



# WORKING PAPER

## Do Institutions Matter for Informal Employment in Jordan, Egypt and Tunisia?

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EMNES Working Paper N° 3 / February 2018

### Abstract

The paper sheds light on the role of institutions, in addition to values and individual characteristics on the likelihood of being informally employed in Jordan, Egypt and Tunisia. Using the Labour Market Panel Surveys of the three countries, in addition to the World Value Survey and the World Governance Indicators, we examine determinants of informal employment. Our results show education and values play an important role in the decision to be informally employed. Moreover, institutions matter in the informality decision.

Keywords: informal employment, informal institutions, formal institutions, Egypt, Jordan, Tunisia.

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*The authors are grateful for Jacques Charmes and Ahmed El Badawi for their comments and feedback.*

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## Introduction

During the past few decades, the subject of the “informal economy” has increasingly been a focus of research and public policy. This is because of the significant implications that this sector has for public policy from social and labour market perspectives, along with those of law, national accounting and public finance (Bernabe, 2002). In addition, there has recently been a huge increase in the size of this sector in many countries worldwide. In some countries in Africa, it is estimated that the informal economy or the unofficial economy accounts for about 60% of economic activity (Jonasson, 2011).

From the social policy and labour market perspectives, the informal economy is considered to be very important, since it represents a significant source of employment and income for individuals in many countries, where there are a limited number of formal employment opportunities and social security is virtually absent. Furthermore, from legal, national accounting, and public finance perspectives, the informal economy is also considered vital. Criminal and illegal activities undermine the legal system and could result in social instability and a breakdown of law and order. Also, the inability to capture all economic activities within national accounting may lead to the underestimation of GDP. This weakens the ability to conduct cross-country comparisons of national income and impairs the validity of statistics based on GDP per capita. Moreover, tax evasion decreases government revenue and, hence, weakens the government’s ability to intervene in the economy, invest in public goods, and provide social security. On the other hand, when corruption and red tape (heavy bureaucracy) undermine the growth of small businesses, the informal economy in this case may be conducive to growth, and taxation might not always be economically efficient (Bernabe, 2002).

According to a study conducted by EMNES on institutions and labour market in four MENA countries (Egypt, Jordan, Morocco and Tunisia); “institutions provide the governance structure of the labour market. This affects employment and shapes the behaviour of employers and employees vis-à-vis each other” (Badawi et al., 2017). Therefore, understanding the role played by institutions in the labour market and the rising of informality is vital, both for policy making and for the design of institutional reforms. According to our literature review, studies including institutions, as determinants of informality, are relatively rare. Moreover, most of those studies investigated the role of institutions with regard to the informal sector, not informal employment. Research in this field in the MENA region is even more scarce. Hence, the main objective of the current study is to shed light on the impact of institutions on informality, defined as informal employment in three MENA countries; Jordan, Egypt and Tunisia. This will be done through an empirical analysis using the most recent available data, to examine the role of these institutions, along with other factors as determinants of informal employment in these three countries. Thus, this paper contributes to the literature on the institutional determinants of informal employment in the MENA region, where the literature in this aspect is very scarce.

The paper is organized as follows: the next two sections present a theoretical background and a review of the previous literature dealing with institutions and informality, focusing on informal employment. Sections 4 and 5 describe the methodology and the data used, respectively. Then, section 6 presents the main empirical results. Finally, section 7 provides the conclusion.

## Theoretical Background

One confusion that is related to the informal economy is the distinction between the informal sector, informal employment and employment in the informal sector. As defined by the 15th International Conference of Labour Statisticians ICLS in 1993 (ILO, 1993a, 1993b), the informal sector refers to the characteristics of the economic units in which the individual works. These include the legal status (individual unincorporated enterprises of the household sector); non-registration of the economic unit or of its employees; size (less than five permanent paid employees); and production for the market (Charmes, 2012). While the 17th ICLS (ILO, 2003) guidelines for defining informal employment refers to the nature of the worker's job, it includes all informal jobs carried out in both informal enterprises as well as formal enterprises. Informal employment is, therefore, usually defined by the absence of social protection (mainly health coverage) or the absence of a written contract (Charmes, 2012). Finally, employment in the informal economy, in addition to informal employment, includes formal employed individuals in the informal sector. Accordingly, the informal sector is one main part of informal employment where the remaining part is informal employment in the formal sector. To avoid inconsistencies, it is worth noting that this paper is interested in informal employment, which comprises all persons (wage employees, employers and self-employed) with no social protection or written contract in formal or informal enterprises.

In transitional and developing economies about half the labour force is in informal employment (Slonimczyk, 2014). Poor working conditions, in terms of the existence and/or enforcement of basic labour standards, as well as remuneration, often characterise informal employment. For example, informal workers are unprotected against negative shocks, such as ill-health. Moreover, informal employment could keep many workers out of the networks necessary to enable them to move higher up the global value chains, which their labour input so often serves (Bivens and Gammage, 2005). Informal employment could be a result of restrictions, which exclude some workers from formal positions. However, for certain groups there are scarce opportunities to enter the formal sector. In addition, several studies argue that labour markets are well integrated, thus implying that a large part of informal employment is deliberate or voluntary (Slonimczyk, 2014).

