Economics Bulletin

Volume 37, Issue 1

Elicitation of the determinants of decent work in developing countries: evidence from Côte d'Ivoire

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Abstract

Despite numerous papers on decent work, there are no publications that address at individual level the assessment of decent work. This article proposes an approach to construct an individual level decent work indicator and to analyze the decent work determinants in order to facilitate specific policies design. The decent work index is constructed through a multiple correspondence analysis (MCA) approach and a hierarchical classification is used to classify worker into decent work and non-decent worker groups. The analysis of decent work determinants through a logistic model shows that the level of education, the employment type, the institutional sector, and the capability to migrate for job seeking are the main determinants of decent work. We also highlight the regional related decent work inequalities.

Citation: Richard Kouamé Moussa, (2017) "Elicitation of the determinants of decent work in developing countries: evidence from Côte d'Ivoire", *Economics Bulletin*, Volume 37, Issue 1, pages 494-507
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Submitted: December 14, 2016. **Published:** March 20, 2017.

1. Introduction

Job is good for well-being. Job contributes to improve the quality of life and reduces the poverty (Waddell and Burton 2006). Earlier works of labour economics have shown that worklessness is more often associated with physical and mental health problems (Jin et al. 1995, and Brenner 2002). This might be due to the pecuniary reasons (Winkelman and Winkelman 1998, and Clark et al. 2001) or to the fact that worklessness damages individuals' self-esteem (Llena-Nozal 2009). Thus, work is central for individuals' well-being including both health and financial conditions and social condition. However, work can be harmful for individuals' health due to harsh working conditions (Debrand 2011). Thereby, workers can be constrained to leave job in order to preserve their health (Coe and Zamarro 2008). Furthermore, jobs with high strain induce high level of social isolation (Vézina et al. 2004). Since individual with good health condition spends more time on the labour market (Gimenez-Nadal and Ortega 2013, and Gimenez-Nadal and Molina 2015), any factor that decreases health condition can reduce labour participation or time spent on labour market.

In order to restrain the harmful effects of work on individual well-being, many policies have been designed and implemented. These policies are known as labour laws and regulations that might be different across countries. However, these international labour standards mainly focus on working time, minimum wage, and social security. Minimum wage and working time are set in order to allow workers to live a minimum life of dignity and to stay productive. Social security is designed to ensure a life of dignity at the retirement. These dimensions have been used as criteria to define formal work and used to appreciate the quality of job. Nevertheless, the quality of job covers many others dimensions such as flexibility and security and must account for worker's aspirations.

Due to the restrictive definition of formal work and its inability to capture the quality of work, the decent work concept has been defined by the International Labour Office (ILO). According to the ILO's definition, a decent work must give flexibility, security and dialogue. These three dimensions allow reaching social and institutional goals such as adequate earnings, productive work, decent working time, safe work environment, stability and security of work, social security, social dialogue, and allow worker to combine work, family and personal life (ILO 2013a). This definition covers the classical formal/informal work definition and others very important dimensions mentioned above. The aim while promoting decent work for all is to insure for workers a job that is safe and productive for all stakeholders. Especially, for workers, the job should allow them to be productive, to have an adequate income, to be secured at workplace, to have a social protection and a social integration. Thus, decent work for all is one of the main concerns for the ILO and others united national organizations that promote zero poverty.

Since the definition of the decent work involves many dimensions, its measurement requires aggregating dimension. However, in the ILO's approach, decent work has been assessed in many countries by establishing country profiles[1]. These country profiles consist of analyzing the decent work indicators, dimension by dimension. The current state and the dynamic of these indicators are analyzed in order to point out whether or not some improvements have been made at country level. The assessment of decent work has been undertaken at country level in several studies. Several macroeconomic indicators including indicators from the

[1] Many low and middle income countries have established their decent work profile. ILO (2013b) gives an assessment of decent work in Senegal. Decent work profiles for low and middle income countries are available on the ILO website : www.ilo.org/integration/themes/mdw/land--en/index.htm

Labour Force Survey are used. However, at individual level, there are no study addressing the issue of decent work assessment and its determinants. Thus, the crucial question of decent work determinants is not treated.

