

Structural Equation Model for Analyzing the Impact of Business Environment on Firm's Growth

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Abstract

The progress of any firm and the wealth it accumulates depends upon the business environment in which the firm functions. Firms of all kinds are strongly influenced by the business environment that they experience and a good business environment ensures their prosperity. In this paper, we have conducted a survey of the manufacturing firms in three different commercial strong Libyan cities to determine the influence of the business environment on the growth of the sales of the firms located in these three Libyan cities. The Structural Equation Model (SEM) method is used in this paper and the empirical variables are calculated for the purpose of the study. These results point to a strong correlation between the growth of the firm's sales and the prevailing factors of corruption, crime, financing, infrastructure, business regulations and human capital. However, the research does not indicate any kind of relationship between the level of competition faced by the firm and its sales growth. To improve the Libyan business environment, it is necessary to frame effective policies and to enforce the Anti Corruption Law and also to finish the red-tape and bureaucratic hurdles. A legal system would have to be developed which provides sufficient finance for the businesses and a proper system of rules for the financial markets would also have to be developed.

Keywords: sales growth, business environment, manufacturing firms, Structural Equation Model (SEM)

1. Introduction

A good investment climate encourages firms to invest in the country and this reduces the rate of unemployment. A firm would be likely to invest in a country if there were opportunities for making a good profit. The support systems such as infrastructure, business laws, financial services, low crime rates, cheap labour and good law enforcement would encourage the firms to invest. If the business environment is good, productivity increases and unemployment decreases (World Development Report, 2005; Dollar et al., 2005).

The economists, academics and policy makers all agree on how vital a good business environment is for the sales of all types of business: small or large, local or foreign (OECD, 2004). The decisions made by the investors will depend on the business environment. If the conditions are favourable, the investors will not hesitate in making investments. A good business environment requires a stable macro-economy, openness in trade and investment, and fair competition in the financial sector (Hallberg, 2000).

Local companies and multinationals find it more convenient to enter and exit the markets whenever they need to do so if the business environment is encouraging. This helps the economic growth rates to be high and the businesses become more productive and they employ more people. Poverty is also reduced as more and more people get jobs. The improvement of the business environment in China has helped to bring down the levels of poverty in the country and in a 20 year period, over 400 million people were brought above the poverty line (World Development Report, 2005). On the other hand, an unfavourable business environment decreases the levels of productivity and lowers the economic growth. Lesser access to finance badly affects the SMEs as there is not enough capital available to finance the businesses. Poor government services and a lack of infrastructure are also the reasons for a weak business environment (Global Monitoring Report, 2008). The doing Business report of the World Bank (2005) surveyed the business environments in 145 countries and it found that the firms in poorer countries were under heavy regulations and their property rights were not recognized. These obstacles prevented the poor people from starting their own businesses. The countries which have managed to improve

their business environments were the ones witnessing high economic growth rates.

The economy of Libya greatly depends upon the oil and gas sectors. In the early 1960s it was a poor agricultural country, but today it is one of the richest countries in Africa. Libya has a large reserve of oil and gas, but the country's economy is not as diversified as the economies of other oil producing nations. A fall in the price of oil could disturb the fiscal and external balances which have been positive so far (AFDB, 2004). The Libyan Government is now trying to diversify the economy so that there is a lesser amount of dependence on the production of oil and gas. This would help the country to have a high economic growth rate. The country is also trying to reform its laws and adopting free market economic principles to prepare the country for globalization and international competition. Private investment is being encouraged and the government is reducing its influence in trade and the exchange of goods and services. The banking sector is being privatized and the country's economy is being opened up (World Bank, 2006). The government has made great efforts to develop the economy but it still remains mostly dependent on the production of oil and gas and the private sector is not very large in size. Most of the private sector consists of small firms belonging to the agricultural and service sectors.

A lot of research is being done to find how the business environment affects the functioning of the firms. This research paper concentrates on the business environment's relationship with the sales growth of the Libyan manufacturing firms. Specifically, this study has looked into the impact of corruption, crime, infrastructure, finance, competition, business regulations and human capital. The necessary data was collected with the help of a survey and questionnaires were given to the manufacturing companies in Tripoli, Benghazi and Misurata. The SEM or Standard Equation Modelling techniques were used to examine the data and AMOS version 20 was used to execute the calculations. The outcome of the research identified the presence of a relationship between crime, corruption, financing, infrastructure, business regulations and human capital on the growth of the firm's sales, but it does not find any influence on the sales caused by the competition between the firms.