According to Chen et al. (1999), there are four macro theories that could explain the existence and persistence of informal employment. The first theory is the *lack of growth hypothesis*, which argues that economic growth will automatically lead to a growing share of formal employment, and that the constant or the declining share of formal employment is then considered a symptom of sluggish economic growth. The second theory is the *jobless growth* theory, which assumes that formalization not only requires a positive increase in economic growth, but also an increase that exceeds productivity growth, to absorb workers in the formal economy. The third theory is referred to as the *growth from below* theory or *small-enterprise sector hypothesis*. It asserts that small enterprises have managed to expand more rapidly than large enterprises, due to the freedom from regulation and the higher degree of flexibility they have. Finally, the last theory, known as the *period of adjustment* or *structural change* theory, argues that informal employment is a layover between formal employment in different sectors. This means that if there is a structural change in the economy, such as increasing the industrial share and decreasing the agricultural share, the adjustment period between the declining sector shedding workers and the expanding sector absorbing them is considered a period of informality.

Bivens and Gammage (2005) employed these diverse theories to construct categorisation of contexts and processes through which different episodes of informalisation can be placed. Below, we present these categories, which are not meant to serve as macro theories of informalisation, but they represent frameworks for understanding how (in)formalisation could proceed in any country:

- **The Dualist:** Here informal employment is considered as a feature of pre-capitalist societies, which could exist alongside capitalist production for long periods of time. But, as the economies modernise and grow, informal employment will deteriorate and ultimately disappear.
- **The Structuralist:** In this category, informal employment is regarded as a result of a capitalist process that plans to keep labour costs low. The main policy issues in this phase concern increasing the informal workers' bargaining power through expansionary macroeconomic policies, unionisation, enforcement of labour standards, and labour market regulation.
- **The Legalist:** Informal employment in this case is not essentially an indication of poor quality of employment, but a result of the striving of entrepreneurs to avoid official corruption and/or burdensome regulation in the formal sector. The related policy issues are related to reforming tax and transfer system, as well as supporting and enforcing more transparent property rights.

Several researchers<sup>1</sup> argue that entry into the informal sector or employment is based on a cost/benefit analysis. This cost/benefit analysis perspective assumes that the individual makes an informed decision to be informal, such that an individual would choose to go into the informal sector or employment if the expected benefits exceed the net benefit of being formal. These expected benefits involve, in addition to expected income, tax avoidance, autonomy, and more flexibility in terms of working hours. As for the costs of informality, they include inability to access public infrastructure, restricted access to formal financial markets, long working hours, lack of formal contracts and social protection, and uncertainty of future earnings (Jütting et al., 2008). On the other hand, the empowerment approach hypothesises that governance failure or poor institutional quality is the key reason behind the exclusion - especially for the poor - from the structured economy (Perry et al., 2007). The differentiated access to the formal labour market is a result of initial capabilities, unequal access to social and judicial services, as well as unequal economic opportunities. Hence, this approach indicates that engagement in the formal sector or employment is not voluntary and depends on the disparities between the agents from the formal and informal sectors (Traoré, 2013).

Hence, theoretically, various determinants - on both micro and macro levels - of the size of the informal employment are identified. On the micro level, determinants of informal employment include individual socio-economic characteristics (e.g. age, sex, education, marital status, family background, worker and employer characteristics, etc.), firm characteristics (e.g. firm size, age, productivity, etc.), and the cost of being formally employed (Hazans, 2011; Ceni González, 2014).

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<sup>1</sup> e.g. Maloney (2004), DCED (2008), Oviedo et al. (2009), Andrews et al. (2011).

On the other hand, the macro determinants of informality include economic characteristics, such as level of economic development, quality of public goods and services, income distribution, poverty, inequality, financial constraints, fiscal burden in general, and the tax wedge on labour in particular, government policies, presence of considerable population groups, which are exposed to social exclusion or labour market discrimination. Besides, institutions were identified as playing a vital role in choices among the formal and informal sectors of employment. Among these, institutions are believed to affect the size of informal sector and informal employment, business environment (e.g. regulations associated with starting, running, and closing a formal business: entry, trade, financial markets, bankruptcy, and contract enforcement) (Hazans, 2011; Jonasson, 2011; Traoré, 2013) and labour market institutions (such as: strictness of employment protection legislation, presence and level of minimum wage, the influence of trade unions, the level of spending on active labour market measures, generosity of unemployment and social assistance benefits available to the unemployed and discouraged workers) (Hazans, 2011).

## Literature Review

The available empirical literature examined individual socio-economic characteristics, business environment, institutional context and government policies as the main determinants of informality (Torgler and Schneider, 2007). Many studies confirmed the impact of **Individual characteristics** and **family background** including sex, age, education, marital status, household size and parental occupation on informality (Rees and Shah 1986; El Aynaoui 1997; Zerbo 2006; Traoré 2013; Rodina et al. 2012; Kuepie, and Roubaud, 2009 and Nguetse 2009). Other studies pointed to the role of external factors to individuals, such as place of **residence** (rural or urban) and the **economic environment**, mainly physical and financial endowment, liquidity constraints, inflation, unemployment rate and business cycle, and highlighted the importance of the size of the public sector and the size of the agriculture sector as main determinants of informality (Loayza and Rigolini 2011; Fiess, Fugazza and Maloney 2010; Traoré 2013; Ogbuabor and Malaolu 2013 and Bosch et al. 2007).

**Institutions** were identified as playing an important role in choices amongst the formal and informal sectors. Most of the studies in this regard focused on formal institutions. Moreover, the majority of those studies investigated the role of institution with regard to the informal sector and not informal employment (Hanousek and Palda 2003; Oviedo 2009; Schneider and Eenste 2000; Djankov et al. 2002; Johnson et al. 2000; Friedman et al 2000; Loayza 1994; Loayza et al 2005; Moscoso Boedo and senkal 2014; Ihrig and Moe 2004; Kanbur 2014; Williams et al. 2016; Schneider and Klinglmair 2004 and Schneider et al 2010)<sup>2</sup>.

