The Impact of Economic Crisis on Small Business (Case Study in Erbil-Iraq)

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Abstract

This research investigates the Economic Crisis in Erbil-Iraq and its impact on Small Business (SBs) sector by using factor analyses model. Data was collected from 110 SBs by using cross sectional data and simple random techniques. The model is used to analyze the possible impact of Economic Crises on Erbil's economy. Results indicated that economic recession has a negative impact on the SBs sector in Erbil in the last two years. Employing the simplified static analysis framework based on simulations revealed that the economic recession has influenced negatively on the economy of Erbil. Increasing general inflation rate, decreasing living standards and purchasing power have negative impacts on the growth of SBs in Erbil and eventually the economy of Erbil.

Keywords: Small Business, Economic Crisis, Economic growth, Erbil, Financial crises

1. Introduction

In the globalization era, the occurrence of economic crises have become more often than before. Thus, it is necessary to conduct a formal study to examine the impact of the current economic crisis and recession on the small businesses in Kurdistan's regional government (KRG) of Iraq, particularly the impact of the ISIS war and the reduction of the oil price on small enterprises during the years 2014 and 2015, thus the purpose of this paper is to present the impact of the economic crisis on small businesses in Erbil.

The financial and Economic crisis has and will continue to have a major impact on our whole society. More and more people will be affected by it both directly and indirectly and we have not yet seen the full scale of the crisis either economically or socially.

Whenever we start to mention the word crisis, we are always using two additional words: recession and depression. If we want to explain the crisis, we have to identify these concepts also. Recession means in very simple words: slowing economic activities. There should be a contraction compared with a position previously accessed, this slowing down may be shallow or deep. Sometimes the word recession is used as a synonym of crisis. On the other hand, if the level of economic activity stays at a low level for quite a long time; this situation is defined as depression (Ratko and Ulgen, 2009).

Small business enterprise is a sector of the economy that needs Kurdistan Region government's attention and other developing nations due to the role it plays in job creation and economic growth in the nation's economy. "Small business play an important role in the development of economy, by creating jobs, by supporting innovation and competitiveness and, emphasizing dynamism and market atomicity" (Mirela et al., 2014).

A small business is a business that is privately owned and operated, with a small number of employees and relatively low volume of sales. Small businesses are normally privately owned corporations, partnerships, or sole proprietorships. The legal definition of "small" varies by country and by industry. In the United States the Small Business Administration establishes small business size standards on an industry-by-industry basis, but generally specifies a small business as having fewer than 500 employees for manufacturing businesses and less than $7 million in annual receipts for most nonmanufacturing businesses. In the European Union, a small business generally has fewer than 50 employees. However, in Australia, a small business is defined by the Fair Work Act 2009 as one with fewer than 15 employees (Bahzad, 2010).

A small business can be started at a very low cost and on a part-time basis. Small business is also well suited to internet marketing because it can easily serve specialized niches. Independence is another advantage of owning a small business. One survey of small business owners showed that 38% of those who left their jobs at other companies said their main reason for leaving was that they wanted to be their own bosses (Bahzad, 2010).

Small businesses are vital in today's economy because many of the revenue obtained by the government are from business taxes. In addition, the existence of small businesses can stimulate the economy and hopefully improve the economies all around the world. Finally, small businesses are important because it can provide more job opportunities for people so that the unemployment rate is low (Bahzad, 2010). There is no extensive literature that studies how the crisis has affected Small Business in (KRG) during the financial crisis that began in 2007 spread and gathered intensity in 2008. Many countries have their researches on impact of these crises on their small and medium enterprises (SMEs). In Erbil there is also the crisis of 2014-2015 that appeared because of ISIS war and the fall of oil prices to $30 per barrel. However, there are some empirical studies in the literature that shed some light on this issue.

A sampling of earlier studies includes Tri (2013), Liu (2009), Anwar et al. (2012), Kazuo, Takanori (2012) and Milan, Nebojsa, (2010). According to results, the global financial crises have negatively impacted on economy, particularly on the performance of small and medium enterprises (SMEs). Ionut, (2013) analyzed the impact of the financial crisis on SMEs, hence lowering the demand for goods and services provided by businesses, which induced a restructuring of the available jobs, reducing the number of active enterprises, decrease turnover and limiting investments. Ilkay et al. (2010), analyzes the financial crisis impact on SMEs and SMEs strategies during financial crisis in the Sivas province, the results show that the ratios of small-sized firms have more changes than middle-sized firms; also, middle-sized firms are less affected from crisis than small-sized firms. While small-sized firms are generally managed traditionally with family business status, they fall behind to make professional provisions against crisis.

