Non-compliant behaviors and institutions in Algeria (comparison between global and local institutional overview)

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Abstract :

The informal economy is a social and economic phenomenon that one cannot ignore; especially with its effects on the official economy. Consequently, policy makers and academicians have made concerted efforts to estimate its size, and to determine its main causes.
The emphasis of this paper will be on the impact of both formal and informal institutions on economic outcomes, by conducting a field survey in the economic sector based on the economic enterprises in different regions of the west of Algeria. Our results basing on the PLS-SEM modeling show that trust in public institutions and the persistence of the informal institutions including the rules of old regime, in addition to the adjustment to formal institutions that affect the economic agents to go underground.

Keywords: New institutional economics, Informal economy, governance quality, indexes.
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Introduction :

The Informal economy is a social and economic phenomenon that one cannot ignore; especially with its effects on the official economy. Consequently, policy makers and academicians have put their efforts into estimating its size, and into determining its main causes.

However, there is a consensus among the policy makers that a better macroeconomic policy elaboration and its true implementation are subject to the proper management of the associated issues of the informal economy with suitable policy measures. (*Ahmed Gulzar, Novaira Junaid, 2010)*

In this paper; we will attempt to analyze its main causes and its effects on economic outcomes. First of all*; in section one*; we will present a brief literature review on the link between institutions and informality as a form of non compliance; besides highlighting the main driver forces of informality.

As policymakers and researchers focus more on the question of the impact of governance on economic development, they have required measures of the quality of governance to set policy and to conduct analyses. In this perspective, we will used those institutional measures of different institutional institutes in order to help us in analyzing and determining the main drivers of non compliance in Algeria and thus in the construction of our study institutional indices, where our main aim is to compare their findings with our field survey results to seek for other implicit causes of non compliant behaviors in Algeria.

In section two, we will present and describe our field survey in the economic sector based on the economic enterprises in different regions of the west of Algeria. Analysis and results of this field survey will be further discussed.

Finally; *in section three*; we will give a discussion basing on the comparison between our survey indices and the other institutional indices of the institutional institutes, in order to determine the main institutional areas that affect the existence of the informal practices among the economic agents in Algeria.

1. Literature review on non-compliance and institutions

1.1. Defining non-compliant behavior

As it is agreed by many researchers in this field, the informal economy (IE) is a pervasive phenomenon in developing countries and developed countries as well. As a result, several attempts to measure its size are undertaken in different countries in order to determine its main causes and to understand its mechanisms.

The IE is therefore very heterogeneous and includes both legal activities; such as unreported income that would normally be reported in GDP and illegal activities including smuggling, fraud, and money laundering, in addition to the unproductive activities; such as: small-scale commercial activities, undeclared incomes to tax authorities.

For Smith (1994)[2], the IE is defined as "*market-based production of goods and services, whether legal or illegal, which escapes detection in the official estimates of GDP*". According to Feige (1989); the IE is generally defined as all value added activities that are not registered in the public authorities, in order to reduce the costs of production or seek to survive and to meet their own needs.

[2] Smith (1994) cited in Shneider and Enste (2000).

There are other definitions that focused on the legal status of the economic activities, where the IE consists of all activities that did not comply with the rules of law and other burdensome government regulations that hampered the economic agents to run their businesses formally. And because the economic agent is rational, he chooses whether to be legal or not basing on the costs and benefits of being formal. (Feige (1990), (Hernando 1989) (La Porta and Shleifer, 2008)

The OECD basing on the heterogeneity of the activities which encompasses the non compliant behavior uses the term non observed economy (NOE). The NOE consists of all product activities that are classified into the following sub-areas: illegal production, informal production, household production and underground production. (*OCDE, 2003*)

Consequently, the underground economy includes all activities that have legal outputs but employ illicit means and are concealed from public authorities for the following reasons, such as: avoiding the payment of income, social security contributions and other taxes, besides avoiding certain legal labor market standards and other administrative obligations, etc.