Those studies confirmed a positive effect on informality of: an excessive labour market and intellectual property rights regulation, high rate of taxation, inefficient social security system and business environment and governance failure (Perry et al. 2007; Maloney 2004; Oviedo 2009; DCED 2009; Andrews and al. 2011; Jütting and al, 2008; Schneider 2007; Oduh et al 2008; Ogbuabor and Malaolu 2013 and Canelas 2014). Few studies considered the role of informal institutions reflecting social norms. Tax morality is the main variable used in this regard. Those studies confirmed that how the public perceives acceptability of tax evasion is a

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<sup>2</sup> See Williams et al (2016) for a detailed survey



key factor that affects the size of the informal economy (Hanousek and Palda, 2003; Torgler 2010; Torgler and Schneider 2009 and Hazans 2011).

Studies including formal **institutions**, as determinants of informality, are relatively rare. Some studies addressed the issue in a cross-country manner. Fialova and Schneider (2011) examine the effect of labour market institutions, active and passive labour market policies, labour taxation, trade union density, strictness of employment protection legislation and the minimum wage setting— on informality, as measured by both the informal sector and the informal employment in European countries. Results showed that the strength of the impact depends on the type of regulation. Strictness of employment protection legislation was found to be the only institution that unambiguously increases the shadow economy and informal employment. Gonzalez (2014) analyses how informality responds to the quality of labour enforcement and the bundle of benefits received by formal workers in five Latin America countries; Argentina, Brazil, Colombia, Peru and Uruguay. The results confirmed that differences in the quality of government enforcement and the quality of benefits enforced the agents.

Other studies focused on single countries. Almeida and Carneiro (2012) examined the impact of labour inspections on labour market outcomes in Brazil. Results show that a higher labour inspection increases formal employment and decreases informal employment. Dougherty and Escobar (2013) studied the determinants of informal employment in Mexican states. The results across states imply that differences in economic development, the incidence of micro-enterprises, labour skills, cost of starting a business, restrictions on foreign investment, and corruption levels all explain differences in informal employment. Canelas (2014) investigates the impact of a change in the minimum wage on formality and informality rates, and the level of wages in Ecuador. Results suggest that the minimum wage has almost no effect on employment and wages. This was explained by the high level of non-compliance. Kugler (2004) tackled the impact of job security, as measured by a substantial reduction in dismissal costs in Colombia within the Labour Market Reform of 1990. Results confirmed that job security led to a decrease in compliance with labour regulations and, hence, increased informal employment.

Studies incorporating informal institutions are even more rare. To our best knowledge, two studies exist in that context. Both use tax morality as a proxy of informal institutions. Hazans (2011) studies the relationship between institutional and other macro determinants and informal employment in European countries. As expected, results confirmed that informal employment decreases the higher the quality of business environment, the higher the quality of public services, the greater the tax morality, the stricter the employment protection legislation and the higher tax wedge on labour. While it increases with minimum-to-average wage ratio and with union density. Williams et al (2016) investigate the determinants of informal employment in 300 informal micro-enterprises in the city of Lahore in Pakistan. The findings show that main drivers of the informality level are individual and firm characteristics, rather than the broader formal and informal institutional compliance environment.

Studies concerned with determinants of informality in the MENA region follow the same pattern as the international literature, with an even larger gap in studies including institutions as determinants of informal employment. Most of the studies for the region investigated individual, socio-economic and parental background as determinates of informal employment (Harati 2013; Nazier and Ramadan 2015; Abd El-Fattah 2012; Rodman 2007; Angel-Urdinola and Tanabe 2012; Angel-Urdinola et al 2009; Elbadawi and Loayza 2008; Loayza, and Wada 2010; Looney 2006 and Schneider 2004).

To the best of our knowledge, only three studies examined the impact of institutions on informal employment in the region, none of which included informal institutions. Wahba (2009) studied the effect of introducing the more flexible labour law of 2003 on formal employment in the private non-agricultural sector in Egypt. Results showed that the law had a positive impact on those who were informally employed in 1998 and no significant impact on new entrants.

Wahba and Assaad (2016) examined the effects of the same law, however over a longer period, to examine the long-term effects and the sustainability of those effects, using a richer data set. The findings confirmed the results of Wahba (2009); the introduction of the labour law had a positive impact on the prevalence of informal employment. Thus, less rigid labour market regulations increase formal employment.

Finally, Souag and Assaad (2017) examined the effect of the Action Plan for Promoting Employment and Fighting Unemployment, adopted by the Algerian government in 2008 on the informal sector and employment. Results show that the effect of the action plan differs according to the size of the establishments. More precisely, it has a negative impact on informal employment of employees working in establishments of 10 workers and more, but no significant effect for those working in establishments of 5 to 9 workers.

Accordingly, most contributions in the literature in general, and for the MENA region specifically, focused on determinants of the informal sector and not specifically on informal employment. Moreover, institutions as determinants of informal employment are understudied in the region, not to mention that no study exists on informal institutions in this regard. With regards to this strand of the literature, our contributions include: studying determinants of informality as measured by informal employment, not the informal sector in three MENA countries; Jordan, Egypt and Tunisia; including the institution as factors that may affect informal employment.