The country profiles approach does not address two key issues that are: (i). to give an individual level indicator of decent work that can allow decision makers to know the share of workers that can be considered as "decent worker", and (ii). to propose policy design that can be undertaken to promote decent work. The lack of measurement of the decent work at individual level prevents the analysis of the decent work determinants that might allow decision makers to design specific policies to reach the goal of decent work for all.

The aim of this paper is to propose an approach to construct an individual level decent work indicator and to analyze the determinants of decent work in order to help designing adequate policies to improve decent work promotion among workers. For this purpose, we use the MCA approach to construct a decent work index. Base on the results of this MCA, a hierarchical classification is used to form groups of decent workers and non-decent workers. The determinants' analysis is conducted through the estimation of a logistic model and the estimated marginal effects.

The rest of the paper is organized as follows. In section 2, we present our methodology. Section 3 makes a description of the dataset used herein and gives some related statistics. In Section 4, we present and discuss the results, and Section 5 concludes.

2. Methods

2.1. Decent work index construction

Composite indexes construction involves the question of aggregating dimensions. In statistical literature, this challenge has been treated by two major methods that are entropy and inertia approaches (Ki et al. 2008). The main issue with the entropy approach is the choice of the weighting set in the index construction. Since this choice can be arbitrary[2], researchers developed another approach based on inertia. The inertia approach uses the multidimensional analysis framework (See Bry 1996 for a wide description of these analysis) and has been implemented in several fields such as poverty analysis (Ki et al. 2008) or quality of life assessment (Ionescu 2012). This latest approach is based on the spectral decomposition of the correlation matrix and preserves the maximum of the total variation (inertia) in the data. Thus, it has the advantage to account for the correlation structure in the data.

When dimensions are characterized by categorical outcomes, the multiple correspondence analysis (MCA) framework is used. This approach allows computing orthogonal axis that has the advantage to measure statistical dimensions (Nardo et al. 2005). The first axis is the more informative since it gathers the maximum proportion of variance. Then, researchers use the standardized score of each categorical variable on the first axis as weight when aggregating these variables into an index. Thus, for an individual, the composite index of decent work is given by the weighted score of his value taken for all the selected categorical variables.

Let K denotes the number of categorical variables involved and N denotes the number of individual. As we are using a national level representative survey, let ω_i denotes the sampling weight for individual i. Let $X_k^i, for\ k = 1, \dots, K\ and\ i = 1, \dots, N$ denotes the value of the

[2] Bonnet et al. (2003) used a uniform weight set that consists in given the same weight to each variable used.

variable X_k for individual i. Since we are dealing with categorical variables, let C_k denotes the number of category for the variable X_k. Let $J = \sum_{k=1}^{K} C_k$ denotes the overall number of categories. MCA consists in the following steps:

- For each variable X_k, created C_k binary variables $X_{k,c}, for\ c = 1, \dots, C_k$corresponding to each category of the variable X_k;
- Construct the Burt cross table B that consist on a J x J table giving in each cells corresponding to the intersection of $X_{k,c}$ and $X_{k',c'}$ the sample weighted frequency $n_{X_{k,c};X_{k',c'}}$ of the individuals that respects $X_{k,c} = 1\ and\ X_{k',c'} = 1$. Note that $n_{X_{k,c};X_{k',c'}} = \sum_{i=1}^{N} \omega_i \, \mathbb{I}_{X_{k,c}=1\ and\ X_{k',c'}=1}$ where $\mathbb{I}$ denotes the indicator function.
- Perform the spectral decomposition of the matrix $M = B^T B$ where B^T in the transposed matrix of B. From this analysis, we get the maximum eigenvalue λ_{max} and its associated eigenvector u_{max}. Note that u_{max} is a J dimensional vector.
- Compute the weight for the each binary variable $X_{k,c}$ as $W_{k,c} = \frac{u_{max}(X_{k,c})}{\sqrt{\lambda_{max}}}$ where $u_{max}(X_{k,c})$ is the component of u_{max} corresponding to the binary variable $X_{k,c}$.
- From the weighting set computed above, compute the individual level decent work indicator (DWI) for individual i as $DWI_i = \sum_{k=1}^{K} \sum_{c=1}^{C_k} W_{k,c} * X_{k,c}^{i}$. For convenient analysis, we normalized this indicator between 0 and 1 as $NDWI_i = \frac{DWI_i - DWI_{min}}{DWI_{max} - DWI_{min}}$.