After defining the underground economy, we will emphasize the main driving forces of the non compliant behavior in the next section.

1.2. The driving forces of non compliance

In general, the main determinants of non compliance can be gathered in the following sub-categories: **economic** (as macroeconomic policies …), **political** (as corruption and rent seeking…) and finally the **institutional** (formal and informal institutions) which are the novel of this research.

In order to understand the link and the contribution of the institutional framework in the existence on non compliant behaviors, we will base on the definition of institutions of North, among others. Institutions are generally defined as the "*rules of the game*", or "*humanly- devised constraints that shape human political and social interactions*". Since human beings live in an uncertain world, they devise institutions to control their environment, to bring some certainty. (North, 1990)

Among the different classifications of institutions**,** we select the North's division, where he considered **Formal institutions** as the rules engaged in formal structures such as constitutions, political institution and property rights systems, while **Informal institutions** are largely self-enforcing through *mechanisms of obligation*, and they include: socially sanctioned norms of behavior (e.g. attitudes, customs, taboos, conventions and traditions), extensions, elaborations and modifications of formal rules outside the official framework.

1.3. Link between non-compliance and institutions, and economic policies :

After defining institutions (formal and informal), we will now turn to analyze the link between non-compliance and institutions from an institutional perspective.

There are several school of thoughts that analyze the determinants of informality, **some of them** attribute the rising size of the underground economy to government size and its economic policies (Dessy and Pallage, 2001) and to tax burden, **while others** found that institutional quality and corruption and bureaucracy have a major impact on economic outcomes, and thus on the underground economy. (Schneider 2006), (Eric Friedman 2000), (SIMON JOHNSON 1998) and (Torgler and Schneider (2007)

The second school of thought is based on the legalist approach. This approach is emerged in over the years 80s and 90s, by the book of De Soto in 1989, where he interpreted the existence of the underground economy as a rational optimizing behavior of economic agents who seek for circumventing onerous government regulations[3] (in terms of taxes and bureaucratic regulations). Consequently, the lack of respect for the government regulations is the result of the inadequacy of these regulations to the economic and social context. This is why this approach is considered as representative to the New Institutional Economics (NIE), where it pinpoints the role of institutions in the allocation of resources. (Feige, 1990)

Moreover, the complexity of these regulations leads to more amount of time and legal procedures to comply with them, besides corruption and bureaucratic costs. The fact that economic agents go underground is because they are rational, and thus they calculate the costs and benefits of formality. However, non compliance also has costs, such as: the impossibility to access to advertising, bank's credits and public markets, in addition to the costs of corruption to police officers and of rent-seeking bureaucrats to remain underground. (Lautier. B.2004)

Thus, institutional design plays a crucial role in shaping the incentives to go underground, where both formal and informal institutions are important in reducing the costs of undertaking economic and social interaction between individuals and raising the level of economic growth and social welfare, where the *development of underground activities* is the consequence of the gap between public policies and the institutional environment, *where each part of the underground economy reflects the different violated rules*.

According to Feige (1990), who stressed that when formal and informal institutions are complement and consistent, this will promote the agents' behavior to remain formal, whereas when formal institutions conflict with informal norms, this will raise the noncompliance with the formal rules and the informal institutions will dominate, and thus, the underground economy will be a pervasive issue to be resolved.

The previous thoughts fit with the point of view of *North and al, (2009)*, who found that to be developed economically requires economic organizations, enforcement of property rights and other contractual commitment. To be developed politically requires efficient rule of law and state control, where institutions; both formal and informal; generate and enforce rules of behavior (which structure incentives and constraints) and rules of procedure (means for modifying the existing rules). All of this pinpoints the need for improving the functioning of law and justice by the enforcement of contracts and the protection of property rights. (Schneider, Buehn and Montenegro, 2010)

To sum up, economic performance relies on both the formal and informal institutions and the compliance with them, so it is important to ensure efficient formal institutions that are complementary with the informal ones, in order to enforce property rights and reduce uncertainty and transaction costs, in order to promote economic growth and technological progress. All of this will specify efficient contracts among firms and their environment, where there are *strong formal rules*, such **as rules of law and courts** to enforce those contracts to increase

[3] De Soto's analysis is based on the idea that all the informal agents are entrepreneurs.

the citizens' attitude towards the state, and *informal rules*; such as **trust and cooperation;** that are the basis for resolving conflicts.