## Methodology

Following the literature, we examine the impact of individual socio-economic characteristics, as well as the institutional context on the likelihood of being informally employed. This is later defined as being employed without contract and without social insurance. Hence, our variable of interest “*informally employed*” is a binary variable that takes value 1 if the employed individual has neither a contract nor social insurance, while it takes value 0 if any of those is verified. So, the following logit model will be estimated.

$$\text{logit}(P(\text{informal}_{ic} = 1)) = \log\left(\frac{P(\text{informal}_{ic}=1)}{1-P(\text{informal}_{ic}=1)}\right) = X\beta \quad (1)$$

Where  $P(\text{informal}_{ic} = 1)$  is our variable of interest; it is the probability that the individual  $i$ , living in country  $C$ , is informally employed. Our regressors  $X$  include individual characteristics, the values in the community where the individual lives, in addition to the institutional environment of the country. And  $\beta$ s are the parameters to be estimated.

More precisely, individual characteristics include the individual’s age, sex, marital status and education level. And to consider the role played by the individual’s background, the model includes the parents’ education levels. Additionally, we include a variable called “*values*” that reflects values, concerning bribery and cheating, of community where the individual  $i$  lives.

This is a composite variable with a calculation based on three variables from the World Value Survey. The variable measures the share of individuals, at the governorate/city level, who do not believe in cheating on taxes, paying a bribe or claiming government benefits to which they are not entitled.

For the institutional context, we include two variables at the country level, from the World Governance Indicators (WGI); *rule of law* and *control of corruption*. The rule of law variable captures the perception of agents concerning confidence and obedience by the rules of society, especially the quality of contract enforcement, property rights, the police, and the courts and the likelihood of crime and violence. While the corruption variable captures the perception of the extent to which public power is exercised for private gains and is a capture of the State by elites and private interests (Kufmann et al, 2010). Given the high correlation between the two variables, two versions of the model will be estimated. The first one includes the values variable and the rule of law, in addition to the individual characteristics, while the second one includes the control of corruption, instead of the rule of law, to capture the effect of institutions.

## Data

The data used in this paper is drawn from three data sources. First, the data for informality, individual and household characteristics come from the labour Market Panel Survey (LMPS) for Jordan (JLMPS, 2010), Egypt (ELMPS, 2012) and Tunisia (TLMPS, 2014). Second, data for institutions comes from the World Governance Indicators (WGI) and finally the “*values*” variable comes from the World Value Survey (WVS) for each country<sup>3</sup>. Our sample of interest includes 22,026 individuals where 50% are informally employed. Among the 22,026, there are 5,750 individuals in Jordan, 13,941 individuals in Egypt and 2335 in Tunisia. In Jordan and Tunisia, more than 50% of the observations are formally employed. While, in Egypt, only 42% are formally employed (See Table 1)

Table 1: Distribution of the sample according to Countries and informality (%)

	Formally Employed	Informally Employed	Total
Jordan	67	33	5,750
Egypt	42	58	13,941
Tunisia	52	48	2,335

Source: Calculated by the authors using JLMPS (2010), ELMPS (2012) and TLMPS (2014).

In all three countries, men represent more than 70% of the informally employed<sup>3</sup>. For the education level; table 3 shows that in Jordan and Tunisia, 50% and 41% of the informally employed have basic education. While in Egypt, only 21% of the informally employed have basic education, while 34% have secondary education. Additionally, we found that in Egypt and

<sup>3</sup> As it is believed that institutions don't change frequently, and it take years for change; the choice of the survey year is based on the most recent available survey for each country before the LMPS survey year. For the WVS, wave 5 is used for Jordan (2007) and Egypt (2008) while wave 6 is used for Tunisia (2014).



Tunisia, around 30% of the informal employees are illiterate, while this share is only 6% in Jordan. In Egypt and Tunisia, no individuals with postgraduate studies work informally, while in Tunisia, only 1% of the informally employed have post graduate education level<sup>4</sup> (See Table 3)

Table 2: Distribution of the informal employees according to sex in the three countries (%)

	Male	Female
Jordan	91	9
Tunisia	77	23
Egypt	86	14

Source: Calculated by the authors using JLMPS (2010), ELMPS (2012) and TLMPS (2014).

Table 3: Distribution of the informal employees according to their education level in the three countries (%)

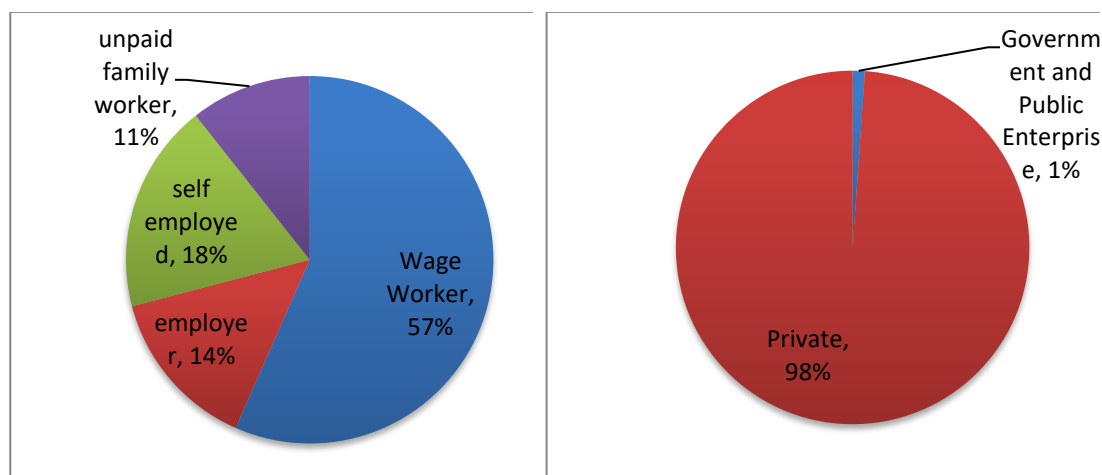
	Jordan	Egypt	Tunisia
Illiterate	6	30	28
Read & Write	13	5	23
Basic Education	50	21	41
Secondary Education	17	34	6
Post-Secondary	7	2	1
University	6	8	1
Post-Graduate	1	0	0

Source: Calculated by the authors using JLMPS (2010), ELMPS (2012) and TLMPS (2014).

