

# Social and Economic Impacts of Supply Chain Performance Measurement and Productivity with Particular Reference to Iraq

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**Abstract**— A lot of countries suffer from the large size of the informal economy as some estimates suggest that the volume of the informal economy in the economies of developing countries, represents a range from a high percentage of (30% -70%) of the gross domestic product of these countries. It means that a large proportion of economic activities in developing countries is operated with a level less than optimal level of operation and with high cost, which limits the benefit from the resources and energies available to these facilities that operate within this economy. In the 1980s, we witnessed the deployment of a number of new production strategies, such as timely production, lean manufacturing, Kanban systems and comprehensive quality management. These new production strategies were used by a number of companies to improve the management system, increase production and improve process quality, and reduce waste production and inventory costs, in order to improve competition in various markets. Recently, while these strategies focus more on improving supply chain management to achieve their goals, henceforth a number of developed supply chain management strategies can be analyzed with the help of a computer. Choice-based decision support tools play a crucial role in collaborating and managing decision support markets from a set of multiple component supply chains. This study concludes that the reason for the spread and growth of informal economy is related to economic, social and legal factors, which include the lack of employment opportunities that have resulted from decrease in the number of projects in public and private sectors and their limitations as well as some obstacles, the most important of which, is the expansion of financial and administrative corruption. In addition to that, the high volume of the informal economy has positive effects and other negative ones that exceed the positive effects on economy, and the most important of these effects are tax evasion, lack of social protection for workers, and deformation of data and statistics. Therefore, this study has recommended that state should give more attention to this economy by collecting and analyzing

data and information on the labor market, preparing studies that show its economic feasibility, enhancing and expanding the extension of social protection, health, and occupational safety, improving governance climate in the country, strengthening the ruling of law and the legislations of labor law, improving the business environment for micro and small enterprises, establishing industrial and commercial complexes, facilitating the extraction of activity licenses, investing in education, and developing vocational training centers.

**Keywords**— *Supply Chain Performance, Productivity, Economic Impacts, business environment, occupational safety*

## 1. Introduction

The informal economy receives increasing attention as a result of the tremendous role it plays in the economies of countries, particularly developing countries, as it greatly contributes to the formation of income, labor absorption, reduction of the brunt of unemployment in these countries, as well as its role in poverty alleviation. However, it has some negative sides, which might greatly exceed its positive ones since created job opportunities do not often meet proper work standards as those who work in the informal economy suffer from low work fees, low level of work security, lack of social security, and there is low likelihood for them to get official education and training. In fact, concepts of the informal economy have varied and its absolute names and terminology have been many. Some of these terms include but not limited to: grey economy, parallel economy, black economy, shadow economy, informal economy, and underground economy. Actually, Iraq is a country, among many, that is suffering from the problem of the informal economy due to the changes that the Iraqi economy has witnessed throughout each historical period that the country went through [1, 2]. Probably, the most important period that featured the Iraqi history is the one after the nineties of the twentieth century, when Iraq witnessed an acute economic crisis, which had had its negative repercussion on the

economic and social sides and which resulted in the widespread of the informal economy as it is a reality in all economies and consequently, its activities are extended in different segments regardless of sex, age, education level, or marital status.

## 2. Problem of the Study

The expansion of the phenomenon of the informal economy constitutes a real economic challenge, whose most important dimensions are the difficulty of evaluating the economic reality due to inaccurate data about economic indicators such as unemployment rate, inflation, income, consumption indicator, workforce, etc. which makes it difficult for the makers of economic policies to know the actual impact of practiced economic and social policies and to know the shortcomings so as to avoid them and work on them in the future. As a result, the study is answering the following inquires:

- What is the concept of the informal economy?
- What is the volume of the informal economy?
- What are the main reasons for the spread of the activities of the informal economy sector in developing countries including Iraq?
- What are the economic and social effects resulted from the presence of the informal economy sector in economy?
- What are the policies of the transition to the integrity of the Organization within the framework of the International Labor Organization?