2. A global outlook on the institutional framework in Algeria

As policymakers and researchers focus more on the question of the impact of governance on economic development, they have required measures of the quality of governance to set policy and to conduct analyses. In this perspective, we will use those institutional measures of different institutional institutes in order to help us in analyzing and determining the main drivers of non-compliance in Algeria and thus in the construction of our study institutional indices, where our main aim is to compare their findings with our field survey results to seek for other implicit causes of non-compliant behaviors in Algeria.

For this purpose, several measures of the quality of governance have been created. Among these are the following international institutes' measures: the World Bank (doing business), the Worldwide Governance Indicators; Ibrahim index of African governance (IIAG); Heritage foundation on the index of economic freedom; Transparency international on corruption perception index; Fraser Institute on economic freedom index and The Global Competitiveness Index.

According *to the World Bank*, the rising size of the underground economy is due in the first place to the weak institutional framework of the business environment that contains some inadequate regulations for creating businesses whether the procedures, time or costs. Algeria rank is 156. *(World Bank, Doing Business 2017)*

Thus, starting a business in Algeria is a lengthy, bureaucratic and difficult process to engage in; which promote economic agents to go underground.

As to the Worldwide Governance Indicators (WGI), although the massive investment that Algeria has made in different socio-economic fields to foster inclusive growth, many other structural issues have emerged, such as: weak private sector job creation where the public sector is supposed to promote private sector rather than compete with it, besides high unemployment, low women labor force participation and insufficient quality of public services. (Pierre & Souissi, 2018)

As to the *Ibrahim index of African governance (IIAG)* that was created in recognition of the need for a quantifiable tool to accurately measure and monitor African governance performance; Algeria scores higher than the African average and the regional average for North Africa. It is ranked 3rd in North Africa in overall governance, being outperformed by both Tunisia and Morocco, while performing better than Egypt, Mauritania and Libya.

As to the *Fraser Institute on economic freedom index*; Algeria's score remained unchanged at 5.9 points for legal structure and security of property rights, with a rank of 10th, up from 14th. Algeria is the least free in the Arab world for this area. In the regulation area, its score fell from 5.7 to 5.6, with a rank of 18th, down one from last year.

As to the *Heritage foundation on economic freedom index*, explors the low level of economic freedom of the Algerian economy; which is due to low quality of rule of law and regulatory efficiency, besides the low attractiveness of FDI and few opportunities that promote entrepreneurial activity. Algeria's overall score has dropped 1.8 points because the declines in property rights and investment in business freedom.

As to the *Transparency international on corruption perception index*; corruption is a growing problem in the Algerian society including all its forms and the damage that could affect the economic activity. Although the rules and the regulations that are created in this field, its impact and its spread size in the whole economy couldn't not be arrested or reversed.

To sum up, the rising size of the underground economy in Algeria is the result of many social and economic phenomena, among which the weak institutional settings and inefficient economic policies, which will be empirically tested in the next section in our empirical research.

3. Empirical research on informality in Algeria

In order to analyze the link between governance and the institutional quality indices and the size of the non-compliance in Algeria, we run a field survey in the economic sector based on the economic enterprises in different regions of the west of Algeria.

In this perspective, this research addresses the following issues: what is the link between institutions, economic policies and non-compliance? And how do institutions shape the incentives of the economic agents to go underground?