The following section contains the empirical studies and the next three sections after that present the methodology. Section 4 has the results of the research and also a discussion of the results. Section 5 is the last section and it has several comments and recommendations for making the business environment in Libya better.

2. Empirical Studies

The Total Factor Productivity (TFP), investment rate, wages, profits, growth rates of output, employment, and fixed assets and other measures are used to examine the performance of the firms as influenced by the different factors shaping the business environment. The empirical studies concerning the business environment and its impact on the growth of the firm's sales are studied in this research paper. Recently, Gaviria (2002) also tried to determine the influence of corruption and crime on the sales growth and he states that they were clearly identifiable. Dollar et al. (2005) have studied the business environment in China, India and Pakistan and the studies show that the growth rates are definitely affected by the major environment indicators. Infrastructure has three main indicators; (power losses, phone days and custom delays) and they tend to negatively affect economic growth of the firm in the countries that were included in the study. Beck et al. (2005) studied the impact of legal and financial factors and the corruption problems on the growth of the small and medium enterprises or SMEs in 54 different countries and they have found that small firms faced more financial, legal and corruption related problems as compared to larger firms. This indicates that the hurdles created are inversely proportional to the size of the firms. It was also shown that the firms in underdeveloped countries with more corruption faced greater challenges than the other firms. Hallward-Driemeier et al. (2005) used the data for 1500 firms in 5 different countries to show the effects of business environment on the growth rates of the firm's sales. Easy regulations, lesser corruption, the availability of basic infrastructure and the flexibility of the markets all support the performance of the firm. Limited benefits are gained by developing physical infrastructure and increasing banking access. Wang and You (2012) have studied the effects of the levels of corruption and financial prosperity on the growth of businesses in China. The data collected from 12,212 firms was used and it was shown that the firms would gain from easy formal loans as well as corruption. A substitution relationship exists between corruption and financial development on the growth of businesses. In more developed financial markets, corruption reduces growth. Ayyagari et al. (2006) used that data for 4,197 firms in 80 different countries to study the factors of the business environment which decrease the growth of businesses. Different factors affect the business growth in different ways. Problems of finance, crime and political crises have a direct negative impact on the growth of firms. Fishman and Svensson (2007) studied how taxes have affected the growth rates of sales in Uganda. The data belonging to 176 firms was used to find that bribes have a negative impact and they cause more harm than the imposition of taxation. A one percent increase in the rate of bribery reduces the sales growth by up to three percent which is thrice as great as the effect of taxation. Rahaman (2001) used the data of 5,214

UK and Ireland based firms to find out how the financing sources influence the sales growth of firms. When there are external constraints of financing, the firms depend on internal financing for financial growth, but this dependence decreases when the firm's can use the credit services of an external bank. When external financing is available businesses reduce the usage of internal financing and start using external financing sources. Nguyen and Dijk (2012) have used the data of 900 public and private firms in Vietnam to show how corruption reduces the growth of private firms, but it does not have a good impact on public firms. The support of the government in the public sector creates a distortion in the financial market systems. Seker and Yang (2012) used the data from the Latin America and Caribbean region for 29 countries to show how bribery decreases the development of businesses. The bribes paid for permits, electricity and water connections have made the firms grow 23.6 percent lesser than the firms with no such problems. The low income and newly created businesses suffer the most. Nishantha (2011) studied the impact of the human and social capital of the investors on the business government in small firms in Sri Lanka. The data from 97 manufacturing companies with fewer than 50 workers was used and a positive effect was found for the training provided to the workers, technical and professional education and the work experience in the government sector.

However, this research paper provides an empirical study of the effects of the business environment on the growth of businesses in Libya, because empirical researches studies in this area are scarce.

3. Methodology

The sample selection process and the techniques used for the collection of data are described in this section.

3.1 Sampling and Data Collection

The data used in the research was provided by the administrators of the Libyan manufacturing companies in three major cities of the country. The cities of Tripoli, Benghazi and Misurata were selected for the study. Tripoli was selected because it has a central place in the economy of Libya and so does Benghazi. Business and financial activities are concentrated in the city of Tripoli and it is the largest commercial and industrial city in Libya. Benghazi is also an important commercial city in Libya and it has a large industrial and commercial base. It manufactures goods such as food, textiles, tanning, processed salt and construction materials. Misurata is Libya's third largest city and it was the first city in the country to have its own free trade zone. Questionnaires were used for the data collection process. 337 manufacturing firms were surveyed and the sample size was selected by random sampling processes. The questionnaires were distributed personally and by mail from March to May 2013. 297 questionnaires were returned out of the 377 which were distributed and only 207 were possible to be used for this research.