## 3. Hypothesis of the Study

The study is based on main hypothesis that states that the informal economy is an active and effective sector in the joints of economic and social life and that knowing the reason behind its spread and growth as well as knowing its negative and positive economic and social effects and its volume will contribute to the possibility of analyzing the phenomenon in question and put the solutions necessary to address and limit it.

## 4. Aim of the Study

The study aims at forming a clear envision of the problem of the informal economy by clarifying its concept and size and highlighting some of the main causes for the spread of its activities, expansion of its size, and economic and social effects resulted from its presence, and looking for ways to merge it within informal economy by

drawing up recommendations and remedies that would eliminate the reasons and address the effects.

## 5. Structure of the Study

The study incorporates four parts. The first part is a theoretical introduction to the concept of the informal economy as it focuses on the concept, formation, size, and the features of workers. The second part presents the factors behind its expansion. The third part is devoted to clarify the economic and social effects resulted from the presence of the informal economy, whilst the fourth part is looking forward to recommending some appropriate ways to organize it, providing security for its workers in accordance with the principles of the International Labor Organization.

### 5.1. First Part: The Informal Economy: Concept, Formation, and Size

#### 5.1.1. First: The concept of the informal economy and its formation

Since its formation, the concept of the informal economy has been connected with urbanity as it has been considered a phenomenon that is combined with the increase of urbanization rate and rural-urban migration. In developing countries, it depends on the concept of economic activity duplication and the split of the economy of these countries into the formal economy and the informal economy. However, the duplication approach of analyzing economic activity had been prevailing in economic development theories before the use of the idea of formal and informal sector by a long time, since the model that spread after World War was that presented by the economist, Arthur Lewis, as it had been based on the distinction between the two sectors of economic activity in developing countries- modern sector and traditional sector. In fact, the first study that presented the informal economy phenomenon is the one by the British researcher, Keith Hart, who had studied the informal economy in Ghana urban areas in 1971 and he was the first to use the term the informal sector in this study. Also, in that study, Hart presented a general concept of the phenomenon that had referred to the informal economy as part of workforce outside the official labor market because the researcher had considered the informal economy a synonym to small work groups consisting of family workers who work for living. Therefore, he depended on the size of the business rather than its nature [3]. In 1972, International Labor Organization adopted the term the informal economy in the report of its Kenya mission, known as employment mission, whose tasks were related to the issue of unemployment and the circumstances of the unprivileged people at

that time as the report stated that the main goal of informal economy activities had been one of the topics of the International Labor Organization agenda.

### 5.1.2. Second: The impact of supply chain in economy efficiency

Supply Chain is a compound network composed of several components of the facility. In most cases, the facility and the supply chain have conflicting and different objectives. Finding the best strategy for a specific supply chain is a type of competition to find the right goals for all facilities. One way to find a strategy for the supply chain is by modeling the network structure, so that the network consists of nodes and arcs, in which the facilities in the supply chain system, by node are shown and a flow path of the material that enables the functionality of the facility is represented by arcs (branches) [4]. The Informal economy has a peculiar significance due to its size in comparison to the economies of the world in general and due to its contributions in developing countries in specific. Hence, its production represents 27% of the gross domestic production in the United States, 20% in Italy, 10% in Sweden, 8% in the United Kingdom, but it approximately represents no less than one-third of the economic activity in developing countries. Furthermore, some sources state that the informal sector occupies 28% of the total activists in the world during the nineties of the twentieth century and during the twenty-first century and the effects of the world money crisis have expanded the informal economy sector as the volume of people working in this sector reaches approximately 900 million and if we take into consideration the agriculture sector, the number rises to about 2 billion people, i.e. two-thirds of employed people in the whole world. And according to recent estimates, nonagricultural employment represents 82% of gross employment in South Asia, 66% ,in Sub-Saharan Africa, 65% in east and south eastern Asia, apart from China, 51% of Latin America, and 10% of Eastern Europe and Middle Asia. These averages actually hide huge differences between countries and according to recent statistics of the International Labor Organization of 47 states and territories, the percentage of people who work within informal nonagricultural employment in Latin America and

the Caribbean is 4%, in Uruguay, 75%, in the multi- nationality state of Bolivia and Sub-Saharan Africa, 33%, in South Africa, 82%, in Mali and south and east Asia apart from China, 42%, in Thailand, 83.5%, in India, north Africa, and the Middle East, 30.5%, in Turkey, and 58.5% in West Bank and Gaza.