A questionnaire was designed basing on the LIKERT scale (from 1 to 5) forming our study constructs; which are: Trust in public institutions, Support of public institutions, Corruption and extra-costs, Execution and adjustment of the rules of law, Legal system and enforcement of property rights, Persistence of informal institutions and previous habits, Impact and attractiveness of FDI and Informal practices (that reflect the size of the non compliant behavior).

3.1. Research Methodology:

In this research, we used the PLS-SEM approach to assess the impact of institutional settings on the existence of non compliance; with special emphasis on the impact of informal rules like lobbying, rent-seeking of bureaucrats, privileges, old habits and values are deep-rooted in the economy in which they affect the relationships between economic agents, which in turn affect the economic performance of the whole economy.

3.2. The choice and presentation of the measurement method

We used the following statistical tools to analyze the obtained data; the SPSS software to analyze the preliminary data and the estimation of the partial least square- structural equation path modeling (PLS- SEM) is conducted by the SmartPLS 3.00 software. And for the reason of multi-colinearity issue among our study constructs, we run a PLS regression using XLSTAT 2014 to resolve this issue and to measure the effect of the institutional settings on non compliance.

Moreover, the SEM analysis reveals that there are two statistical techniques: covariance based SEM and variance based SEM[4], the so-called: PLS-SEM path modeling. This approach allows the analysis of small sample size and missing data, which is better suited for our research analysis.

[4] It is sometimes called: composite-based SEM , variance-based SEM or components-based SEM.

According to Hair et al (2014), the first step when using PLS-SEM is the model specification, which encompasses creating a path model that, connects the exogenous and the endogenous constructs basing on the literature review.

3.3. The process of PLS-SEM Path Model assessment

According to Hair et al, 2014, when applying the PLS-SEM, there are three important steps that the researcher should follow, which include: the model specification (e.g. data collection and examination), the outer model evaluation and estimation of the inner model.

3.3.1. The outer model evaluation

However, there are similar estimation stages than the mentioned above, but much clear in Hair et al, 2014, where he stated that the reflective measurement model are assessed with reliability and validity to achieve the model consistency.

The reliability means the extent to which the measurement model is reliable in measuring intended latent constructs, the so-called construct or composite reliability. It values ranges from 0.60 to 0.70; whereas values beyond 0.60 indicate a lack of reliability.

In general there are three types of validity, which are: convergent validity, construct or composite validity and discriminant validity.

Moreover, the PLS-SEM is an iterative process that aims to achieve a good model. This procedure is called the uni-dimensionality procedure. It is achieved by getting the acceptable outer factor loadings (should be equal or higher than 0.50) for the latent constructs after removing the undesirable factors that affect the total reliability of the outer model.

After the deletion of the undesirable factors, the measurement model should be run again with the reliable factors. This procedure is primordial to improve the reliability and validity of the measurement reflective model.

3.3.2. The inner model evaluation

After doing the uni-dilensionality procedure and verifying the reliability and validity of the uter model, we should evaluate the PLS path model coefficients.

To do so, we should run the bootstrapping to determine first the significance of the factors or the indicators. this approach is a re-sampling procedure that creates other subsamples from the basic sample, and thus, estimates the model coefficients for each of these subsamples, and obtains a large number (5,000 or more) of model estimates, which can be used to compute a standard error of each model parameter . (Hair et al., 2014)

3.4. The estimation results

The figure of the two step process of PLS Path Model assessment above, shows that within the measurement model, we should verify the reliability and validity among the model constructs.

3.5. The assessment of the measures' reliability

First of all, we will test the composite reliability to evaluate the construct measures' internal consistency reliability. The composite reliability should be higher than 0.70 and the AVE support this reliability when each construct's average variance extracted (AVE) is loadings above 0.50. The results are presented in the following table:

Table 1: composite reliability of the measures

Latent variables	*Measure variables*	*Composite reliability*	*AVE*
Threshold		> 0.70 > 0.50	
Informal practices	infor1, infor2	0.813	0.687
Support of public institutions	supp4	1.000	1.000
Adj. of formal institutions	adj1 till adj5	0.881	0.649
Persist. of informal institutions	pers1,pers2,pers3	0.832	0.712
Quality of legal system	legal1	1.000	1.000
Trust in governance	trust1, trust2	0.856	0.749
Cost of institutional change	extracost1	1.000	1.000

Source: author's construction based on the PLS PM results.