3.2 Operational Measures of the Variables

This section deals with the items which were used in the measurement of the variables used in the research conducted, source of items (see Appendix A).

3.2.1 Access to Finance

The questionnaires contained question about the access to finance and the firms had to rate it on a scale of 1 (no obstacles) to 7 (extreme obstacles). This rating would show how serious the financing issues are for the growth and functioning of the firms. The related issues are: (1) collateral requirements of banks/financial institutions, (2) bank paperwork/ bureaucracy, (3) high interest rate, (4) need special connections with banks/ financial institutions, (5) banks lack money to lend and (6) access to foreign banks.

3.2.2 Corruption

The survey also asked about the level of corruption existing in the system and the firms were supposed to provide a rating scale from 1 (never) to 7 (always). The firms were asked if: (1) they had ever made extra payment to secure public services such as electricity and telephone connections, (2) they had to pay extra to obtain licenses and permits, (3) they had to pay more to take care of taxation related issues, (4) they had to pay bribes to get government contracts, (5) they had to pay extra to deal with customs and import related problems and when seeking assistance from the courts.

3.2.3 Infrastructure

The questionnaires also asked the firms to provide a rating for the standard of infrastructure that was available to them. The ranking scale was from 1 (very inefficient) to 7 (very efficient). The questions asked about the (1) quality of roads department / public works, (2) quality of postal service / agency, (3) quality of the telephone service / agency, (4) quality of the electric power company / agency, and (5) quality of the water / sewerage service / agency.

3.2.4 Business Regulations

The firms were also asked to rank the prevailing business regulations. Once again, the ranking was from 1 (no obstacles) to 7 (extreme obstacles). This question was asked so that the difficulties that the businesses faced due to the business regulations and their effects on the functioning and development of their businesses could be ascertained. The regulations that were asked about include: (1) business licensing, (2) customs/ foreign trade regulations in your country, (3) labour regulations, (4) foreign currency/ exchange regulations, (5) environmental regulations, (5) fire, safety regulations, and (6) tax regulations/ administration.

3.2.5 Crime

The study was also concerned with the impact that the rate of crime had on the operations of the firms and how it damaged their business activities. The rating was on a scale of 1 (never) to 7 (always). The questions asked were: (1) criminal attempts suffered by the firm; (2) products losses due to theft, robbery, vandalism; (3) products losses due to employees' theft (4) the percentage of the firm's total annual sales was allocated to security (equipment, personal); and (5) the percentage of the firm's total annual sales was allocated to protection payment, the firms were asked to rate, on a scale of 1–7. On scale 1 equals 0%, 2 equals less than 5%, 3 equals 6–10%, 4 equals 11–15%, 5 equals 16–20%, 6 equals 21–25% and 7 equals more than 25.

3.2.6 Competition

The questionnaires also asked the firms to rate how difficult it was for them to follow the activities of their competitors for the purposes of business development and growth. The ranking scale was from 1 (no obstacles) to 7 (extreme obstacles). The questions asked were: (1) avoidance of sales tax or other taxes; (2) non-payment of duties or (3) lack of observation of trade regulations (4) foreign producers sell below international prices; (5) domestic producers unfairly sell below my prices; (6) avoidance of labour taxes/ regulations; and (7) violation of the firm's copyrights patents or trademarks.

3.2.7 Human Capital

In the end, the firms were asked the role played by the human capital. They were asked the following questions: (1) the proportion of professional workers in the staff of the firm, (2) the proportion of skilled workers employed the firms, (3) the fraction of the unskilled working for the firm, (4) the fraction of female employees working for the firm, (5) the percentage of the firm's staff that had come from abroad to work in the firm. The ranking scale was from 1 to seven with the following percentages for the different ranks given: On scale 1 equals 0%, 2 equals less than 5%, 3 equals 6–10%, 4 equals 11–15%, 5 equals 16–20%, 6 equals 21–25% and 7 equals more than 25.