Moreover, in most of the countries, whose data are classified according to sex, women's share of informal employment and nonagricultural activities exceeds men's share. For instance, in Sub-Saharan Africa, 74% of women's employment, that is nonagricultural, is described as informal in comparison to 61% of men's share, in Latin America and the Caribbean, the percentage for women's share is 54% in comparison to 4% of men's, and in South Asia, it is 83% for women and 82% for men. In sum, these percentages indicate the feminization of poverty in combination with discrimination based on sex, age, ethnicity, or disability and it also leads to say that the most vulnerable and marginalized groups are liable to end up into the informal employment. In similar veins, informal employment constitutes a big proportion of the economic activity in the Arab Homeland as recent estimates of the International Bank confirm that this sector contribute to what is equivalent to one-third of gross domestic product and two-thirds of the positions in these countries. The percentage of the informal economy ranges between 35% and 66% in the remaining different states, each according to the level of development and urbanity of their economies as the estimates of the International Bank state that, nowadays, about two-thirds of Arab workers work informally. Consequently, it is quite natural that the private sector absorbs the biggest part of informal unemployment in different countries in general as the data state that, approximately, all workers in the private sector in each of Yemen and Iraq are informal- their percentages of informal employment are 99.7% and 99.1% in both countries respectively, whereas, the lowest percentages of informal employment in the private sectors are in the two countries that have the smallest volume of employment, namely, Lebanon (63.5%) and Jordan (68.8%). As it is illustrated in Table (1) below, two-thirds of the workers in private sector are informal in all of the mentioned countries apart from Lebanon.

**Table 1.** Comparison of the volume of informal employment as a percentage of the workers gross and the gross of private sector workers according to the state

Volume of informal employment	Iraq	Egypt	Lebanon	Morocco	Syria	Yemen	Jordan
As a percentage of total employment	66.9	58.3	56.2	81.9	71.0	91.4	44.2
As a percentage of the private sector employment	99.1	81.0	63.5	88.7	93.1	99.7	68.0

### 5.1.3. Third: Characteristics of workers in the informal economy

Workers in the informal economy are featured by a group of characteristics that can be listed in the following points:

1. Most of the workers in this sector are young people whose ages are less than thirty-five years.
2. Most of the workers in the informal economy are among the literate or the semi literate people.
3. The informal economy is a fertile area to those vulnerable groups such as children, women, and disabled people. With the exacerbated problem of unemployment that accompanied the economic crises represented by economic recession or economic slowdown as it is the case nowadays, the main problem appeared through the correlation between crises state and the enlargement of the volume of unemployment, whose negative effects impact those groups more than others.
4. Most of these works require scarce capital and they depend on cash-flow.
5. Most of them have a family form or a few numbers of workers.
6. Most of the time, the owner of business is also the manger; and therefore, there is no separation between management and ownership.
7. In it, there is no commitment to the state whether through paying taxes or paying fees, but, at the same time, it takes advantage of the available infrastructure services.
8. It uses low-technology and as a result, it depends on the heavy use of workers instead of capital.
9. The income of its workers differ as some of the workers try to secure the needs of life for them and their family while some others look forward to speedy richness and at this point it is feared that this economy can be turned into criminal economy as this sector is subject to a specific arrangement determined by the social norm or the capital ownership.

10. Its workers are exposed to authorities' interventions and police harassment as they are usually considered illegal workers.