The main purpose of this paper is to specify how the economic crisis affected small enterprises during 2014 and 2015 in Kurdistan Regional Government (KRG) and specifically choosing Erbil province as a sample niche, thus the objectives of this paper can be expressed as follows:

1. How is the economic crisis affecting Products and Services?
2. How is the economic crisis affecting Marketing and Sales?
3. How is the economic crisis affecting Human Resources?
4. How is the economic crisis affecting Financial Activities?

2. Factor Analysis Model

The importance of factor analysis as a mathematical model to analyze the relationships between a large number of variables and interpreted in a few of the factors that reflect the reality subject to analyze the data, and disclosure of some relationships unexpected that look distinct at first and then clear it is not her little significance, and vice versa, so it can be explained by the factor model for (p) variables as a linear function of (p) of the averages of variables for (q) of the general factors (Factor Scores) or (Common) and the (Unique Factor) for each variable, as if $(q < p)$, the factor analysis model can be formulated as follows: Li and Zhang (2007).

$$\underline{x}_j = \underline{\mu} + \Lambda \cdot \underline{f}_j + \varepsilon_j \quad ; \quad j = 1, 2, \ldots, n$$

When:

$\underline{x}_j$ is a vector with the capacity $(p \times 1)$ for (p) from variables.

$\underline{\mu}$ is a vector with the capacity $(p \times 1)$ for (p) from the averages of variables.

Λ is a matrix with the capacity $(p \times q)$ for $(p \times q)$ from factors loading.

$\underline{f}_j$ is a vector with the capacity $(q \times 1)$ for (q) from factor scores or common.

ε_j is a vector with the capacity $(p \times 1)$ for (p) from unique factor also called a vector of random error.

Thus, all response for variables consisting from two parts, the first caused by general factors which is a linear combination of factors, and the second section comes through the only factor that contains all other effects in other factors.

2.1 Assumptions to Solve by Using Factor Analysis

There are a set of assumptions in the model of factor analysis that are summarized by the following points:

I-Existence of a Correlation between a Set of Variables

This kind of correlation sometimes called Inter correlation, which is produced from the presence of common factors affecting it, and how much they represent these correlations back to the reality of those factors. Factor analysis seeks to interpret the correlation between variables with factors number less than of original variables used, and relies this hypothesis on the standard value of the variables. So variables turned into new variants of standard normal distribution with a mean is zero and variance of one, and so the impact of units of measure different variables is canceled. Based on this hypothesis divides the total variances to the three variations are:

a- Common Variance

The variance Common - also called quantities common (Communalities) or variance of general factors part of the total variation, which represents the contrast ratio explained by common factors from the matrix analysis of variance (Σ) and can be calculated by using the total squares factor loading that variable and has the symbol (h_j^2) and defined according to the following equation:

$$h_j^2 = \lambda_{j1}^2 + \lambda_{j2}^2 + \cdots\cdots + \lambda_{jq}^2 = \sum_{j=1}^{n} \lambda_{ji}^2 \quad ; \quad i=1,2, \ldots ,q$$

If the value of (h_j^2) of the variable (j) large and approaching the one they will show that this variable interferes in whole with factors derived, this means that the factor (i) where that $(i = 1,2, \cdots, q)$ was important and a real impact in the phenomenon studied. But if the Communalities signed between zero and one, this refers to the partial interaction between the variables and factors. Finally, if the Communalities equal to zero then we can say that the Extracted factors cannot explain any part of the variation of that variable.

b- Specific Variance

It is a part of the total variation, but it is not correlated with the rest of the variables, but it is correlated with same variable:

$$b_j^2 = \psi_j^2 + e_j^2$$

When

b_j^2 is the specific variance for variable j.

e_j^2 is the error variance.

ψ_i^2 is the variance of unique factor.

c- Error Variance

It is the part of the variance that does not explain by general factors, and can be considered as residual or error and it is the result of the occurrence of errors during the withdrawal of the sample and measured or any changes that cannot control it leads to a lack of consistency in the data and it has the symbol (e_j^2) and can be calculated as the following:

$$e_j^2 = 1 - (h_j^2 + b_j^2)$$

Each of the common and specific variance shares to consistence the Reliable Variance:

$$R_{jj} = h_j^2 + b_j^2$$

II-Representation of the Correlation Between Two Variables from Loading Variables of Common Factors:

This hypothesis is based on the assumption of a correlation between the two variables is Calculated based on the nature and existence of common factors, and can be represented this hypothesis for independent factors and orthogonal by the following equation:

$$r_{jj'} = \lambda_{j1} \lambda_{j'1} + \lambda_{j2} \lambda_{j'2} + \cdots + \lambda_{jq} \lambda_{j'q}$$

This means that the correlation coefficient between the two variables is a product of the total loading variables of common factors between them, as this correlation can be represented using matrixes, as follows:

$$
\begin{bmatrix}
1 & r_{12} & \cdots & r_{1q} \\
r_{21} & 1 & \cdots & r_{2q} \\
\vdots & \vdots & \ddots & \vdots \\
r_{n1} & r_{n2} & \cdots & 1
\end{bmatrix}
=
\begin{bmatrix}
\lambda_{11} & \lambda_{12} & \cdots & \lambda_{1q} \\
\lambda_{21} & \lambda_{22} & \cdots & \lambda_{2q} \\
\vdots & \vdots & \ddots & \vdots \\
\lambda_{n1} & \lambda_{n2} & \cdots & \lambda_{nq}
\end{bmatrix}
\times
\begin{bmatrix}
\lambda_{11} & \lambda_{12} & \cdots & \lambda_{n1} \\
\lambda_{21} & \lambda_{22} & \cdots & \lambda_{n2} \\
\vdots & \vdots & \cdots & \vdots \\
\lambda_{1q} & \lambda_{2q} & \cdots & \lambda_{nq}
\end{bmatrix}
$$

2.2 The criteria for Selecting the Number of Factors

The different nature of the measuring variables led to appear several analysis methods for factors, which in turn makes very easy an estimate of factors loading matrix to reach to the initial solution. The most important factor analysis method is the Principal Component Method which we will use in this research. On the other hand, the criteria or methods for selecting the number of factors are necessary and makes it imperative for the researcher to determine the number of important factors that explain the phenomenon studied in the relationship, particularly when adopting Eigen values in determining the number of factors which is equal to the rank of the correlation matrix. That is why we need a criterion to select the best from among these models by selecting the appropriate number of factors that interpret a great ratio from the total standard variation. It depends on the basis of the ratio aggregate of the variance that are explained by the factors, it should be this ratio is greater than or equal to 75% and this is referred to by Alchukrgi (2005).

3. *Methodology*

Data was collected from 110 SBs by using cross sectional data selected by simple random techniques. We selected a number of variables to investigate impact of economic crises on SBs in Erbil. The questions form concentrated around some of the key points such amount of suppliers, investment in innovations, marketing expenditure, pressure on prizes, sales, customers, postponement of recruitment, salary, viability of the business, finance, pay and profits.

In *Table 1* as illustrated average and standard deviation of each variable in this study.

Table 1: Definition of Variables in Factor Analyses Model

Variables	Explanation	Average	Std. Deviation
X1	The amount of Suppliers is getting lower	4.3727	0.8552
X2	We will not invest in Innovations during The following year	3.918	1.150
X3	Our marketing expenditure has been reduced	4.0091	0.8830
X4	There is greater pressure on prises	3.645	1.193
X5	The sales volume has decreased	4.6273	0.6617
X6	The amount of Customers has decreased	4.4545	0.8635
X7	We will cancel/postpone recruitment that was planned before	4.3364	0.7203
X8	Salary increases will be lower than planned	4.1273	0.6788
X9	Our team is concerned about the viability of the business	4.7727	0.5360
X10	Finance is getting harder to obtain	4.5545	0.6984
X11	Our customers are taking longer to pay	3.555	1.860
X12	Our forecast: profits will fall	4.4273	0.6596

As shown in *Table 2* the first factor explained 29.8% of the total variation. This factor contains three variables (X_7, X_8, X_9). The second one explained 14.7% of the total variation, which included (X_5, X_6). The third factor has a ratio reached at 12.4% of the total contrast ratio containing (X_{10}, X_{12}). The fourth factor has 9.9% of the total variation (X_3, X_4). The fifth factor explained 7.7% of the total variation containing (X_1, X_2). As well as it can be observed that the variable (X_{11}) has appeared among the factor (sixth) respectively.

Table 2: Illustrate the Importance of the Variables (Significant Effect) Within Factors

No. of Factors	Var %	Important Variables	name
1	0.298	X_7, X_8, X_9	Human Resources
2	0.147	X_5, X_6	Marketing & Sales
3	0.124	X_{10}, X_{12}	Financial Activities
4	0.099	X_3, X_4	Marketing & Sales
5	0.077	X_1, X_2	Product & Services
6	0.066	X_{11}	Financial Activities
Total Variance	0.811		

Table (3) shows the factor analysis to the Small Business (variables) and the quantities of communalities.