3.2.8 Firm Growth

There is no universal way for assessing the growth of a business. Researchers have used different techniques for the determination of the growth rates according to the type and subject of the data which is available. Delmar et al. (2003) states that the different indicators used for measuring the growth rates are: assets, employment, market share, physical output, profits and sales. But the measures which are mostly used for the estimation of the growth of the business are the sales and employment figures. Ayyagari et al. (2006), Beck et al. (2005), Fisman and Svensson (2007), Vial and Hanoteau (2010), Wang and You (2012) and Seker and Yang (2012) have also used sales figures. Aterido et al. (2009) and Aterido and Hallward-Driemeier et al. (2010) have used the employment statistics and Gaviria (2002), Dollar et al. (2005), Hallward-Driemeier et al. (2006) and Rahaman (2011) have used both sales and employment figures. In this research paper, annual sales are taken as a measure of the business growth and the data used is for the period 2010 to 2012.

3.2.9 Control Variable: Firm Age

Many authors of Industrial economics are of the opinion that the age of the firm plays a vital role in determining the economic performance of the firm. Small firms are usually younger than the larger firms. They do not have much experience in the industry as compared to the larger firms. This causes their growth to be uneven, and it also raises the possibility of the firm's failure (Rahaman, 2011). The research work conducted by many researchers contains the age of the firm as a control variable (e.g., Reinikka & Svensson 2002; Ayyagari, 2006; Hallward, 2006; Fishman & Svensson, 2007; Rahaman, 2011; Wang & You, 2012; Nguyen & Dijk, 2012; Seker & Yang, 2012). In this research work also, the age of the firm has been used as a control variable. The firm's age, in this case, refers to the years of the firm spent in active participation in the business sector since the time of its formation.

3.2.10 Control Variable: Firm Size

The size of the firm is taken by many authors as the reason why different firms experience different growth rates

(Rahaman, 2011). Reinikka and Svensonn (2002) and Hallward (2006) have employed the logarithm of the number of workers that were originally part of the firm so that the size factor could be included in the regression analysis. Rahaman (2011) had used the logarithm of the total assets of the firms as mentioned in the firm's balance sheets and also from the sales revenues of the firm so that the size factor could be adjusted in the regression analysis. Reinikka and Svensonn (2002) and Hallward (2006) have all used the logarithm of the sales income of the firm to account for the size of it. In this research paper, the amount of the sales in the beginning (2010) is used for factoring in the size of the firm.

3.3 Data Analysis Methods

The data analysis has been done using the statistical software packages of SPSS and AMOS. The maximum likelihood estimates (MLE) approach was selected for the determination of the Standard Equation Modelling (SEM), which was carried out in AMOS version 20. Anderson and Gerbing's two-step analysis technique was used in this research work. The first step consisted of obtaining the value for the measurement with the help of the Confirmatory Factor Analysis (CFA) and then carrying out the SEM according to the measurement model so that the theoretically derived model could be fit to the available data.

4. Empirical Results and Discussion

4.1 Confirmatory Factor Analysis (CFA)

The CFA approach in the SEM applies to the given measurement model and only the component of the SEM is employed (Hoyle, 1995). The extent of the model fit is found by the CFA. It also measures the degree of model fit, the explained variances and standardized residual for the measurement variables, and the adequacy of the factor loadings. A certain degree of model fit is necessary before the testing of the general model is done (Mulaik & James, 1995). Table 1 shows the characteristics of the measurement model.

Table 1. Summary of constructs

Construct name	Initial number of items	Number of items carried forward to the analysis
Corruption	6	5
Infrastructure	5	5
Business Regulations	7	4
Competition	6	6
Human capital	5	5
Finance	6	6
Crime	5	5

The overall model fit reported in Table 2 showed the overall fit indices for the CFA model were acceptable, with $\chi^2/df = 1.794$, RMSEA = 0.062, IFI = 0.921, TLI = 0.909, CFI = 0.920, PGFI = 0.675. Based on suggestion by Hair et al. (2010), at least three indices must be fitted well to determine the model fit. Keeping with the advice of Mueller and Hancocks (2008), the model fit well since RMSEA = 0.062 < 0.08, CFI = 0.920 > 0.90 and $\chi^2/df < 3$, are very good fit. Figure (1) shows the complete CFA measurement for the model.