### 5.2. Second part: Characteristics of the informal economy workers in Iraq

International Bank data have provided some of the characteristics of the informal workforce in Iraq, which are the following [5, 6]:

1. Private sector absorbs the biggest part of the informal employment as the data indicate that, approximately, all of the workers in private sector are informal because their percentage is 99.1% and they are concentrated in urban areas with 68.7% of the total number of private sector workers.
2. The percentage of female workers did not constitute a quarter of the workers whether on the overall level or the private sector level with an approximate correlation between the female percentage of the total number of workers and their percentage of the private sector workers. These percentages are 10.2% and 5.4% respectively, and 98.9% of the female workers in private sector are informal compared to 99.2% of informal male workers in private sector.
3. About 75% of the total number of single workers works in the informal economy.
4. Workers who have a primary school education, as a maximum, form "the highest percentage of the total workers with 45.9%, whereas the percentage of those who have higher school education is as low as 5.9%.
5. All of unpaid workers are classified under the informal employment.
6. All self-employed workers are classified as informal workforce.
7. Half of wage-earners are informal, whereas about all of workers in private sector are informal workforce.
8. More than one-fifth of workers work in manufacturing industries with the service sector being the largest employer as the percentage of those who work in this sector is 27.5%. In this sector, employment centers around public

- management activity and social service, with 37.2%, which makes it, naturally, the most formalized sector as it includes the public sector employees and governmental institutions that are often formal. Nevertheless, informal workforce is clearly present in institutions of this type of activity in private sector with 87.9%.
9. As far as the ownership of paid workers by the business is concerned, 99.1% of paid workers in private business are informal.
  10. The results of "mobile units" scanning, in Iraq, have shown some of the characteristics of the informal workforce in Iraq and of the workers in mobile units. These are the following:
    11. The percentage of informal employment is 84.4% of the total number of workers classified as young group (age: 15-24 years), that is, 61.9%, and the percentage of the group (age: 25-34) is 62.1%, and that of the age group (age: 35-54) is 58.8%.
    12. Results have shown that about 95% of mobile units' owners are males in Iraq in general, whereas, in the governorates of Iraq, results have been close and in the percentage of 92%, except Maysaan as the percentage of male owners of mobile units is 78.55%.
    13. Results have shown that about 90% of workers have middle school certificate as a maximum degree of education, whereas only 1% of them have Bachelor degree in education. These percentages are in Iraq in general [7, 8].
    14. There are about 46% of workers whose work history goes back to the past fifteen years and that is in Iraq in general.
    15. A percentage of more than 94% of workers have their current job as the only single job they have in most of the Iraqi governorates. However, this percentage rises to 100% in the Iraqi governorates of Kirkook, Al-Qadiyssiyah, Al-Muthenah, and Thi Qar [9].
    16. Results have indicated that 91% of mobile units' owners, in Iraq as a whole, state that the reason for considering their current jobs in mobile units as their only single job they have can be attributed to the lack of a job that would suit their qualifications besides that they have not obtained any other job yet.
  17. Political and security instability, wars, and crises that the country has witnessed for a number of decades and the accumulated effects of wars, which turn economy into war and armed community economy [10].
  18. Decline of infrastructure and services, particularly the insufficiency of service units such as markets as well as commercial and industrial parks. This has led to the rising of rental payments, and has urged workers to work in parks, public roads, and residential areas.
  19. There is no alignment between educational outputs and the needs of the labor market, which results in rising the percentage of unemployed school graduates, who find themselves obliged to work in the informal economy [11, 12].
  20. Security circumstances and the forced displacement of population from their residential areas by armed groups have resulted in turning a great numbers of populations into displaced people as they lost their homes and livelihoods.
  21. Draining of the marches and neglecting the rural areas have led the population of these areas to migrate to other places in order to live and work within the informal economy for it is easy to enter and exit this type of economy.
  22. Population growth, which leads to increasing the pressure on the available supply in the labor market.
  23. Inadequacy of the environment of practicing work activities (the investing climate) and the decrease of the investments aiming at developing the Iraqi economy whether on the inside or outside level. In other words, the investment sector is confronting two main problems, namely, little foreign investment that is directed toward Iraq and capital migration outside the country as it stops participating in achieving development inside the country
  24. Expatriate labor as a great number of such workers work without licenses or security.
  25. Limited employment opportunities that are provided by the formal economy system.
  26. Tax evasion.
  27. Informal economy is a stable feature of countries lacking equitable distribution of revenues and properties, like Iraq.
  28. High costs; complicated government regulations; prevalent corruption in business management and granting work licenses and land ownership deeds, and the large number of bureaucratic procedures designed by the government.
    1. Inability of State institutions to provide education and training.
    2. High percentage of women with no male breadwinners: widows or unmarried women, who

### 5.2.1. The main reasons for the spread of the informal economy activities in Iraq

Iraqi economy has witnessed many deep changes during the past decades; therefore, the speedy growth of the informal economy in the Iraqi economy can be attributed to the following factors:

found themselves forced to undertake small jobs to make living.