In order to be comfortable with the use of these weights, all involved variables must fulfill the First Axis Ordinal Consistency (FAOC) criterion (Ki et al. 2008). This criterion insures that the ordering of individuals among the first axis is consistent with the decent level of their work. It means that for a given categorical variable, the decent level structure is well represented[3] on the first axis. For example, if we consider the working time indicator that has two categories (normal or excessive), the category "normal" should be well represented at the right hand of the axis while the category "excessive" is well represented at the left hand of the axis.

2.2. Elicitation of decent work determinants

In order to analyze the decent work determinants, we need to classify individual into two groups: the ones with a decent work and those without a decent work. For that purpose, we must compute a decent work threshold. The computation of the threshold is based on the approach used by Ki et al. (2008) that used a hierarchical classification framework.

The hierarchical classification uses the results of the MCA to form two groups (lower NDWI group L_{NDWI} and higher NDWI group H_{NDWI}). The individuals in each group must be closer to each others so that each group is homogenous (low within variance) and groups are heterogeneous (high between variance). The method consists in reducing within variance and maximizing between variance. In order to insure the quality of classification, a homogeneity test is conducted. We also analyze the share of group members that have the characteristic $X_{k,c}$ (says CLA/MOD) and the share of individuals with the characteristic $X_{k,c}$ (says MOD/CLA) in the group is analyzed. Then, to compute the threshold $NDWI_0$, we calculate the value separating the two groups as:

[3] A categorical variable with a high squared cosine is considered well represented on the axis.

$$NDWI_0 = \frac{\left(\max_{i \epsilon L_{NDWI}} NDWI_i\right) * \sum_{i=1}^{N} \omega_i \mathbb{I}_{i \epsilon L_{NDWI}} + \left(\min_{i \epsilon H_{NDWI}} NDWI_i\right) * \sum_{i=1}^{N} \omega_i \mathbb{I}_{i \epsilon H_{NDWI}}}{\sum_{i=1}^{N} \omega_i} \quad (1)$$

Then, an individual i has a decent work when $NDWI_i > NDWI_0$. The advantage of this approach is that it allows for comparison either at regional or at international level.

To analyze the determinants of decent work, we estimate a logistic model. Let Y_i denotes the decent work state, i.e. $Y_i = 1$ if individual i has a decent work and zero otherwise. Let Z_i denotes a set of socio-demographic and job characteristics for individual i. Z includes age, gender, level of education, marital status, nationality, migration for job, job seniority, residence area, time before entering job, employment type (self-employed or employed) work institutional sector. Due to regional heterogeneity in labour market (AGEPE 2013), we include regional dummies. We also include some interaction between gender and marital status, education. The interaction between gender and the number of children that is also very important while explaining employment outcomes cannot be treated here since we don't have information about the number of children. The estimated model is the following:

$$P(Y_i = 1) = \frac{1}{1 + \exp(-Z_i \beta)} \quad (2)$$

The model is estimated by maximum likelihood approach. Significance and specification tests are conducted to insure the quality of the model. The marginal effects of all characteristics are also computed in order to allow for comparison of estimated coefficients among models and between determinants.

3. Data and related statistics

3.1. Data

The dataset used in this paper is a subset of the national Labour Force Survey of Côte d'Ivoire achieved in 2012 by the National Statistics Office and the National Agency for Labour Studies and Promotion[4]. It is a national and regional level representative cross sectional survey that covers 47 590 individuals surveyed in 2012. The survey gathered information on individual household characteristics, labour market position, job characteristics and working conditions if ever.

As we focus on decent work, we select from this dataset, a subset of those who are active (age 15 to 64 and have a job or looking for a job, according to the ILO's definition) and are employed. Since decent work is a multidimensional concept, a set of variables that characterize decent work and some individual characteristics have been selected from the survey. For each dimension of decent work, we give all selected indicators based on their availability in the dataset and the measurement of those indicators. For each individual selected, the survey also provides social and demographic information such as age, sex, nationality, marital status, and school grade. After data processing, our subset consists of 19 440 individuals and among which 8 463 females.

