most important decisions in banking activity, which has a significant effect on its performance. One of the influential components in equipping monetary resources in modern banking is paying attention to the desirability of the location of banks and financial and credit institutions. The location of bank branches and financial institutions is an important driver in attracting customers, and bank marketers should carefully examine and evaluate it.

The effect of the size of bank assets on the financial performance of banks has always been an important issue, so that some researchers believe that a large bank enjoys economies of scale, resulting in lower overhead costs and thus better financial performance than smaller banks. Other researchers argue that large banks suffer from bureaucracy, which makes them slower to respond to economic changes and, therefore,less profitable. In a study in 2021, Al-Fadhi and Al-Ali [15] investigated the effect of the size of bank assets on Return On Assets (ROA) and Return On Equity (ROE) as indicators of bank financial performance. Using the data of 10 Kuwaiti banks in the period of 2018-2008, the results showed that the size of bank assets has an inverse relationship with profitability, but this relationship is not statistically significant. On the other hand, the results showed that there is a statistically significant direct relationship between equity and bank profitability [15].

The following main and subsidiary effective variables on the determination of location are presented in *Table 1,* which are all the result of studying previous references and literature.

**Table 1. Main and subsidiary effective factors on a bank branch's location.**

| Main Variables | Subsidiary Variables |
|---|---|
| Geographical | Regional area, good enough vision |
| Cultural | The historical situation of that region, the level of education, the number of teachers, the number of students, the number of colleges and faculties, the number of libraries, and the number of museums |
| Social | Number of crimes, number of justices, and related offices |
| Level of employment | Employment rate in agriculture, employment rate in industry, and the percentage of employment |
| Traffic system | The location of crossroads, number of squares, number of highways, number of one-way and two-way streets, number of main traffic roads, number of traffic events |
| Urban regularities | Urban development plans, security and disciplinary range, number of insurance companies, urban services, existence of empty places based on municipality regulation |
| Proximity to other urban services | Number of cinemas, number of parks, number of hotels, number of restaurants, number of sport stadiums, number of subway stations, number of fruits and vegetables centers, number of drug stores, number of gas stations, number of hospitals, number of terminals, number of passages and shopping centers, number of chain stores, number of railway services, number of express post, number of state and non-state companies and administrations, availability of parking |

**Table 1. Continued.**

| Main Variables | Subsidiary Variables |
|---|---|
| Economical | Everybody's income, annual average income of the family, amount of imports and exports of the region near the branches, electricity consumption, financial growth, newly established companies, closed companies, amount of investment to establish new companies near the branches |
| Population | Annual population growth rate, mean age, number of employees, urbanism rate, marriage, gender, banking population, amount of regional construction and building, population +55-year-old |
| Features of a residential place | Number of families, mean age of each family, number of production companies, number of staff, number of employees and labors in business sectors, number of retired peoples, number of taxpayers, number of professional self-employed, number of apartments, number of people with private occupation, number of sellers, number of retailers |
| Features of a business and commercial region | Number of companies in commercial sector, number of all companies, total salaries of staffs, mean income of each staff, income of labors and staffs in trading sectors, mean income of labors and staffs in agriculture sectors, total income of labors and staffs in agriculture sectors, tax included of total income, number of organized industrial regions |
| Features of branches | Branch's age, number of branch staff, amount of providing facilities, new branch's financial performance, interest rate, number of counters of banks, banking brand, physical place of bank, ease of access to bank branch, internal and external view of bank |
| Banking indexes | Number of banks, number of branches, amount of bank's deposit in branches, reputation of branches, number of efficient banks in investment, reputation of fund and stock |
| Competitor | Number of counterpart bank branches, number of branches dependent on commercial banking, number of competitor bank branches, number of total bank branches |

According to a large number of effective parameters on a branch's financial performance, and since most of these parameters are redundant, this study raises a question in order to achieve its aim, which is the recognition of key effective indicators on a branch's financial performance:

What are the most effective parameters for identifying the branch's financial performance?