Table 2. Summary of model fit indices for CFA model

Fit Index	Recommended Value	Observed Value
χ^2		784.035
Df		437
χ^2/df	1.00-5.00 (Kline 2011)	1.794
RMSEA	0.80 (Steiger 1990)	0.062
IFI	> 0.90 (Bollen 1990)	0.921
TLI	> 0.90 (Tucker & Lewis 1973)	0.909
CFI	> 0.90 (Joreskog & Sorbom 1993)	0.920
PGFI	> 0.50 (James, Mulaik & Brett 1982)	0.675

Note. χ^2 = Chi-Square, Df= Degree of freedom, RMSEA= Root mean square error of approximation fit index, IFI= Incremental fit index, TLI= Tucker-Lewis index, CFI= Comparative fit index, PGFI= Parsimony goodness of fit index.

The measurement model is then tested for its reliability, convergent validity, and discriminant validity. The Cronbach's alpha value and the construct reliability (CR) are displayed in table 3 for the seven latent variables greater than 0.70. This shows that there is a satisfactory level of internal consistency of the measures (Hair et al., 2010).

The factor loading, Composite Reliability (CR) and Average Variance Extracted (AVE) were used to test the measurement model's convergent validity. The item had a loading factor of greater than 0.50. This shows that there exist some common points of convergence (Hair et al., 2010). The CR shows results which are greater than 0.70 which means that the variables did converge at some point (Hair et al., 2010). The Average Variable Extracted (AVE) values for the variables are above 0.50. This shows that the latent variables also had a high convergent validity (Fornell & Larchker, 1981; Hair et al., 2010).

The Maximum Shared Squared Variance (MSV) and the Average Squared Variance (ASV) were used to test the discriminant validity of the measurement model. The MSV and the ASV results need to be lesser than the AVE for the discriminant validity (Hair et al., 2010). Table 3 shows that the MSV and the ASV results are lesser than the AVE values which means that the discriminant values hold and the measurement model is according to the assumptions which were initially made.

Table 3. Reliability, convergent validity and discriminant validity

Constructs	Items	Factor Loadings	Cronbach's Alpha values	CR	AVE	MSV	ASV
Corruption	Corruption1	0.768	0.881	0.887	0.611	0.555	0.236
	Corruption2	0.848					
	Corruption3	0.830					
	Corruption4	0.776					
	Corruption6	0.676					
	Corruption5	0.676					
Infrastructure	Infrastructure1	0.568	0.799	0.805	0.515	0.485	0.243
	Infrastructure3	0.618					
	Infrastructure4	0.803					
	Infrastructure5	0.843					
Business Regulations	Regulation3	0.781	0.775	0.780	0.577	0.192	0.089
	Regulation4	0.629					
	Regulation5	0.797					
	Regulation6	0.518					
Competition	Competition3	0.846	0.930	0.931	0.771	0.585	0.212
	Competition4	0.882					
	Competition5	0.904					
	Competition6	0.879					
Human capital	Humancapital1	0.717	0.877	0.880	0.649	0.298	0.053
	Humancapital3	0.824					
	Humancapital4	0.785					
	Humancapital5	0.887					
Finance	Finance1	0.793	0.898	0.903	0.611	0.555	0.245
	Finance2	0.887					
	Finance3	0.842					
	Finance4	0.824					
	Finance5	0.717					
	Finance6	0.591					
Crime	Crime1	0.641	0.877	0.881	0.654	0.298	0.054
	Crime3	0.825					
	Crime4	0.902					
	Crime5	0.842					
	Crime2	0.842					

Note. Composite Reliability (CR), Average Variance Extracted (AVE), Maximum Shared Squared Variance (MSV), and Average Shared Squared Variance (ASV).

4.2 Structural Model

The tests of reliability, the convergent validity and the discriminant validity meet the criteria or the model's measurement quality. This shows that the measurement model is sufficient for the testing of the path coefficients which seek to determine the theoretically developed relationship of the model to the study which is conducted (Gerbing & Anderson, 1992). Figure 1 shows the structural model which is tested in the research and it was calculated in AMOS version 20. The indices of the model fit reported that the overall fit were within acceptable range as can be seen in Table 4. with $\chi^2/df = 1.718$, the root mean square error of approximation fit index (RMSEA) = 0.061, the incremental fit index (IFI) = 0.915, the Tucker-Lewis index (TLI) = 0.903, the comparative fit index (CFI) = 0.914, the parsimony goodness of fit index (PGFI) = 0.680, which shows that the SEM model is acceptable and fit to the data (Hair et al., 2010; Schumarker & Lomax 2010; Kline 2011).