[4] In French: Agence d'Etudes et de la Promotion de l'Emploi (AGEPE).

3.2. Descriptive statistics

In 2012 in Côte d'Ivoire, unemployment rate was 9.4% at national level and 11.9% among females. Abidjan was the most concerned city with an unemployment rate of 19.5% and rural areas are less concerned with 3.8% (AGEPE 2013). However, individuals are mostly employed in informal sector[5] (89.4%) and the agriculture sector employs 45.7% of overall labour force.

Despite an unemployment rate closer with those of high income countries, working environment and working conditions are very different. From our statistics, only 12.72% of workers are involved in a job that is adequate with their skills. Wages are very low, with 63.12% of workers that have a wage lower than the legal minimum wage. Jobs are less secured. Only 7.99% of workers have a formal contract and 3.3% of them have a social security.

Table 1 gives some descriptive statistics of the demographic characteristics of the labour force. As we can see, workers are young with an average age of 34.4 (33.1 for females). The number of children under 15 is 1.99 in average (2.28 for females). Almost 57.64% of workers are in couple and one worker over five (19.5%) is not Ivoirian. Individuals most often migrate internally to find a job (11.05%). Internal migration for looking job is more frequent for males (16.21%). In terms of school grade, we only one worker over five has at least a high school grade. The labour force is mainly constituted by workers with no grade (53.48%) with a higher rate among female workers (61.21%).

4. Results

4.1. Assessment of decent work in Côte d'Ivoire

From the 19 variables initially used as indicators to construct our decent work index (see Table 2), we remove 3 variables (Looking for new job, casual worker, and Experience illness due to harsh working conditions) that not fulfill the FAOC criterion. The share of inertia for the first axis is 26.56%. Table 3 gives the computed weight set from this MCA and the test statistics value (that is a chi square with 1 degree of freedom). Table 4 gives the results of the hierarchical classification. It appears that the group of decent work is characterized by jobs with a pay slip, a formal contract, a paid vacation, a social security, job insurance, a medical service at work, a dwelling advantage, and an adequacy between skills and job.

Descriptive statistics on the normalized decent work indicator among the two groups as computed from the hierarchical classification is given in Table 5. The NDWI is very low (0.0726 in average) and only 5.08% of workers are classified in the higher decent work index group H_{NDWI}. The average value of NDWI in the higher decent work index group H_{NDWI} (0.6212) is almost 14 times higher than that in the higher decent work index group H_{NDWI} (0.0433). Figure 1 in appendix gives the Lorenz curve of the computed NDWI. As we can see, there are huge inequalities in the distribution of the NDWI with a Gini index of 0.6728.

From these results, we compute the decent work threshold and each worker's decent work state. The estimated threshold is established at 0.3459. Thus, only 5% of workers in Côte d'Ivoire have a decent work. This statistics is consistent with the fact that the informal sector

[5] In Côte d'Ivoire, the main criterion to define the informal sector is "not being registered at administration level" as taxpayer. In addition to the taxpayer account, the inexistence of formal accounting is used as criterion.

is the bigger employment provider (89.4%, see AGEPE 2013). However, it is important to notice that the non-decent work is not only due to informal sector.

Table 6 gives the demographics characteristics of decent workers. The decent work rate is higher among males (6.96%) than females (2.41%). The decent workers are old than workers in general (39.55 versus 34.41 in general) and are most often married. Decent workers have in average 1.54 children under 15 (1.44 for females). Almost 13.9% of internal migrants for job seeking have a decent work and 9% of non-Ivoirian workers have a decent work. In terms of school grade, decent workers have at least high school grade (45.44%) or graduate level (36.64%). Regarding the institutional sector[6], we find that the public administration provides 46.22% of decent works and 18.85% of formal works are provided by the formal private sector. However, we find that the informal sector is the second most important decent work provider with 26.78% of decent works.