Our analysis focuses on informally employed individuals, whatever their employment status and their economic sector. Figure 1: Distribution of the informally employed according to their employment status and economic sector shows that more than 50% of the informally employed are wage workers. These wageworkers may be informally employed in formal or informal firms. While, 18% of the informally employed are self-employed, 14% are employers and 11% are unpaid family workers. Concerning economic activity, almost all of them are informally employed in the private sector.

<sup>4</sup> It was found from the data that most of those with post secondary education, or higher, are wage workers.

Figure 1: Distribution of the informally employed according to their employment status and economic sector



Source: Calculated by the authors using JLMPS (2010), ELMPS (2012) and TLMPS (2014).

The “*values*” variable reflects the share of individuals who do not countenance cheating on taxes, paying a bribe or claiming government benefits to which they are not entitled. The share is calculated at the governorate/city level. On average, this share is more than 90% in all three countries. The lowest value is observed in Luxor in Egypt, with only 70% of the observations not countenancing cheating on taxes, paying a bribe or claiming government benefits to which they are not entitled. The highest value is observed in Aljoon, Aqaba, Balqa in Jordan, Damietta and Port Said in Egypt and Nabeul in Tunisia (See Table 4).

Table 4: Summary Statistics of the share of individuals who do not countenance cheating on taxes, paying a bribe or claiming government benefits to which they are not entitled (%).

	Mean	Std. Dev.	Min	Max
Jordan	96.93	1.83	93.85	100
Tunisia	91.51	6.78	80.68	100
Egypt	91.59	8.26	70.00	100

Source: Calculated by the authors using JLMPS (2010), ELMPS (2012) and TLMPS (2014).

Finally, for the institutions variables, we use the rule of law and the control of corruption at the country level. Table 5 shows that Egypt ranked the lowest concerning the rule of law and the control of corruption. Tunisia and Jordan have the same level of control on the corruption index, while Jordan has the lowest level when it comes to rule of law. This may explain the low share of informally employed in Jordan.

Table 5: Institutional Variables used from WGI

	Egypt	Jordan	Tunisia
Rule of Law	-0.47	0.19	-0.11
Control of Corruption	-0.60	0.04	-0.04

Source: Calculated by the authors using WBES.

## Estimated Results

Two versions of the model (Equation 1) were estimated. The first one includes the individual characteristics, the values of the governorate where the individual lives and the rule of law. The second one includes the corruption variable, instead of the rule of law. The estimated results are presented in Table 6.

Our results show that age has a non-linear impact (U-shape) on the logistical odds of being informally employed. And being a female decreases the logistical odds of being informally employed. As expected, education plays a significant role in informal employment. An individual who reads and writes or has any education level, is less likely to be informally employed, compared to an illiterate individual. This was confirmed from the raw data analysis, since less than 10% of the highly educated individuals, in the three countries, are informally employed. This shows that individuals who invest in education are less likely to be informally employed. Additionally, individuals whose fathers read and write, or have any educational level, are less likely to work informally, compared to individuals whose fathers are illiterate. For mothers' education, Table 6 shows that only mothers with basic education, or post-secondary education, have a significantly negative impact on the logistical odds of being informally employed.

Similarly, the “*values*” variable has a negative significant impact on the logistical odds of being informally employed. In other words, an individual living in communities where an important share of individuals do not countenance cheating or accepting bribes or receiving benefits that they do not deserve from the governments, is less likely to be informally employed. Hence, the norms and values related to an individual's respect of rules and regulations matter.

Finally, as found in the literature, institutions play an important role in choices among the formal and informal sectors. In both versions of the model, the two institutions variables have a significant negative effect on the logistical odds of being informally employed. In countries where the rule of law index and the control of corruption index are higher, it is more likely that individuals are employed without contract and without social insurance. This has also been confirmed in our descriptive statistics; Egypt which ranked as the lowest among the three countries for these two indicators, has more informally employed individuals. This may explain that informality is considered as a way of escaping the complexity of institutions within the labour market. This result may be in line with the “Legalist” approach that presents

informal employment as a result of the striving of entrepreneurs to avoid official corruption and/or burdensome regulation in the formal sector.

Table 6: Estimated Results of the two versions of the Logit model

	<b>(Model 1)</b>	<b>(Model 2)</b>
Age	-0.167*** (0.0639)	-0.161** (0.0650)
Age Squared	0.00152*** (0.000452)	0.00147*** (0.000460)
Female	-0.517*** (0.124)	-0.492*** (0.146)
<b>Marital Status (Reference: Single)</b>		
Married	-0.152 (0.227)	-0.179 (0.218)
Nevermarried	0.150* (0.0818)	0.103 (0.118)
<b>Education Level (Reference: Illiterate)</b>		
Read & Write	-0.947*** (0.176)	-0.909*** (0.160)
Basic Education	-1.434*** (0.155)	-1.435*** (0.152)
Secondary Education	-1.979*** (0.346)	-2.009*** (0.332)
Post-Secondary Education	-2.539*** (0.418)	-2.575*** (0.413)
University/Post Graduate	-3.113*** (0.312)	-3.149*** (0.295)
<b>Father's Education (Reference: Illiterate)</b>		
Reads and writes	-0.311** (0.130)	-0.355*** (0.124)
Basic Education	-0.547*** (0.134)	-0.514*** (0.150)
Secondary Education	-0.546*** (0.192)	-0.550*** (0.187)
Post-secondary Education	-0.480** (0.245)	-0.505** (0.247)
University/ Post Graduate	-0.615** (0.290)	-0.631** (0.280)
<b>Mother's Education (Reference: Illiterate)</b>		
Reads and writes	-0.0824 (0.158)	-0.110 (0.163)
Basic Education	-0.226*** (0.0353)	-0.223*** (0.0359)
Secondary Education	-0.0908 (0.272)	-0.0962 (0.272)