Table 3: Matrix of Rotated Factor Loadings and Communalities

Variables	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Communality
We will cancel/postpone recruitment that was planned before	0.784	0.097-	0.256	0.236-	0.109-	0.100	0.767
Salary increases will be lower than planned	0.798	0.023-	0.195	0.204-	0.002-	0.211-	0.761
Our team is concerned about the viability of the business	0.825	0.126-	0.042-	0.102	0.174-	0.024-	0.740
The sales volume has decreased	0.072	0.927-	0.065	0.007	0.153-	0.029-	0.893
The amount of Customers has decreased	0.161	0.869-	0.003-	0.308-	0.032-	0.057	0.880
Finance is getting harder to obtain	0.034	0.038-	0.896	0.052	0.027-	0.168-	0.837
Our forecast: profits will fall	0.229	0.023-	0.847	0.201-	0.077-	0.054-	0.819
Our marketing expenditure has been reduced	0.044	0.143-	0.188	0.851-	0.208-	0.067-	0.829
There is greater pressure on prizes	0.484	0.178-	0.101-	0.617-	0.122	0.053	0.674
The amount of Suppliers is getting lower	0.080	0.196-	0.029	0.119	0.709-	0.466-	0.780
We will not invest Innovations during The following year	0.143	0.060-	0.078	0.209-	0.871-	0.078	0.839
Our customers are taking longer to pay	0.061	0.051	0.195	0.049-	0.073-	0.929-	0.915

*   Represents a variable with a significant effect and that has loading greater than or equal to 0.5 or less than or equal to -0.5.

4. Empirical Results and Discussions:

We can notice that the rotated factor loadings values (variances within factors) as shown in Table (1) and thinking in any value has a significant effect (greater than +50% or less than -50%) starting of the sixth factor (F6) we note the highest load has been interpreted by the variable X11 (Our customers are taking longer to pay), which amounted to -92.9% of the yield variance with a very big negative impact. That means there is a very significant negative effect on small business in Erbil. The variable X5 (The sales volume has decreased) within the second factor (F2), which amounted to -92.7% and came in the second place in terms of its impact on small business, and this is evidence that the sales volume has decreased negatively. On the other hand, the variable X10 (Finance is getting harder to obtain) has interpreted +89.6% of the total yield variance, within the third factor (F3) and this value is positively reflected and improves the economic crises of small business in Erbil. The three variables above are considered the most important variables in terms of the positive or negative impact on small business in Erbil. But the variable X2 (We will not invest Innovations during the coming year) has appeared in the fifth factor (F5) and also has the loading of -87.1%, that means there is significant effect negative.

The second factor (F2) which is X3 (The amount of Customers has decreased) and the percentage loading factor have reached - 86.9% which indicates that there is a negative effect. However, the fourth factor (4) is X3 (Our marketing expenditure has been reduced), it has ratio of saturation is -85.1% of the common variance, that indicates there is a negative effect. As well as the twelfth variable (Our forecast: profits will fall) comes in third factor is equal to +84.7% has impact positively on the small business.

 While we find that, the ninth variable within the first factor (F1) has a positive significant influence +82.5% on small business in Erbil. The variable X8 (Salary increases will be lower than planned) from the first factor (F1) has a +79.8%, which have a positive effect on small business. On the other hand, the variable X7 (We will cancel/postpone recruitment that was planned before) of the first factor (F1) has a +78.4% of the Common values of variance and which have a positive effect on small business.

Finally, we can say about the effects of the last two variables, X1 (The amount of Suppliers is getting lower) and X4 (There is greater pressure on prizes) within the factors (F5, F4) with the loadings factor (-70.9%, -61.7%) respectively, are not having significant affects on small business, because they have a small value of the ratio of variances.

5. Conclusion

Small enterprises play an important role in any country's economy and are considered vectors of growth in economic, creating jobs and strengthening the middle class in any society. The Kurdistan economic recession significantly reduced the purchasing power of the population, hence lowering the demand for goods and services provided by businesses, which induced a restructuring of the available jobs, reducing the number of active enterprises, decrease turnover and limiting investments. The small business (SB) sector in Erbil is currently under a process of consolidation and improvement, which requires further support of public policies in promoting and supporting managerial and entrepreneurship education.

Overall image of found affects can be presented in the following way:

• It is getting harder to obtain finance.
• There is a great pressure on prices.
• Payment delays are increasing.
• Sales volumes have decreased.
• Marketing activities have decreased.
• The amount of customers has decreased.

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