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# **Labor Productivity in Tunisia: Analysis of Issues and Solutions**

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*Abstract: This research reviews relevant studies and reports about labor productivity in Tunisia, proposes an overview of issues influencing its efficiency and offers solutions to enhance it. Besides, this research compares some labor productivity metrics in Tunisia and other countries in order to uncover interesting patterns in the past years and suggest explanations to these patterns.*

## ***Introduction***

Labor productivity (LP) is defined as the total number of labor hours (for all employees per specific period of time) divided by the total number of items produced or manufactured during that specific time. A competing view defines it as output per capita that is the gross domestic product (GDP) per unit of labor input or person employed. It depends on investment in capital, technologies and human asset. It is then an important measure of economic performance (KILM, 2002).

According to Global Competiveness Report 2013-2014, Tunisia is ranked 83<sup>rd</sup> out of 148 in terms of global competitiveness index (GCI) compared to the rank 40 out of 142 in 2011-2012. The sharp drop of competitiveness is alarming and requires careful analysis of roots of problems as well as implementation of solutions to avoid disastrous consequences.

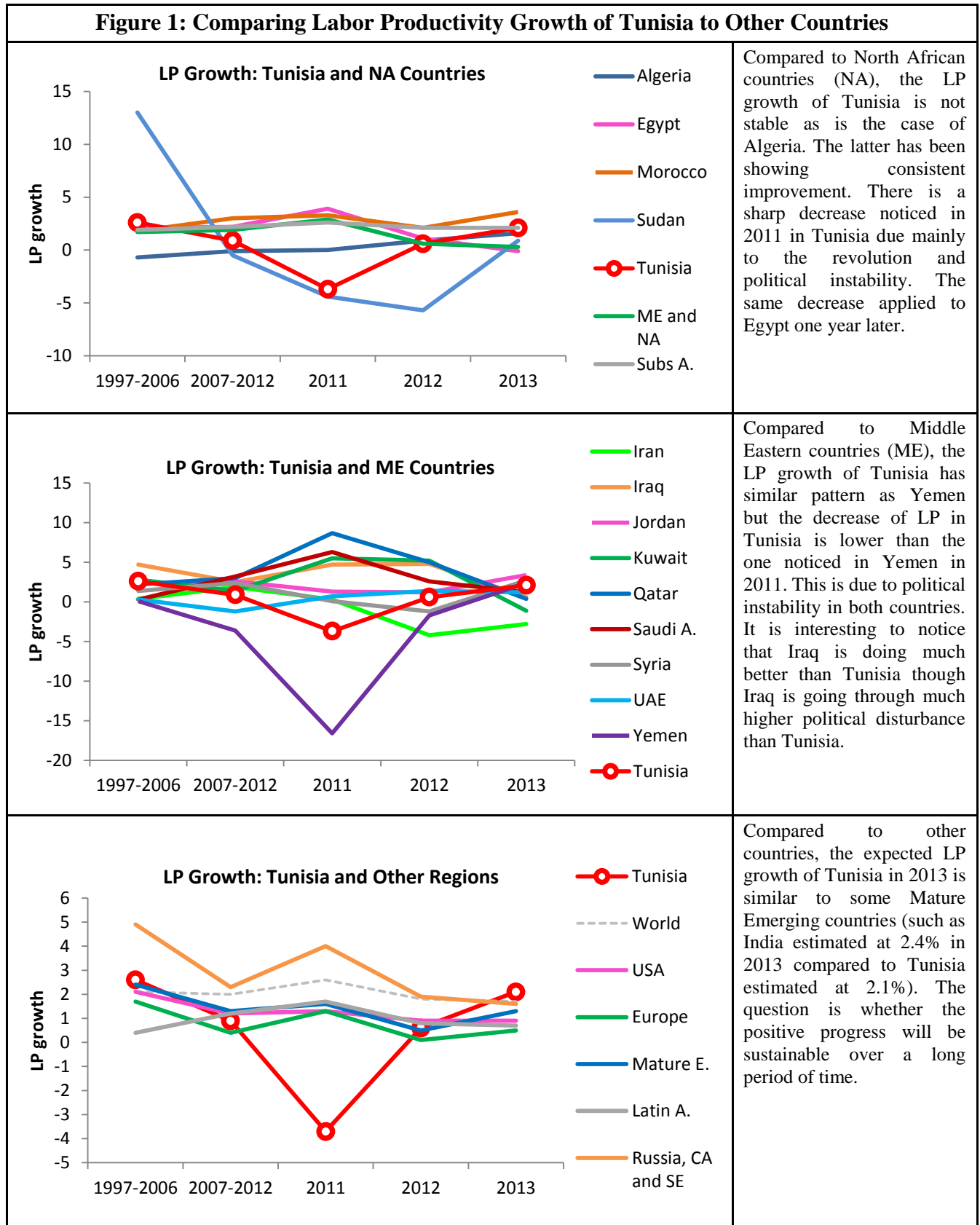
## ***Labor Productivity Differential***