Post-secondary Education	-0.383*** (0.0959)	-0.417*** (0.0963)
University/ Post Graduate	-0.279 (0.219)	-0.273 (0.222)
Values	-0.006*** (0.002)	-0.009*** (0.003)
Rule of Law	-1.681*** (0.298)	
Corruption		-1.627*** (0.158)
Constant	6.190*** (1.992)	6.148*** (1.893)
Observations	22,026	22,026

## Concluding Remarks

This paper attempts to study the impact of individual characteristics and the institutional environment on the decision of being informally employed in three Arab countries; Jordan, Egypt and Tunisia. Informality is defined as being employed and with neither a contract nor social security.

Our results show that education matters at the individual level. The higher the level of the individual's education and his parents' education, the lower the likelihood he or she will decide to work informally. This result is in line with the argument that the entry into the informal sector is based on a cost/benefit analysis and that the individual makes an informed decision to enter the informal sector, if the expected benefits exceed the net benefit of participating in the formal sector.

Additionally, values and norms are found to be a significant factor in the decision of being informally employed, as living in a community where refusing bribe and cheating is a common value, decreases the likelihood of being informally employed. Finally, our results confirm that institutions matter; the higher the perception that the laws and courts are inefficient, the greater the probability of being informally employed. Similarly, the higher the perception of corruption and that public power is exercised for private gains, the greater the share of informality. This explains the high share of informally employed individuals among Egyptians, as Egypt ranks as the lowest among the three countries concerning the two indices of rule of law and corruption.

This paper adds to the literature on the institutional determinants of informal employment in the MENA region. Regulations and laws matter and may affect the decision about being informally employed. But values and beliefs also matter when deciding to work informally and not to obey or respect formal laws and regulations. Hence, policy makers should consider both when decisions are taken. It is worth noting that amending institutional variables with those reflecting informal institutions would have made a valuable contribution, however this could not be done due to the lack of data measuring informal institutions that would affect informal employment in the three studied MENA countries.

## References

1. Abd El-Fattah M. A., (2012), "A Surveyed-Based Exploration of Satisfaction and Profitability in Egypt's Informal Sector," Egyptian Center for Economic Studies Working Paper No.169, ECES, May.
2. Almeida, R., & Carneiro, P. (2012). Enforcement of labor regulation and informality. *American Economic Journal: Applied Economics*, 4(3), 64-89.
3. Andrews, D., Caldera, S. A., & Johansson, A. (2011). Towards a better understanding of the informal economy. *Economics department*, working papers no.873, OECD.
4. Ange Urdinola, D., Reis, J.G. and Quijada, C. (2009) Informality in Turkey: Size, Trends, Determinants and Consequences. Mimeo. World Bank, Washington D.C.
5. Angel-Urdinola, D. F., & Tanabe, K. (2012). Micro-determinants of informal employment in the Middle East and North Africa region. Discussion Paper 1201. *Social Protection and Labor Policy and Technical Notes*. World Bank.
6. Badawi A., C. Harders, A. Ezzat, H. Nazier, R. Ramadan, N. Elshyab, S. Sandri, S. Ben Slimane, M. Ben Tahar, Z. Aboueddahab & B. Bensalem (2017) Institutions and Labour Market in the Southern Mediterranean Countries. A survey of Egypt, Jordan, Morocco and Tunisia. EMNES Studies No.1.
7. Bernabè, S. (2002). Informal Employment in Countries in Transition: A conceptual framework. LSE STICERD Research Paper No. CASE 056, Webpage: <http://sticerd.lse.ac.uk/dps/case/cp/CASEpaper56.pdf>
8. Bivens, J., & Gammage, S. (2005). Will better workers lead to better jobs in the developing world?. *Good Jobs, Bad Jobs, No Jobs*, 1-30.
9. Bosch, M., Goni, E., and Maloney, W., (2007), "The Determinants of Rising Informality in Brazil: Evidence from Gross Worker Flows," Policy Research Working Paper no. 4375, World Bank, Washington DC.
10. Canelas, C. (2014). *Minimum Wage and informality in Ecuador* (No. 2014/006). WIDER Working Paper.
11. Ceni Gonzalez, R. (2014). Informality and government enforcement in Latin America. *Serie Documentos de Trabajo; 21/14*.
12. Charmes, J., 2012. "The Informal Economy Worldwide: Trends and Characteristics". *The Journal of Applied Economic Research* 6 : 2 (2012): 103–132 SAGE Publications Los Angeles/London/New Delhi/Singapore/Washington DC DOI: 10.1177/097380101200600202
13. Chen, M., Sebstad, J., & O'Connell, L. (1999). Counting the invisible workforce: the case of homebased workers. *World development*, 27(3), 603-610.
14. Djankov, S., La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (2002). The regulation of entry. *The quarterly Journal of economics*, 117(1), 1-37