Table 4. Summary of model fit indices for Structural model

Fit Index	Observed Value
X^2	877.456
Df	500
χ^2/df	1.755
RMSEA	0.061
IFI	0.915
TLI	0.903
CFI	0.914
PGFI	0.680

Note. X^2 = Chi-Square, Df= Degree of freedom, RMSEA= Root mean square error of approximation fit index, IFI= Incremental fit index, TLI= Tucker-Lewis index, CFI= Comparative fit index, PGFI= Parsimony goodness of fit index.

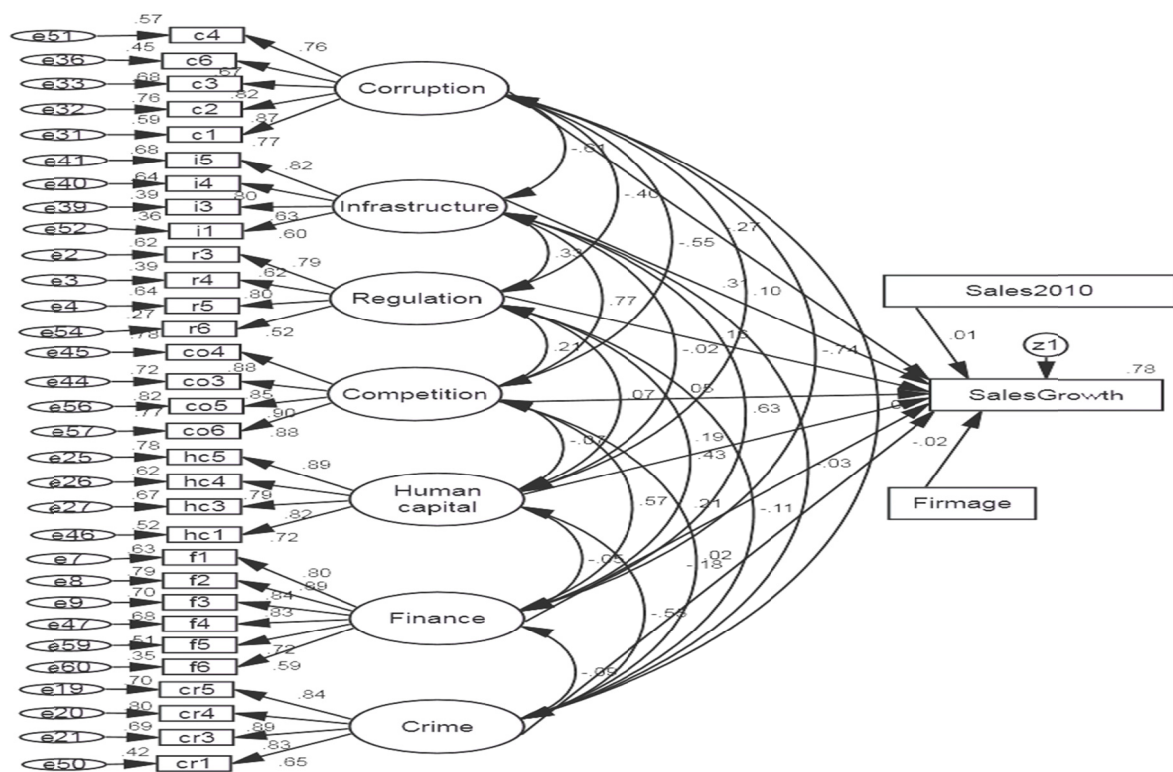


Figure 1. Structural Equation Model (SEM) results

Table 5 shows the coefficients of the impact of the business environment on the growth of the sales for the firms selected in the sample. The output shows that the five vital direct effects are corruption, crime, human capital, finance, infrastructure, and business regulations. Competition is the only impact with no significance.

Table 5. Standardized regression weights of the model

Dependent variables		Independent variables	Estimate B	p
Sales Growth	<---	Corruption	-.272	***
Sales Growth	<---	Infrastructure	.312	***
Sales Growth	<---	Business Regulations	.155	**
Sales Growth	<---	Competition	.052	.466
Sales Growth	<---	Human capital	.187	***
Sales Growth	<---	Financing	-.209	***
Sales Growth	<---	Crime	-.183	***
Sales Growth	<---	Sales2010	.008	.839
Sales Growth	<---	Firm age	-.019	.618

Note. * $p < .05$; ** $p < .01$; *** $p < .0001$.

Corruption retards the growth of the businesses and it negatively affects the sales growth of the firm ($\beta = -.272$, $p < 0.001$). This shows that a 1 percent increase in corruption would cause the firm's sales growth to decrease by 0.27 percent. These results are consistent to the results for these studies (Gaviria, 2002; Beck et al., 2005; Hallward-Driemeier et al., 2006; Fisman & Svensson, 2007; Seker & Yang, 2012), for which corruption always has a negative influence on firm's growth.