According to Table 1, the contribution of each worker to GDP in Tunisia compared to USA is very low (22.5%). It is close to the world average, Algeria, Jordan and to the total average for Middle East and North Africa. It is, however, better than Morocco and Egypt. Kuwait and Saudi Arabia are the Arab countries performing excessively well in terms of worker contribution to GDP. Qatar and UAE even exceed the USA in terms of labor contribution to GDP.

**Table 1: Labor Contribution to GDP Compared to USA in 2013**

<b>Countries</b>	<b>GDP / Person as % of US in 2013</b>
Algeria	22.9
Egypt	16.6
Morocco	11.9
Sudan	4.4
<b>Tunisia</b>	<b>22.5</b>
Subs A.	4.9
Bahrain	45
Iran	36.3
Iraq	34.1
Jordan	24.1
Kuwait	82
Oman	69.7
Qatar	143.1
Saudi A.	83.3
Syria	19.7
UAE	107.3
Yemen	8.4
ME and NA	29.6
World	25.3
USA	100
Europe	65.8
Mature E.	70.7
Latin A.	22.2
Russia, Central Asia and Southeast	27.6

Source: Data retrieved from [www.conference-board.org](http://www.conference-board.org)



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A close comparison of Tunisia to some Mature Emerging countries is reflected in the Table 2 below:

**Table 2: Comparing Tunisia to Some Mature Emerging Countries**

Countries	GDP / Person as % of US in 2013	LP growth estimated 2013	TFP growth 2012
China	17.1	7.1	0.6
India	8.1	2.4	-0.4
<b>Tunisia</b>	<b>22.5</b>	<b>2.1</b>	<b>-0.3</b>

Source: Data retrieved from [www.conference-board.org](http://www.conference-board.org)

According to the Conference Board Total Economy Database, the world LP growth has been decreasing since 2010. It declined from 3.9% in 2010 to 1.7% in 2013. The slight decrease of the LP growth in 2013 is due to the stabilization of productivity growth in mature economies. LP growth in US stabilized at 0.9% in 2013 compared to Europe 0.5% in 2013 due to the slowdown of the recession and LP growth in emerging and developing economies decreased from 3.7% in 2012 to 3.3% in 2013. According to the same database, the total factor productivity growth (measures the productivity of labor and capital together), is less than zero for the world economy. This is due to inefficiency in allocating and using resources, slowing demand, market rigidities and status quo of innovation.

### ***Chronology of Strategies Affecting Labor in Tunisia***

Ben Jelili and Goaid (2009) explained thoroughly the chronology of Tunisia's economic planning. We summarize below their main findings:

- Highly centralized economic system during the 60's but the cooperative experiment ran for few years (1964 to 1969) encountered many difficulties.
- Promoting the private sector (e.g., off-shore sector) during the 70's and continuous support to public sector (e.g. manufacturing).
- Emphasis on labor intensive manufacturing financed by private investors through institutions such as the *Investment Promotion Agency* (API), the *Center for Export Promotion* (CEPEX), and the *Industrial Real Estate Agency* (AFI).
- Promulgating different laws (e.g., Law 72-38) providing tax concessions, duty-free import of resources and offshore industrialization.
- Over-dependence on oil revenues at the end of the 70's and lack of investment in infrastructure leading to unstable productive base.
- Sixth development plan (1982-1986) focused on non-oil industries and cuts in public investments.
- Starting from 1987, structural adjustment (SAP strategy) related to economic and financial policies under the Seventh (macro-economic stability and measures of liberalization) and the Eighth Development Plan (efficiency and legislative trade incentive mechanisms).
- Some sectors (e.g., agriculture, some manufacturing industries, agribusiness, public works, and some totally exporting services) require no preliminary authorization and enjoy taxation and import duties exemption.
- Benefits granted through the *Fund for Industrial Promotion and Investment* (FOPRODI) for small and medium firms.