15. Donor Committee for Enterprise Development (2008). *Supporting Business Environment Reforms: Practical Guidance for Development Agencies*. Report from Donor Committee for Enterprise Development, August, Webpage: <https://www.enterprise-development.org/wp-content/uploads/DonorGuidanceEnglish.pdf>.
16. Dougherty, S., & Escobar, O. (2013). The determinants of informality in Mexico's states.
17. Dreher, A., & Schneider, F. (2010). Corruption and the shadow economy: an empirical analysis. *Public Choice*, 144(1), 215-238.
18. ElAynaoui J., (1997), Participation, Choix Occupationnel et Gains Sur un Marché du Travail Segmenté : une Analyse Appliquée au Cas du Maroc, Centre d'économie du développement, Université Montesquieu- Bordeaux IV-France.
19. Elbadawi, I., & Loayza, N. (2008). Informality, employment and economic development in the Arab world. *Journal of Development and Economic Policies*, 10(2), 25-75
20. Feld, L. P., & Schneider, F. (2010). Survey on the shadow economy and undeclared earnings in OECD countries. *German Economic Review*, 11(2), 109-149.
21. Fialová, K., & Schneider, O. (2011). Labor institutions and their impact on shadow economies in Europe. Policy Research Working Paper 5913, World Bank.
22. Fiess, N., Fugazza, M., and Maloney, W., (2010), "Informal Self-employment and Macroeconomic Fluctuations," *Journal of Development Economics*, 91, 211–226.
23. Friedman, E., Johnson, S., Kaufmann, D., & Zoido-Lobaton, P. (2000). Dodging the grabbing hand: the determinants of unofficial activity in 69 countries. *Journal of public economics*, 76(3), 459-493.
24. Hanousek, J., & Palda, F. (2003). Why people evade taxes in the Czech and Slovak Republics: A tale of twins. *The Informal Economy in the EU Accession Countries: Size, Scope, Trends and Challenges to the Process of EU Enlargement*. Sofia: CSD, 139-174..
25. Harati, R. (2013). Heterogeneity in the Egyptian informal labour market: choice or obligation?. *Revue d'économie politique*, 123(4), 623-639.
26. Hazans, M. (2011). What explains prevalence of informal employment in European countries: the role of labor institutions, governance, immigrants, and growth. Policy Research Working Paper 5917, World Bank.
27. Johnson, S., Kaufmann, D., McMillan, J., & Woodruff, C. (2000). Why do firms hide? Bribes and unofficial activity after communism. *Journal of Public Economics*, 76(3), 495-520.
28. Jonasson, E. (2011). Informal employment and the role of regional governance. *Review of development economics*, 15(3), 429-441.
29. Jütting, J., Parlevliet, J., & Xenogiani, T. (2008). Informal Employment Reloaded. *IDS Bulletin*, 39(2), 28-36.

30. Kanbur, R. (2014). Informality: Causes, consequences and policy responses. *Review of Development Economics*.
31. Kaufmann, D., Kray, A. and Mastruzzi, M. 2010. "The World Wide Governance Indicators: Methodology and Analytical Issues". World Bank Policy Research Working Paper 5430
32. Kuepie, N., and Roubaud, (2009), "Education and earnings in urban West Africa," *Journal of Comparative Economics*, Vol. 37, no 3, pp. 491–515.
33. Kugler, A. D. (2004). The effect of job security regulations on labor market flexibility. Evidence from the Colombian Labor Market Reform. In *Law and Employment: Lessons from Latin America and the Caribbean* (pp. 183-228). University of Chicago Press.
34. Loayza, N. V. (1994). *Labor regulations and the informal economy*. Policy Research Working Paper No. 1335. The World Bank.
35. Loayza, N., & Wada, T. (2010). Informal labor in the Middle East and North Africa: Basic measures and determinants. Washington, DC: World Bank.
36. Loayza, N., Oviedo, A. M., & Servén, L. (2005). The impact of regulation on growth and informality cross-country evidence. Policy Research Working Paper No. 3623. The World Bank.
37. Loayza, N. V., and Rigolini, J., (2011). Informal Employment: Safety Net or Growth Engine? *World Development* Vol. 39, No. 9, pp. 1503–1515.
38. Looney, R. (2006). Economic Consequences of Conflict: The Rise of Iraq's Informal Economy. *Journal of Economic Issues*, Vol. XL(4).
39. Maloney, W.F., (2004). Informality Revisited, *World Development*, 32(7), 1159-1178.
40. Moscoso Boedo, H. J., & Šenkál, A. (2014). Misallocation, informality, and human capital: Understanding the role of institutions. *Journal of Economic Dynamics and Control*, 42(C), 122-142.
41. Nazier, H., & Ramadan, R. (2015). Informality and Poverty: A Causality Dilemma with Application to Egypt. *Advances in Management and Applied Economics*, 5(4), 31.
42. Nguetse, T. (2009), Estimating the returns to education in Cameroon Informal sector. Cameroon Ministry of Economy, Planning and Regional Development (MINEPAT, Yaoundé).
43. Odera, L. C. (2013). The Role of Trust as an Informal Institution in the Informal Sector in Africa. *Africa Development*, 38(3-4), 121-146.
44. Oduh, Moses et al., (2008), "Measurement and Explanation of Informal Sector of the Nigerian Economy," AIAE Research Paper 3, pp. 1-64.