4.2. Determinants of decent work

We analyze the determinants of decent work through two specifications of the logistic model. Estimated marginal effects are displayed in Table 7. The first model is estimated without taking into account regional fixed effects. The first model is significant with a R2 of 0.6398. The second model accounts for regional fixed effects and is also significant with a R2 of 0.6475. The marginal effects for each region are displayed in Table 8. We remove the interactions between gender and couple, and gender and school grade that have been found not significant. It denotes that there are no discriminations of decent work due to gender between worker in couple or not and between the different school grades. The worker's nationality is also not significant.

Results from both models with and without regional fixed effects are quite identical. By accounting for regional fixed effect, we find that for most of the region, being out of the capital reduces significantly the probability of decent work comparatively to Abidjan. The finding highlights the crucial question of job quality. The capital Abidjan of Côte d'Ivoire has the highest unemployment rates (AGEPE 2013). However, jobs in Abidjan have very high quality comparatively to other region. The jobs in the other region are mostly in agriculture and are provided by the informal sector (95.9% of job positions in rural areas are in the informal sector, see AGEPE 2013).

Turning to school grade, we find that the effects have expected signs. When we control for regional fixed effects, we conclude that, compared to workers with no grade, those with primary school grade, high school grade, and graduate level have respectively 0.0139, 0.0444, and 0.0771 higher probability points to have a decent work. Concerning institutional sector issue, when we control for regional fixed effects, we find that compared to workers in public administration, those in para-public sector, in private formal sector, in informal sector, and in households have respectively 0.0658, 0.0706, 0.1032, and 0.1275 lower probability points to have a decent work. This finding raises the problem of control of regulation. Since in public administration, the laws and regulations are systematically applied, workers in that sector are more likely to have decent work. However, in others sectors, the main problem is the lack of control. We find that 44.23% of workers in private formal sector, 42.77% of workers in

[6] Institutional sector refers to the type of institution in which the workers are employed. It can be (i) the public administration, (ii) para-public administration that includes international institutions, non-governmental organizations, …, (iii) private formal that includes all private firms regardless the industry sector, (iv) the informal sector, and (v) the household that covers all the household workers.

informal sector, and 63.04% of workers in households report an excessive work time, versus 21.28% in public administration. Concerning wages, 81.34% of workers in households, 66.05% of workers in informal sector and 37.13% of workers in private formal sector have an earning lower that the legal minimum wage. Thus, policies have to be designed to address the issue of quality of job in formal private sector, in informal sector and even stronger in household jobs sectors. We also find a significant difference between self-employed and employed. Being self-employed reduces by 0.1215 the probability of decent work. This finding is consistent with the literature. Even if self-employed have more flexibility of job; the quality of their job can be affected by the high level of stress they undergo (Gimenez-Nadal and Ortega 2010).

Another relevant determinant of decent work is the mobility of workers on the labour market. We find that workers that migrate to seek job have 0.0062 higher probability points to find a decent work. Thus, facilitating internal migration through several policies concerning dwelling, or migrant employees' status can help improving decent work. We also find a positive and significant effect of job seniority on the probability of having a decent work. One more year in the same job increases by 0.0011 the probability for having a decent work.

Demographic characteristics have also the expected signs. We find that workers in couple have 0.0137 points of probability more to have a decent work. We also find a positive effect of aging on the probability for having a decent work. We find that there are no significant gender differences of chances to have decent work. Even if the interaction of gender with education and being in couple are not significant, this finding points out the inexistence of inequality between male and female in terms of job quality. The job market inequalities have been widely discussed in labour economics literature through the wage inequalities and the job market entrance inequalities.

5. Conclusion

The paper proposes a novel approach to assess the decent work at individual level and analyzes the determinants of decent work in a developing country. Despite numerous analysis of decent work in literature, no study has focused on its measurement at individual level. This lack of attempts to analyze decent work at individual level limits the design of specific policies that can help improving job quality and reaching the ILO's decent work for all goals. In this paper, we propose an approach based on multidimensional analysis to construct a decent work indicator. Since decent work covers many dimensions measured by categorical variables, we use a MCA to extract a weighting set in order to aggregate these dimensions into an indicator. We also use a hierarchical classification approach to compute a decent work threshold that helps classifying workers with decent work or non-decent work groups. Then, we estimate a logistic model to point out decent work determinants.