The results of our latent variables show a good composite reliability and AVE, which reflect a good measure 'reliability.

3.5.1. Assessment of the convergent validity of the measures

The second step is the assessment of the construct's convergent validity of the observed variables; which refers to the correlations between the observed variables and their reflective constructs. The convergent variables are those who have coefficients of correlation higher than 0.70 (Fornell and Lacker, 1981). The next table shows the results of this step, as follows:

Table 2: convergent validity of the latent constructs

	Adjusutment of formal institutions	**Cost of institutional change**	**Informal practices**	**Quality of legal system**	**Persistence of informal institutions**	**Support of public institutions**	**Trust in public institutions**
Convergnet reliability when correlation bet measure variables and construct > 0.60							
adjust1	0.730						
adjust2	0.792						
adjust3	0.840						
adjust4	0.855						
extracost2		1.000					
informal1			0.743				
informal2			0.907				
legal1				1.000			
persist1					0.854		
persist2					0.834		

support4						1.000	
trust1							0.813
trust2							0.915

Source: author's construction based on the PLS PM results.

We have first removed all the non desirable measure variables that don't fulfill the convergence conditions, and then, we have estimate our measurement and structural relationships using the bootstrapping approach.

In here, we mention that the latent constructs cost on institutional change, quality of legal system and support of public institutions have one measure variable, because the other measures didn't satisfy the convergence conditions, thus, they have been removed from the path model.

3.5.2. Assessment of the discriminant validity of the measures

This validity represents the extent to which the construct is empirically distinct from other constructs, in other words, the construct measures what it is intended to measure. Basing on the Fornell and Lacker (1981) criterion, this method states that construct shares more variance with its measures (or its indicators) than with any other construct. To do so, the AVE of each construct should be greater than the squared correlations with any other construct. (HAIR, et al. 2014)

Another option to verify the discriminant validity is by examining the cross loadings of the indicators. (HENSLER et al, 2009)

Table 3: discriminate validity of the measure variables (based on Fornell-Larcker Criterion)

	Adjust	**Cost**	**Informal**	**Legal**	**Persist**	**Support**	**Trust**
Criterion	**AVE (x) > Cor² (x, y)**						
Adjust	**0.806**						
Extra cost	0.072	**1.000**					
Informal	0.517	0.165	**0.829**				
Legal	0.104	-0.404	0.273	**1.000**			
Persist	-0.619	0.040	-0.597	-0.184	**0.844**		
Support	0.024	-0.117	-0.357	-0.036	-0.030	**1.000**	
Trust	-0.136	-0.085	-0.458	-0.038	0.149	0.766	**0.865**

Source: author's construction based on the PLS-PM results.

Thus, from the table above, the discriminant validity conditions are verified among the model constructs.

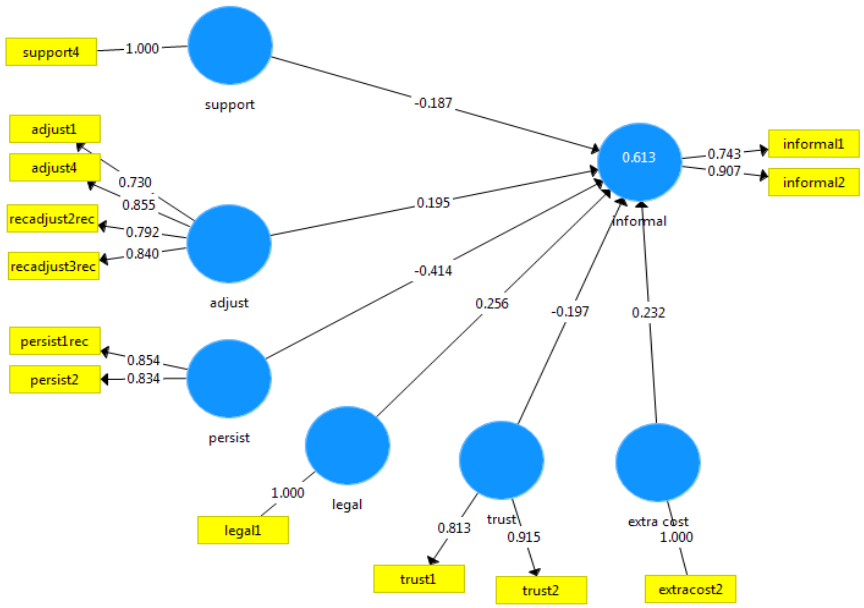
3.6. The PLS structural path model estimation