# 3 | Materials and Methods

The present paper is an integration of quantitative and qualitative methods. In order to identify the effective parameters on the financial performance of branches, first of all, based on literature review and qualitative methods like pre-planned interviews and review of bank documents the main hypothesis were developed and after that to test hypothesis, the correlation analysis of parameter's effect on financial performance of branches were studied. The following process of this paper is described.

At first, the effective parameters on financial performance were studied based on a critical review of the literature. The output of the literature was the identification of 39 parameters that could potentially affect a branch's financial performance. In the next step, data was collected. In this step, the Mellat bank branches in Tehran were considered as the base of the study, and their financial information and other related data were collected. After that, the effectiveness of each parameter on the branch's financial performance was examined by Pearson correlation coefficient in SPSS software, and finally, the direct and inverse relation of these parameters with financial performance was obtained.

The sampling method in this paper was cluster sampling. In this study, Tehran, the sample region of the study, was divided into seven areas by the help of Mellat bank's experts, and after that, one sample was selected from each region randomly. In order to determine sample size, the following equation was used.

$$n = \frac{N * Z^2_{\alpha/2} * \delta_X}{e^2 * (N-1) + Z^2_{\alpha/2} * \delta_X}. \quad (1)$$

In *Eq. (1)*, N is the number of all branches in Tehran, the standard deviation of financial performance of branches, which is determined based on a 50-piece sample, and e shows the error,whose value is equal to 20000 rails. According to the above explanations, the sample value is 229 branches at 95% level of significance. The information related to the 39 mentioned parameters in *Table 2* was collected from the municipality website and the statistical yearbook of Tehran [16].

# 4 | Results and Discussion

In this section, 39 parameters are considered in order to examine their effectiveness on the financial performance of branches. After that, the data normalized test on financial data was selected as the relevant correlation test, and finally, the proper correlation test was chosen and was performed on the data.

**Table 2. Parameters to evaluate the effectiveness of a branch's financial performance.**

| | |
|---|---|
| 1. Branch's age | 22. Number of libraries |
| 2. Population growth rate | 23. Number of parks |
| 3. Number of families | 24. Number of wholesalers |
| 4. Number of apartments | 25. Number of subway stations |
| 5. Number of drug stores | 26. Number of Mellat bank branches |
| 6. Number of restaurants | 27. Number of cinemas |
| 7. Number of parkings spaces | 28. Number of sellers |
| 8. Number of people between 50–54-year-old | 29. Number of hospitals |
| 9. Number of people between 55–59-year-old | 30. Number of married people |
| 10. Number of people between 60–64-year-old | 31. Number of illiterates |
| 11. Number of people between 65–69-year-old | 32. Number of museums |
| 12. Number of people between 70–74-year-old | 33. Number of shopping centers |
| 13. Number of people between 75–79-year-old | 34. Number of sports centers |
| 14. Number of people +80-year-old | 35. Number of hotels |
| 15. Number of gas stations | 36. Number of supermarkets |
| 16. number of fruit and vegetable centers | 37. Regional area |
| 17. Number of business units | 38. Number of traffic events |
| 18. Number of residential units | 39. Number of single people |
| 19. Number of universities | |
| 20. Number of governmental administrations | |

The Kolmogorov-Smirnov test was used to test normalization of financial data, and the data was analyzed by SPSS software.

**Hypothesis 1.** The data has a normal distribution.

**Hypothesis 2.** Data has no normal distribution.

*Table 3* shows the findings from the statistical test. As it is seen, the 95% level of significance of the data has no normal distribution; therefore, in order to perform a correlation test, it is necessary to use non-ricparametric tests. The following findings from Pearson correlation analysis are mentioned.