Our results show that only 5% of workers in Côte d'Ivoire have a decent work. In terms of determinants, we find that the school grade, employment type, the institutional sector, and the capability to migrate for job seeking are the main determinants decent work. We also highlight the high regional disparities in decent work. Being out of the capital Abidjan has been shown to be a weakness for decent work even if others regions are those with lower unemployment rates in Côte d'Ivoire.

These results suggest that the policy designers should insure that the labour market laws and regulations are respected especially in formal private sector, and to promote laws and regulations in informal and households sectors. Policy should also be designed to facilitate

migration for job seeking. Our results also encourage to new strategy in fighting against unemployment. Creating job is not sufficient; policy measures should be taken to insure the quality of these new jobs.

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7. Appendices

Table 1 : Descriptive statistics on the labour force

Variables	Among Males	Among Females	Overall
Age	35.39	33.10	34.41
Number of children under 15	1.7762	2.2755	1.9912
In couple	0.5777	0.5746	0.5764
Not Ivoirian	0.2273	0.1526	0.1951
Migrant for looking job	0.1621	0.0421	0.1105
No school grade	0.4764	0.6121	0.5348
Primary grade	0.2608	0.2487	0.2556
High school grade	0.2038	0.1189	0.1672
Undergraduate or graduate level	0.0590	0.0203	0.0423

Table 2 : Decent work indicators and related descriptive statistics

Dimension	Indicators	Categories	Frequency (in %)
Employment opportunities	Work promotion	Yes promotion	4.11
		No promotion	95.89
	Looking for new job	No	86.35
		To find a suitable work	13.65
Adequate earnings and productive work	Wage revaluation	Salary revaluation	4.99
		No salary revaluation	95.01
	Earnings higher than minimum wage (the legal minimum wage in 2012 was 36 607 XOF = 55.807 euros***)	Earning higher than the legal minimum wage	36.88
		Earning lower than the legal minimum wage	63.12
	Professional training	Professional training	8.52
		No professional training	91.48
	Job adequate with initial skills	Adequate job with skills	12.72
		No adequate job with skills	87.28
Decent working time	Working time	Normal working time	57.52
		Excessive working time	42.48
	Working days per week	Normal working days per week	34.42
		Excessive working days per week	65.58
	Paid vacation	Paid vacation	3.16
		No paid vacation	96.84
Combining work, family and social life	Unusual working time	No unusual working time	76.98
		Unusual working time, sometime	4.31
		Unusual working time, to survive	18.71
Social dialogue	Worker is a member of a trade union	In trade union	2.49
		Not in trade union	3.56
		No trade union in the firm	93.95
Stability and security of work	Casual worker	Permanent work	6.38
		Temporary work	93.62
	Worker with contract	Formal contract	7.99
		Informal contract	10.75
		No contract	81.27
Safe work environment	Medical service	Medical service	3.14
		No Medical service	96.86

Dimension	Indicators	Categories	Frequency (in %)
	Experience illness due to harsh working conditions	No illness experienced	73.11
		Yes illness experienced	26.89
Social security	Beneficiary of social security	In social security system	3.13
		Not in social security system	96.87
	Dwelling indemnity	Have dwelling advantage	6.64
		Have no dwelling advantage	93.36
	Worker with a pay slip	Pay slip	6.03
		No pay slip	93.97
	Worker with job insurance	Job insurance	3.83
		No job insurance	96.17
***Exchange rate:1 euro = 655.957 XOF			