This section is devoted to the estimation of the structural model and coefficients of the links between the measures variables and the latent constructs.

We have seven latent constructs; with one endogenous latent construct; and eleven measure variables related to each other by a reflective mode that are reflected by arrows coming from the latent construct to its indicators. The estimation coefficients are those located on the links between exogenous and

endogenous latent variables. The following figure presents the structural model and loadings among the measures and the latent constructs.

Figure 1: measurement model of PLS-SEM after uni-dimesionality



Source: results of PLS path modeling based on the SmartPLS (version 3.0).

For our model, R^2 is about 0.613, which reflect a good explanation of the endogenous construct (informality) by the exogenous latent variables.

The regression coefficients are presented on the arrows that relate the constructs to their measure variables.

In general, some latent variables have positive coefficients; which are quality of legal system (0.256), adjustment of formal institutions (0.195) and the cost transformation institutional (0.232).

The other latent variables have a negative effect on the endogenous construct, which are support of public institutions (-0.187), persistence of informal institutions and old habits (-0.414) and trust in public institutions (-0.197).

3.7. PLS regression results

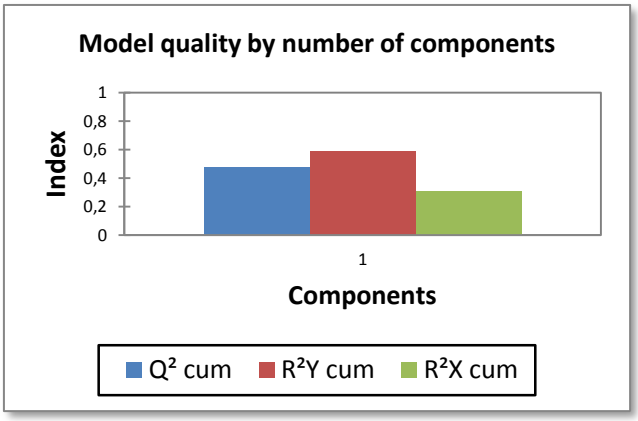
Among the used approaches to solve the multi-collinearity, we have the PLS regression. It is a technique that aims to create from a sample of n observations and p variables, a set of components with PLS algorithm. In other words, it is a statistical procedure that predicts a dependent variable from an unlimited number of possible correlated explanatory variables by a linear relationship. Esposito Vinzi, V., Lauro, C. (2003), and (Lohmoller 1989)

The PLS regression is applied in the XLSTAT 2014, the results of this technique are as follows:

✓ The model quality, which is based on the following criteria (Q^2_{CUM}, R^2_{xCUM}, R^2_{yCUM}):

Table4: model quality indexes

Index	Comp1
Q^2_{CUM}	0.476
R^2_{yCUM}	0.588
R^2_{xCUM}	0.305



Source: extracted from the PLS regression results.

It is clear from the table above of the model quality that the indexes have a good quality the one component, which are 0.476, 0.588 and 0.305.