**Table 3. Findings from the normalized test (K-S).**

| Name of Bank | Statistical Population | P-Value |
|---|---|---|
| Mellat Bank | 229 | 0.000 |

According to findings from a correlation test for data of Mellat Bank, as shown in *Table 4*, the branch's age and number of business units in a region have a direct effect on the financial performance of the branch. The correlation coefficient between the branch's age and financial performance is equal to 0.431, and it is at a 95% level of significance based on the amount of P-value. On the other hand, while the age of the branch increases, the the financial performance of the branch becomes older. The correlation coefficient between business units and financial performance is equal 0.221, and 95% is significant. Therefore, there is a significant relationship between business units and the financial performance of branches. As the age of the branchincreases, the number of business units in the region increases, and the the financial performance of the branchraises.

While the number of residential units, the number of people +50-year-old, the number of hotels and restaurants, and the number of wholesalers in a region have the reverse effect on the financial performance of bank branches. It is essential to know that, at the beginning of a branch establishment, just considering the population of that region isn't enough, and as shown in *Table 4*, the number of regional populations has an opposite relation with the final performance of branches. Still, we must pay attention that while we consider population, we also must consider the number of residential and business units.

Thus, it means that the population in each region has a positive effect on financial performance. The effectiveness of people +50-year-old is due to the large number of utilities which is received by banks, and this benefit is the advantage of granting major facilities to legal clients. Despite the fact that the legal client has a positive effect on bank efficiency and performance by their refer to the bank, it has no special impact on the financial effectiveness of the bank. The use of Point of Sale (POS) by hotels, restaurants, and wholesalers has an adverse effect on the financial performance of branches. On the other hand, as POS are increased, the performance of these branches is weakened. The reason for such inverse relation is that these centers (hotels, restaurants, etc) refer to banks and branches which have better facilities in providing ATMs.

**Table 4. Effective parameters on the financial performance of Mellat Bank.**

| Name of Parameter | P-Valu | Pearson Correlation Coefficient |
|---|---|---|
| Branch's age | 0.0002 | 0.431 |
| Number of business units | 0.0008 | 0.221 |
| Number of residential units | 0.0003 | -0.273 |
| Number of people between 50–54-year-old | 0.0008 | -0.319 |
| Number of people between 55–59-year-old | 0.0004 | -0.299 |
| Number of people between 60–64-year-old | 0.0004 | -0.327 |
| Number of people between 65–69-year-old | 0.0001 | -0.337 |
| Number of people between 70–74-year-old | 0.0008 | -0.319 |
| Number of people between 75–79-year-old | 0.0002 | -0.275 |
| Number of people +80-year-old | 0.0007 | -0.179 |
| Population growth rate | 0.0005 | -0.288 |
| Number of hotels and restaurants | 0.0002 | -0.277 |
| Number of illiterates | 0.0001 | -0.28 |
| Number of wholesalers | 0.0002 | -0.273 |

It is recommended that, in order to establish a new branch, private or non-state banks consider the merchantability or residential status of the region where the branch is supposed to be established. It is essential to teach the staff of branches about the clients, their demands, and their necessary needs and how to solve their problems since it plays a more effective role in meeting the client's satisfaction.

Based on various studies and several research studies, researchers realized that age is the most important factor in the profitability of a bank branch. So that, individuals older than 55-year-old (people with +55-year-old), rather than young people, have a more significant role in the usage of financial services of bank branches

[7]. Despite the fact that it is in contrast with the existing reality in Iran, it means that older people refer to bank branches less than the trend of young people to use bank branch services.

Future studies can present a general model for the relation between parameters and financial performance, which can be done by examining the relation between variables and financial performance. It is also possible to observe the effect of the financial performance of bank branches by studying the values of other parameters.

## Author's Contribution

I confirm that I am the sole author of this work. I was responsible for the conceptualization of the research idea, literature review, study design, data curation, formal analysis using statistical methods, investigation, methodology development, validation of results, visualization, and the writing of the original draft, as well as the subsequent review and editing of the final manuscript.

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## Data Availability

The datasets generated and analyzed during the current study are not publicly available due to confidentiality agreements and privacy restrictions related to the bank's internal performance data. However, the aggregated data supporting the findings of this study are available from the corresponding author upon a reasonable and formally motivated request. Any such request will be subject to review and may require necessary permissions from the relevant authorities to ensure compliance with non-disclosure agreements.

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