3. Work requirements are very simple: no need for formal education, low costs, intensive labour, minimum requirements to get into the business in terms of capital and qualifications.
4. The workforce in the country lacks the skills necessary to develop an efficient private sector in the formal market, which causes excessive levels of government employment.
5. Openness to world markets, which resulted in lower custom tariffs, decrease of competitiveness of local products compared to foreign products. Consequently, production projects owners opted to terminate their projects and head into businesses and activities with lower capital and smaller production capacity.
6. The policies imposed by the International Monetary Fund, the negative effects thereof, and the Country's shift towards market economy.

### 5.3. Third Part: Effects Resulting from Informal Economy

Informal economy, like any other phenomenon, has negative and positive effects. Due to their importance, the negative ones will be discussed first.

#### 5.3.1 First: Negative Effects

Negative sides of informal economy significantly outnumber its positive ones, as its characteristics are, by nature, mainly negative. They can be summarized by the following:

##### Economic Effects

There is a set of economic effects that interacted with each other to create informal economy. The most significant economic effects of such sector are:

- A. Misappropriation of resources: Having a complicated regulatory and legal framework does not lead for optimal use of resources. In addition, insufficient property laws impedes creation of new capital for the private sector.
- B. Low Productivity: Informal economy production relies heavily on unskilled labour and limited use of technology. High cost of entering the formal market prevents new enterprises from competing.
- C. Low State Revenues: Complicated systems and regulations and high taxes causes high levels of incompliance, which in turn decreases state revenues and undermines state ability to provide public services.
- D. Limited Access to Public Services: Informal enterprises are mostly denied access to public services. Thus, taxpayers pay higher amounts for getting services lawfully.
- E. Official Statistics: Informal economy negatively affects official statistics since activities of such sector are not registered with formal authorities. Furthermore, revenues coming from its activities are out of the cash flow cycle and as a result they do not appear in formal measurements of gross domestic production and income, causing such statistics to give unclear and incorrect picture of the reality and growth rates of national economy. Because of that it is difficult for economic policy makers to know the actual effect of economic and political policies implemented and identify inadequacies to find suitable remedies.
- F. This economy has negative effects in industrial and commercial fields as it provides – due to low manufacturing cost and low quality – goods at prices lower than those of goods produced regularly, embodying the saying: “low-quality goods drive high-quality goods from the market”.
- G. Economic Growth: Effect of informal economy on economic growth manifests itself in two ways: first, informal economy decreases tax revenues which weakens the State ability in terms of public spending, especially on infrastructure, which is the basis for production that stimulates economic development. Supporters of this view argue that informal economy should be stemmed. A study by Norman Loayza found that when informal economy increases by 1%, “the growth rate of official real GDP per capita decreases by 1.22”. Second, incomes coming from informal economy activities are channeled into formal economies, raising consumption spending which in turn stimulates production and thus market activities increase. Empirical studies have proved that no less than two thirds of incomes made are swiftly spent in formal economy. Such researchers call for increasing the size of this economy. A study by Fredrick Schneider found that increase of the informal economy's share in the GDP has positive effects in developed and transition countries but negative effects in developing countries.
- H. One of informal economy most obvious effects is that it encourages parallel market and thus circulation of informal monetary stock, which negatively affects the banking system as its ability to give loans to informal economy is undermined.