- Free trade zones in Bizerte and Zarzis (mid 90's) to encourage foreign investments.
- Reforms about firing and limited duration contract impacted the labor market since 1994 and provided less uncertainty and greater flexibility to employees.
- During late 90's, creation of *Fonds d'Incitation à l'Innovation dans les Technologies de l'Information* (FITI).
- Implementation of the Industrial Modernization Program financed by the European Union to prepare Tunisia's entering the free trade agreement. Investment in innovation and new management styles are crucial to allow Tunisian firms to be competitive in the new market.

## ***Labor Facts in Tunisia***

According to the report *Towards a New Economic Model in Tunisia* (2013), the following facts could be retained:

- Tunisia ranks 84 out of 85 just after Russian Federation in terms of flexibility of laws about hiring and firing workers (Botero et al. 2004).
- Relationship between pay and productivity is weak compared to other countries due to the centralized system for wages. This wages' system constrains investment which decreases employment. Labor market regulations (preventing to pay workers in line with their productivity) have been shown also to increase youth unemployment.
- Tunisia Labor Code is the most restrictive regulation in the world regarding dismissal of workers.
- From 2004 to 2010, there was a growth of LP for all sectors except agriculture with - 4.6% for agriculture, 3.6% for manufacturing, 1.9% for services and 6.7% for industry excluding manufacturing (Tunisian NIS statistics, 2010).
- In 2010, the employment share for each sector is 17.7% in agriculture, 18.4% in manufacturing, 14.6% in industry excluding manufacturing and 49.3% in services.
- In 2010, the highest LP is for services with 10,000 Dinars / year at 1990 prices for services compared to 8,000 for manufacturing and industry excluding manufacturing and 4,000 for agriculture (Tunisian NIS statistics, 2010).
- Gain in LP growth (2000 to 2010) is low compared to other middle income countries. The slow growth of LP is reflected in the slow growth of wages in private sector.
- High unemployment rate (specifically for educated people) affect the LP. The rate has reached 22.9% for tertiary education level in 2010 (Labor Market Survey, 2010).
- Labor force rate among female is at 25.3% in 2010 compared to 69.7% among male which is much lower than middle income countries that is around 60% for female. The low labor force participation is striking as the school enrollment for female is in general higher than male (e.g. the tertiary enrollment for female is 150% the enrollment for male in 2009).
- There is a significant negative relationship between labor market efficiency and youth unemployment. More specifically, an increase of labor efficiency by 1% decreases the youth unemployment by 12%.
- Though Tunisia shifted from agriculture and mining (mainly phosphate) to service and manufacturing industries, increased the diversification of its exports (in terms of product assortment and countries destination), and enhanced the technological content into its

exported products (mechanical and electrical products), there is a deep lack of value added in the exported products due to dearth of innovation.

- The top 10 barriers to do business in Tunisia are: 1/ inefficient government bureaucracy, 2/ access to financing, 3/ government instability, 4/ policy instability, 5/ restrictive labor regulations, 6/ inadequate infrastructure, 7/ corruption, 8/ poor work ethic in national labor force, 9/ inadequately educated workforce and 10/ tax regulations (World Economic Forum, Global Competitiveness Report, 2011 to 2012).

## ***Summary Framework of Issues and Solutions***

A summary of challenges and positive factors for LP is proposed in Figure 2 based on all reviewed reports and studies. Not all factors (presented in Figure 2) have been proven empirically which triggers many interesting research questions to be investigated in future studies using quantitative methods. Ben Jelili and Goaid (2009) listed a number of obstacles to productivity in Tunisia and a number of MENA regions such as regulatory and administrative burdens, inconsistency to international norms, unclear policies, economic distortions (leading to corruption), barriers to private investment, and bureaucracy. These constraints are barriers to successful entrepreneurship start-ups and ultimately impact negatively the GDP growth. Djankov et al (2002) showed that higher regulation of entry is associated with higher levels of corruption which is detrimental to the economy by expanding the number of informal firms (having lower added value).