Corruption negatively affects the sales growth of the firms, but crime also adversely affects the firm's sales in Libya ($\beta = -.183$, $p < 0.01$). The output calculated confirms that the sales growth decreases by 0.18 percent with an increase of 1 percent in the rate of crime. These results are similar to the research work conducted by Gaviria (2002) and Ayyagari et al. (2006). Their work also shows the adverse impact of crime on the growth of businesses.

The research work indicates that financial difficulties have a bad impact on the development of businesses ($\beta = -.209$, $p < 0.001$). The growth of the firms weakens when the financial difficulties increase. The fall in the growth is by an amount of 0.20 percent, which is in agreement with the work done by Ayyagari et al. (2006) and Beck et al. (2005).

The growth of the businesses is positively influenced by the human capital ($\beta = .187$, $p < 0.001$). An increase of 0.18 percent is experienced when the human capital is increased by 1 percent. Nishantha (2011) has also conducted research work on the matter and his findings are similar to the research work done here. It was found that the human capital can be developed by increasing training and providing more relevant work experience. Technical and professional education also helps and experience in the public sector also has a beneficial effect on business growth in Sri Lanka.

Infrastructure also plays an important part in helping firms grow ($\beta = .312$, $p < 0.001$). A one percent increase in the infrastructure efficiency strengthens the sales growth of the firms by 0.31 percent. Ayyagari et al. (2006) have obtained results which are different with what has been calculated here. Hallward-Driemeier et al. (2006) also have different results. They have stated that there is no correlation between the growth of the firm and the infrastructure, but Hallward-Driemeier et al. (2006) think that there is a positive correlation between the firm's growth and the level of infrastructure and this can be seen in many countries especially those with poor infrastructure.

The business regulations support business growth ($\beta = .155$, $p < 0.01$). The growth of the sales increases by 0.15 percent when the business regulations increase by 1 percent. This differs with the results of the research conducted by- Driemeier et al. (2006) and Ayyagari et al. (2006). Hallward-Driemeier et al. (2006) discovered that the business growth is adversely affected by the laws framed by the government, but Ayyagari et al. (2006) reported results which show that the sales growth of the firms are not impacted by the regulations imposed on them by the government. Aterido and Hallward-Driemeier (2010) insist that the business regulations can be beneficial if their enforcement is properly done.

The research makes it clear that the factor of competition does not play a major part in determining the growth of the sales of the firms. This conclusion of the research does not differ with the research work conducted by Ayyagari et al. (2006). He discovered that an attitude which is against competition does not have any major influence on the sales growth of the firm.

5. Conclusion

This research paper studies the effects of the business environment on the growth of the sales of the firms in the

country of Libya. The Structural Equation Model (SEM) is used to examine the data covering 207 manufacturing companies in Libya. The research work has shown that there are six major factors of the business environment which directly affect the growth of the sales of the firms. These factors are: corruption, crime, human capital, financing, infrastructure, and business regulations on firm's sales growth. No impact has been found for the competition that the firms face from other enterprises. The business environment can be made better in Libya if the government enforces the Anti-Corruption law. The Libyan government must take steps to resolve the matter and enforce the law as soon as possible. This anti corruption law could play a positive role in improving the business confidence in Libya. The laws and regulations for a more open financial sector should be developed by the Libyan government. Bureaucratic hurdles should be removed and the private sector must be encouraged to invest as much as possible. Easy access to finance must be ensured so that the investors are encouraged to play a positive development in the economic development of the country. The financial markets need to be regulated in a just manner and the firms and businesses operating in Libya must have easy access to the banking sector which would ensure that the firms would have the opportunity to access the financial services of the banks.