Table 5: the PLS regression normalized coefficients

Variable	Coefficient	Std. deviation	Lower bound (95%)	Upper bound (95%)
Adjust	0.286	0.107	0.077	0.495
extra cost	0.091	0.089	-0.082	0.265
Legal	0.151	0.138	-0.120	0.423
Persist	-0.330	0.121	-0.567	-0.093
Support	-0.198	0.172	-0.534	0.139
Trust	-0.253	0.078	-0.406	-0.101

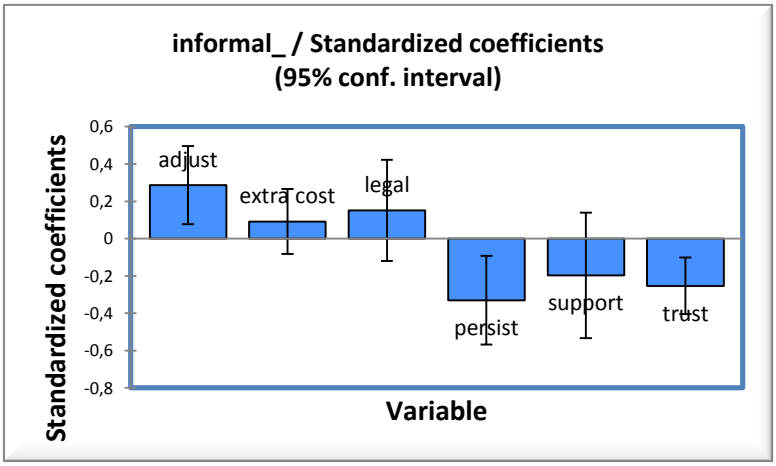
Source: extracted from the PLS regression results.

The table above indicates the signs and model coefficients between the latent construct informality and the exogenous latent constructs.

We can see that the variables cost of institutional transformation, quality of legal system and support of public institutions are not statistically significant, although they have the desirable sign.

The other variables, trust in public institutions has a negative sign (-0.253) on informality (informal practices). Persistence of informal institutions (-0.330) and adjustment of formal institutions (0.286) have an impact on informality but they have not the expected sign. The following figure also illustrates these results:

Figure 2: confidence interval of the latent constructs



Source: extracted from the PLS regression results.

These results can be interpreted basing on our hypotheses and the literature review as follows:

First, we will begin by the significant variables. Trust in public institutions explains the informality variance by about 26%. Besides it affects negatively informality. This means that trust measures the confidence between the economic agents and level of trust that those economic agents have in the economic system and public institutions. Thus, the greater the index implies the lowest level of informal practices.

The index of persistence of informal institutions implies: the highest level indicates the great influence of the rules and institutions of old regime, and thus the resistance to the institutional change increased by economic agents. This results in the increasing size of informal practices that break the rules of law.

Our results indicate that persistence of informal institutions has an impact on informality, but this impact is negative (explain its variance by 33%). This means that even economic agents resist economic change but they do not go underground.

Adjustment to formal institutions implies adaptation of the economic agents to formal economic institutions. Our results indicate a positive impact on informality (explain its variance by 29%), which means that there is a bad execution of the rules of law, although there are many adjustments of the economic institutions that aim to promote entrepreneurial activity and thus improve economic growth.

The other variables; which are cost of institutional transformation, quality of legal system and support of public institutions are not significant and have not an impact on informality even their importance in the institutional analysis of informality. We can attribute this non significance to the small sample size and the used PLS approach that is a constructive method.

Conclusion

The objective of this research is to analyze the impact of institutional and governance indicators on the non compliance (informal practices) in Algeria. To do so, we sued a field survey on the economic enterprises in the west of Algeria.

Our findings indicate that the existence of the informal practices over the economic enterprises is due in the first place to the level of trust that the economic agent have in the public institutions and the economic system. In the second place, is due to the persistence of informal institutions and the adjustment to formal institutions that reflect the adaptation of economic agents to formal economic institutions.

However, some variables are not significant even their importance in the analysis of non compliance, which is due to the small sample size.

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