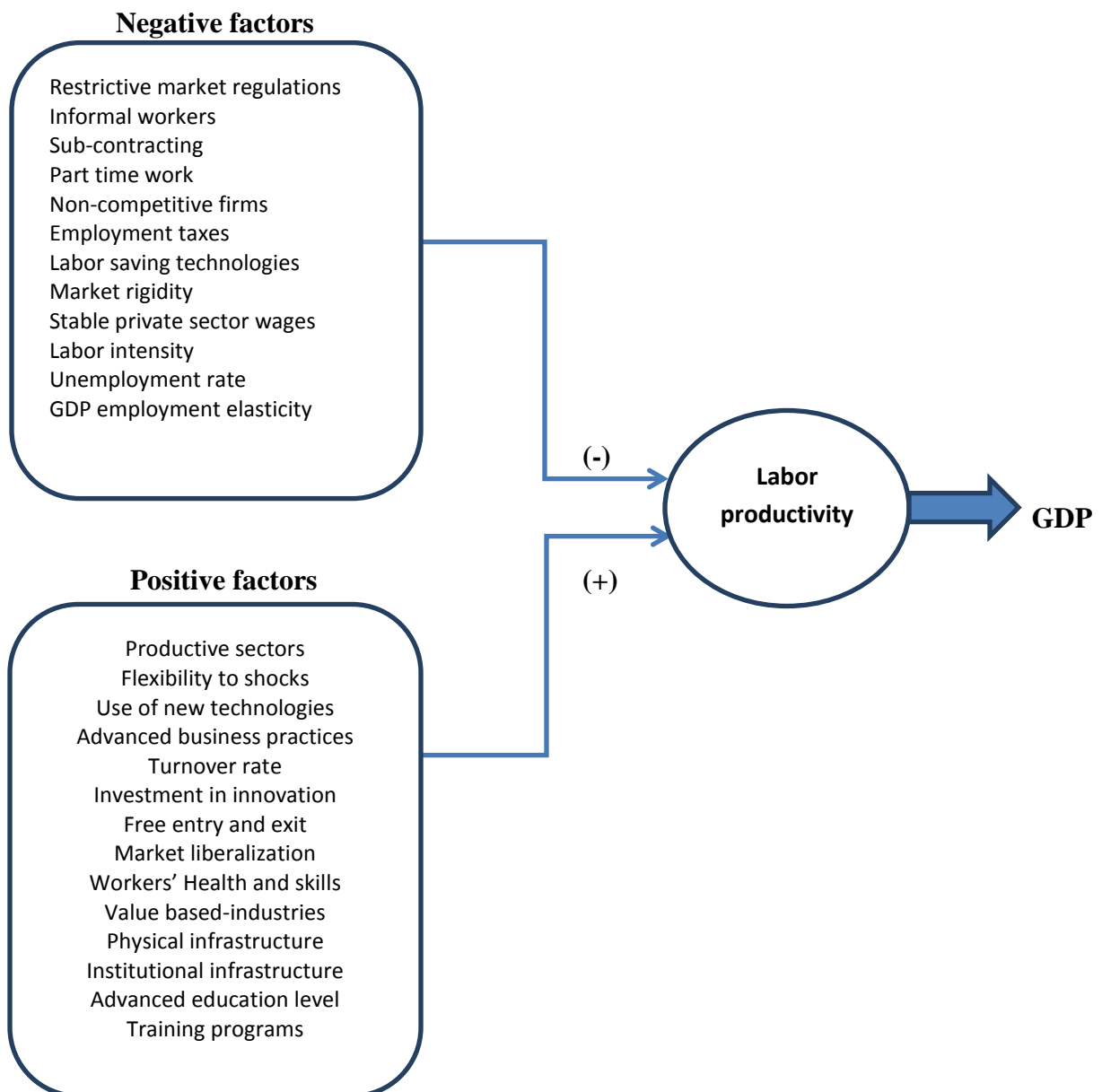
Djankov et al (2006) showed that the countries in the highest quartile of the index of regulations' burden grow 2.3% faster than countries in the lowest quartile which implies the importance of one-stop shop registration to avoid administrative burdens. Using a panel of data (1996 to 2004) about 15 manufacturing sectors, Ben Jelili and Goaid (2009) showed that an increase in labor force leads to lower productivity growth. However, an increase of firm turnover rate (entry rate + exit rate) increases LP which implies that the government should encourage free entry and exit. The problems remain however in the industry consolidation and capital resources (barriers to entry) as well as sunk costs based on investment on every worker (barriers to exit).