45. Ogbuabor, J. E. and Malaolu V. A., (2013), "Size and Causes of the Informal Sector of the Nigerian Economy: Evidence from Error Correction Mimic Model," *Journal of Economics and Sustainable Development*, Vol.4.
46. Organization for Economic Co-operation and Development (OECD) (2009), *Is Informal Normal? Towards More and Better Jobs in Developing Countries*, Paris, OECD.
47. Oviedo, A. M. (2009). *Economic Informality: Causes, Costs, and Policies: A Literature Survey of International Experience. Background Paper prepared for Country Economic Memorandum (CEM)–Informality: Causes, Consequences, Policies.*
48. Oviedo, A. M., Thomas, M. R., & Karakurum-zdemir, K. (2009). *Economic Informality: Causes, Costs, and Policies A Literature Survey*. World Bank Publications. Washington D.C.: The World Bank.
49. Perry, G., W. Maloney, O. Arias, P. Fajnzylber, A. Mason and J. Saavedra-Chanduvi (2007). *Informality: Exit and Exclusion*. Washington D.C.: The World Bank.
50. Rees, H., and Shah, A., (1986), "An empirical analysis of self-employment in the UK," *Journal of Applied Econometrics*, 1, pp.101-108.
51. Rodina D. L., McNeill, K., Vite-Leon N., and Heymann, J., (2012), "Determinants of informal employment among working mothers in Mexico," *Community, Work & Family*, Vol. 15, no. 1, February, 85-99.
52. Rodman, S. (2007). *God Jobs, Bad Jobs, and Economic Performance: A View from the Middle East and North Africa Region, Employment and Shared Growth*, edited by Pierella Pace and Pieter Serneels. World Bank, Washington D.C.
53. Rodman, S., (2007), *God Jobs, Bad Jobs, and Economic Performance: A View from the Middle East and North Africa Region, Employment and Shared Growth*, edited by Pierella Pace and Pieter Serneels, World Bank, Washington D.C.
54. Roubaud, F., & Sérurier, M. (1991). *Economie non-enregistrée par la statistique et secteur informel dans les pays en développement*. Institut National de la Statistique et des Etudes Economiques.
55. Schneider, F. (2004). *The Size of the Shadow Economies of 145 Countries all over the World: First Results over the Period 1999 to 2003*, IZA DP No. 1431. Bonn.
56. Schneider, F., & Klinglmaier, R. (2004). *Shadow economies around the world: what do we know?* IZA DP No. 1043. Institute for the Study of Labor.
57. Schneider, F., & Torgler, B. (2007). *Shadow economy, tax morale, governance and institutional quality: a panel analysis* (No. 0701). Working Paper, Department of Economics, Johannes Kepler University of Linz.
58. Schneider, F., (2007), *Reducing the Shadow Economy in Germany: A Blessing or a Curse?*, Discussion Paper, Department of Economics, University of Linz, Linz.
59. Schneider, F., Buehn, A., & Montenegro, C. E. (2010). *Shadow economies all over the world. World Bank Policy Research Working Paper, 5356*. World Bank.

60. Shneider, F., & Enste, D. H. (2000). Shadow economies: size, causes and consequences. *Journal of Economic Literature*, 38(1), 77-114.
61. Slonimczyk, F. (2014). Informal employment in emerging and transition economies. *IZA World of Labor*, 2014: 59, Webpage: <https://wol.iza.org/uploads/articles/59/pdfs/informal-employment-in-emerging-and-transition-economies.pdf>.
62. Souag, A., & Assaad, R.(2017). “The Impact of the Action Plan for Promoting Employment and Combating Unemployment on Employment Informality in Algeria”. IZA Discussion Paper No. 10966.
63. Torgler, B. (2011). Tax morale and compliance: review of evidence and case studies for Europe. *World Bank Policy Research Working Paper*, 5922. World Bank.
64. Torgler, B., & Schneider, F. (2009). The impact of tax morale and institutional quality on the shadow economy. *Journal of Economic Psychology*, 30(2), 228-245.
65. Traoré, J. A. (2013). Revisiting the determinants of informal sector in Burkina Faso. *Economic Research Guardian*, 3(2), 111.
66. United Nations (1996). *Informal Sector Development in Africa*. New York: The United Nations.
67. Wahba, J.(2009) The Impact of Labor Market Reforms on Informality in Egypt. The Population Council, Cairo.
68. Wahba, J., & Assaad, R. (2016). Flexible labor regulations and informality in Egypt. *Review of Development Economics*.
69. Williams, C. C., Shahid, M. S., & Martínez, A. (2016). Determinants of the level of informality of informal micro-enterprises: Some evidence from the city of Lahore, Pakistan. *World Development*, 84, 312-325.
70. Zerbo, A. (2006), “Marché du travail et pauvreté en Afrique Subsaharienne : un modèle d’analyse,” Document de Travail n°129, Centre d’économie du développement, Institut fédératif de recherche sur les dynamiques économiques, Université Montesquieu Bordeaux IV.

## Data Sources

1. Economic Research Forum-Open Access Micro Data Initiative (OAMDI): <http://erf.org.eg/oamdi/>
2. World Governance Indicators: <http://info.worldbank.org/governance/wgi/index.aspx#home>
3. World Value Surveys Wave 5 and Wave 6: <http://www.worldvaluessurvey.org/wvs.jsp>



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EMNES funding: European Commission and EMNES partners.

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The EMNES documents are produced with the financial assistance of the European Union within the context of the EU project "Support to economic research, studies and dialogue of the Euro-Mediterranean Partnership" under contract number ENPI/2014/354-488. The contents of EMNES documents are the sole responsibility of the authors and can, under no circumstances, be regarded as reflecting the position of the European Union.



Financially supported by the European Commission