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Appendix A. Source of Items

Items		Source
Access to finance		
1	Collateral requirements of banks/financial institutions	Beck et al. (2005), Ayyagari et al. (2006)
2	Bank paperwork/ bureaucracy	Beck et al. (2005), Ayyagari et al. (2006)
3	High interest rate	Beck et al. (2005), Ayyagari et al. (2006)
4	Need special connections with banks/ financial institutions	Beck et al. (2005), Ayyagari et al. (2006)
5	Banks lack money to lend	Beck et al. (2005), Ayyagari et al. (2006)
6	Access to foreign banks	Beck et al. (2005), Ayyagari et al. (2006)
Corruption		
1	They had ever made extra payment to secure public services such as electricity and telephone connections	McArthur & Teal (2002), Fernandes (2008), Escribano & Guasch, (2005)
2	They had to pay extra to obtain licenses and permits	McArthur & Teal (2002), Escribano & Guasch, (2005)
3	They had to pay more to take care of taxation related issues	McArthur & Teal (2002), Escribano & Guasch, (2005)
4	They had to pay bribes to get government contracts	McArthur & Teal (2002), Escribano & Guasch, (2005)
5	They had to pay extra to deal with customs and import related problems and when seeking assistance from the courts	McArthur & Teal (2002), Escribano & Guasch, (2005)
Infrastructure		
1	Quality of roads department / public works	World Bank (1999), World business environment survey, “Measuring conditions for business operation and growth”, private enterprises questionnaire.
2	Quality of postal service / agency	World Bank (1999), World business environment survey,

3	Quality of the telephone service / agency	“Measuring conditions for business operation and growth”, private enterprises questionnaire. World Bank (1999), World business environment survey, “Measuring conditions for business operation and growth”, private enterprises questionnaire.
4	Quality of the electric power company / agency,	World Bank (1999), World business environment survey, “Measuring conditions for business operation and growth”, private enterprises questionnaire.
5	Quality of the water / sewerage service / agency	World Bank (1999), World business environment survey, “Measuring conditions for business operation and growth”, private enterprises questionnaire.
Business regulations		
1	Business licensing	World Bank (1999), World business environment survey, “Measuring conditions for business operation and growth”, private enterprises questionnaire.
2	Customs/ foreign trade regulations in your country	World Bank (1999), World business environment survey, “Measuring conditions for business operation and growth”, private enterprises questionnaire.
3	Labour regulations	World Bank (1999), World business environment survey, “Measuring conditions for business operation and growth”, private enterprises questionnaire.
4	Foreign currency/ exchange regulations	World Bank (1999), World business environment survey, “Measuring conditions for business operation and growth”, private enterprises questionnaire.
5	Fire, safety regulations	World Bank (1999), World business environment survey, “Measuring conditions for business operation and growth”, private enterprises questionnaire.
6	Tax regulations/ administration	World Bank (1999), World business environment survey, “Measuring conditions for business operation and growth”, private enterprises questionnaire.
Crime		
1	Criminal attempts suffered by the firm	Escribano & Guasch, 2005
2	Products losses due to theft, robbery, vandalism	Escribano & Guasch, 2005
3	Products losses due to employees’ theft	Escribano & Guasch, 2005
4	The percentage of the firm’s total annual sales was allocated to security (equipment, personal);	Escribano & Guasch, 2005
5	The percentage of the firm’s total annual sales was allocated to protection payment	Escribano & Guasch (2005), Fernandes (2008).
Competition		
1	Avoidance of sales tax or other taxes	World Bank (1999), World business environment survey, “Measuring conditions for business operation and growth”, private enterprises questionnaire.
2	Non-payment of duties	World Bank (1999), World business environment survey, “Measuring conditions for business operation and growth”, private enterprises questionnaire.
3	Lack of observation of trade regulations	World Bank (1999), World business environment survey, “Measuring conditions for business operation and growth”, private enterprises questionnaire.
4	Foreign producers sell below international prices	World Bank (1999), World business environment survey, “Measuring conditions for business operation and growth”, private enterprises questionnaire.
5	Domestic producers unfairly sell below my prices	World Bank (1999), World business environment survey, “Measuring conditions for business operation and growth”, private enterprises questionnaire.
6	Avoidance of labour taxes/ regulations	World Bank (1999), World business environment survey, “Measuring conditions for business operation and growth”, private enterprises questionnaire.

7	Violation of the firm's copyrights patents or trademarks	growth", private enterprises questionnaire. World Bank (1999), World business environment survey, "Measuring conditions for business operation and growth", private enterprises questionnaire.
Human capital		
1	The proportion of professional workers in the staff of the firm	Escribano & Guasch, 2005
2	The proportion of skilled workers employed the firms	Escribano & Guasch, 2005
3	The fraction of the unskilled working for the firm	Escribano & Guasch, 2005
4	The fraction of female employees working for the firm	Escribano & Guasch, 2005
5	The percentage of the firm's staff that had come from abroad to work in the firm	Escribano & Guasch, 2005

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