According to the report *Towards New Economic Model in Tunisia* (2013), the problems of LP are numerous such as labor market regulations, informal workers, sub-contracting and part time work to avoid labor requirements and regulations, low investment due to formal conditions, small non-competitive firms, high employment taxes leading firms to remain small and less productive, low innovation and competitiveness, low market flexibility and finally, using labor saving technologies to avoid financial constraints. The later reduces demand and wages and increases unemployment which ultimately decreases LP. The slowing of LP growth combined with stable private sector wages and low employment is a sign of economic weakness.

According to *Modeling and Analysis of Tunisia's Productive System* (2011), additional barriers to Tunisia competitiveness are the interchangeability of unskilled labor and graduate labor in all sectors, low job offer for qualified young people, high expectations in terms of salary, mismatch between training and needs of the sector, low flexibility of industrial sector to adapt to shocks, and high rigidity to adjust production factors (3 to 4 years to see significant adjustment).

According to the same report, between 1997 and 2007, LP decreased in the sector of textiles, clothing, chemicals and pharmaceuticals, rubber and plastics, and automobiles. Textile, apparel and leather, and chemical industries are very sensitive to price which requires effective solutions (e.g., quality standards) to improve their competitiveness and protect further those sectors. The Hydrocarbons sector necessitates also close attention due to its highest sensitivity to price changes. Besides, LP increased more in medium-sized companies compared to large ones, and more in Tunisian businesses than in foreign ones. The later result is interesting as we expect the opposite finding. LP increased in seven industries agri-food, leather and footwear, timber, paper and publishing, non-metal materials, metal materials, electrical machinery and furniture.

**Figure 2: Summary Framework of Factors Affecting Labor Productivity**



According to *Towards New Economic Model in Tunisia* report (2013), some solutions have been proposed to increase LP such as labor and resources focusing on most productive sectors, more efficient use of technologies and business practices, and enhancement of innovation.

According to *Labor Market Dynamics in Tunisia* report (2011) in combination with World Bank assessment and recommendations (2004), tackling youth unemployment issue is of absolute priority. Additional solutions are intensifying liberalization for commodities, services and labor, promoting and developing the private sector, developing workers' skills, enhancing market flexibility, lowering the rigidity of regulations regarding work contracts, adjusting the wage policies favoring public sector over private one, promoting higher participation among female especially in the private sector, as well as encouraging their participation in self-employed companies and more qualified positions. The later issues around female choices in terms of employment level and type must be addressed to investigate the reason for such selections and propose effective incentive mechanisms to encourage higher participation and stronger title occupations for female. Other solutions concern programs of professional integration for better targeting of skills (not only based on first job seekers). The regional development policies are also important factors that could help LP.

## ***Conclusion***

This research proposes a summary framework to uncover the problems stemming the LP in Tunisia and the proposed solutions to improve it. Additional issues at the micro-level require further attention and could be subject of future research to understand at deeper levels the roots of the problems. First, a study of leadership and labor motivation, team work and corporate culture could reveal interesting findings in Tunisian firms. Zenger (2013) showed that all three components play a key role in impacting LP. Second, a close comparison of Tunisia to other countries in terms of work ethic could disclose further explanations to LP weaknesses. An example is the comparative analysis of China and South African work ethic (Slabbert and Ukpere, 2011). However, such comparison should take into account the political system of each country and comparable economic programs. Another example is the role of nationalism (rather than cheap labor force) promoted through education and economic policies and combined with wages equal to productivity levels in enhancing the economic development of Korea (Kwak, 2002). Finally, an important tool for decision making is data analytics. McAfee and Brynjolfsson (2012) showed that using such tool increases productivity by 5% and profitability by 6% compared to competing companies. Future studies could assess the techniques used in Tunisia and propose areas of improvement.

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