### 5.3.2. Second: Positive Effects of Informal Sector

Despite the negative nature of most of informal economy's economic effects, its social effects may take a positive form:

- A. It alleviates poverty. Most poor people work in informal economy and make living through it. In addition, it provides goods and services at low prices and thus enable people with low income to buy such goods and services.
- B. Informal economy offers job opportunities for women, especially in developing countries, where women educational achievement is lower than men's, with women carrying out their jobs either at home – knitting, home products – or out of home in small workshops.
- C. Informal economy plays a role in alleviating commotions that may arise due to the poor and unemployed disgruntlement and consequently helps maintain stability.
- D. It helps securing self-sufficiency with respect to some materials and requirements.
- E. It increases individuals' incomes, especially when real incomes are low, as business opportunities low cost help creating many job opportunities which in turn create others and so on, raising persons' incomes. A study conducted by the World Bank found that an increase of 1% in a person's share in GDP leads to an 18% increase in job opportunities increase rate.

### 5.4. Fourth Part: Policies of Transitioning into Formality

#### 5.4.1. Within the Framework of the International Labour Organization (ILO)

Efficient and appropriate responses to the reality and development of informal economy can only be designed at the national and local levels with contribution from social stakeholders, focusing mainly on vulnerable sections like women, children, immigrants, house workers, etc. Moving from informal economy to formal economy is the pronounced goal of the three entities forming the ILO as this is the only way to face the huge defects in informal economy in terms of insufficient rights, protection, and dialogue.

International labour standards may be a road map guiding responses compatible with policies. Such road map asserts implementation of the eight fundamental agreements containing the basic rights that conclusively help moving away gradually from informal economy and poverty. They also rely on

the four main agreement and judicious management instruments aiming at incorporating efficient policies in the labour market, ensuring appropriate enforcement of law, supporting supervision of state authorities, and encouraging joint search for solution through trilateral dialogue. Effective implementation of those twelve instruments at the national level the basic ground for gradual exit from informal economy.

Proper work provides a solid framework to identify aspects of informality that need to be examined (i.e., specific elements of proper work) and identify types of public policies and institutional checks that may promote or prevent more integration with general economy.

## 6. Conclusions

The supply chain performance is an indicator of Success Company in conducting the business process. The measurement of supply chain performance is required to take control and recognize the company's performance position. The objectives of this research were to identify business process value-added within the supply chain, to measure the supply chain performance, and to formulate strategies for improving the supply chain performance. The supply chain performance measurement result showed that the sugarcane factory has poor performance while plantation was in very low performance. Evaluation of supply chain's internal and external factors indicated a strong condition and would deal with possibly great threats. This study suggested to conduct follow up research in the sugar production system in order to maintain improvement on qualities, yields, and performance which eventually lead to supply chain performance improvement.

1. Size of informal economy is bigger in developing countries as compared to developed countries.
2. Iraqi economy has suffered political, economic and social problems like war, inflation, high unemployment rates, corruption of all types, displacement, and other factors that contributed to increasing the size of informal economy.
3. The large size of informal economy has both positive and negative effects that can be attributed to economic, social, and legal reasons like lack of job opportunities because of the small number of projects created by the public and private sectors as well as other impediments, most notable widely-spread administrative and financial corruption.

## 7. Recommendations

1. Admitting the role of informal economy as a drive for growth and creating job opportunities. There should be in place policies aiming at developing this type of economy to support creation of job opportunities and ensuring its transformation to lawful projects.
2. Policies should focus on the causes not the effects – the reasons that caused this type of economy to spread.
3. Efforts should be made to organize informal accommodation – one of the main factors encouraging the spread of this sector through (crafts, workshops, trade, etc.)
4. Investing in education and vocational and technical training centers and increasing their capacities, especially in poor, highly-populated areas.
5. Promotion and extension of social protection, health, and occupational safety to include business owners and laborers in informal economy.
6. Varying economy revenues and paying attention to rural development to create job opportunities that encourage settlement in rural areas, and offering facilitations for young people who want to invest in agriculture.
7. Increasing State's interest in this economy by collecting and analyzing data related to labour market and conducting feasibility studies.
8. Focusing on media's role in spreading labour culture concepts, promoting union organizations, raising awareness of all members of society in general and women in particular regarding labour and human rights and the important role they play in economy and society.
9. Improving governance in the country, supporting rule of law, making legislations on Labour and devising mechanisms for their implementation especially with respect to securing acceptable limits of social protection and minimum wage for workers.

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