Table 3 : Dimension weights and related test statistics from MCA

Indicators	Categories	Weight (W)	Test statistics
Work promotion	Yes promotion	2.01	99.9
	No promotion	-0.09	-99.9
Looking for new job	No	Does not fulfill FAOC criterion	
	To find a suitable work		
Wage revaluation	Salary revaluation	0.15	99.9
	No salary revaluation	-0.01	-99.9
Earnings higher than minimum wage (minimum wage in 2012 was 36 607 XOF = 55.807 euros)	Earning higher than the legal minimum wage	0.46	99.9
	Earning lower than the legal minimum wage	-0.27	-99.9
Professional training	Professional training	1.84	99.9
	No professional training	-0.17	-99.9
Job adequate with initial skills	Adequate job with skills	1.49	99.9
	No adequate job with skills	-0.22	-99.9
Working time	Normal working time	0.08	99.9
	Excessive working time	-0.11	-99.9
Working days per week	Normal working days per week	0.22	99.9
	Excessive working days per week	-0.12	-99.9
Paid vacation	Paid vacation	4.38	99.9
	No paid vacation	-0.14	-99.9
Unusual working time	No unusual working time	0.08	99.9
	Unusual working time, sometime	-0.11	-72.3
	Unusual working time, to survive	-0.29	-99.9
Worker is a member of a trade union	In trade union	2.91	99.9
	Not in trade union	1.90	99.9
	No trade union in the firm	-0.15	-99.9
Casual worker	Permanent work	Does not fulfill FAOC criterion	
	Temporary work		
Worker with contract	Formal contract	2.60	99.9
	Informal contract	-0.03	-30.6
	No contract	-0.25	-99.9
Medical service	Medical service	3.63	99.9
	No Medical service	-0.12	-99.9

Indicators	Categories	Weight (W)	Test statistics
Experience illness due to harsh working conditions	No illness experienced	Does not fulfill FAOC criterion	
	Yes illness experienced		
Beneficiary of social security	In social security system	4.07	99.9
	Not in social security system	-0.13	-99.9
Dwelling indemnity	Have dwelling advantage	2.26	99.9
	Have no dwelling advantage	-0.16	-99.9
Worker with a pay slip	Pay slip	3.69	99.9
	No pay slip	-0.12	-99.9
Worker with job insurance	Job insurance	3.36	99.9
	No job insurance	-0.13	-99.9

Table 4 : Characterization of the two groups of workers from hierarchical classification

Categories	Group of non-decent work		Group of decent work	
	MOD/CLA	CLA/MOD	MOD/CLA	CLA/MOD
Yes promotion	2.57	59.34	32.87	40.66
No promotion	97.43	96.44	67.13	3.56
Not Looking for new job	Does not fulfill FAOC criterion			
To find a suitable work				
Salary revaluation	4.90	93.19	6.69	6.81
No salary revaluation	95.10	95.01	93.31	4.99
Earning higher than legal minimum wage	33.93	87.34	91.92	12.66
Earning lower than the legal minimum wage	66.07	99.35	8.08	0.65
Professional training	5.76	64.15	60.10	35.85
No professional training	94.24	97.79	39.90	2.21
Adequate job with skills	9.40	70.17	74.70	29.83
No adequate job with skills	90.60	98.53	25.30	1.47
Normal working time	56.69	93.55	73.09	6.45
Excessive working time	43.31	96.78	26.91	3.22
Normal working days per week	33.06	91.17	59.86	8.83
Excessive working days per week	43.31	96.78	40.14	3.11
Paid vacation	0.12	3.64	59.94	96.36
No paid vacation	99.88	97.90	40.06	2.10
No unusual working time	76.03	93.76	94.59	6.24
Unusual working time, sometime	4.40	96.91	2.63	3.09
Unusual working time, to survive	19.56	99.24	2.78	0.76
In trade union	0.93	35.57	31.55	64.43
Not in trade union	2.25	59.89	28.10	40.11
No trade union in the firm	96.82	97.82	40.34	2.18
Permanent work	Does not fulfill FAOC criterion			
Temporary work				
Formal contract	3.56	42.27	90.77	57.73
Informal contract	11.16	98.59	2.98	1.41
No contract	85.28	99.61	6.26	0.39
Medical service	0.87	26.32	45.59	73.68
No Medical service	99.13	97.15	54.41	2.85
No illness experienced	Does not fulfill FAOC criterion			
Yes illness experienced				

Categories	Group of non-decent work		Group of decent work	
	MOD/CLA	CLA/MOD	MOD/CLA	CLA/MOD
In social security system	0.37	11.08	54.72	88.92
Not in social security system	99.64	97.63	45.28	2.37
Have dwelling advantage	3.63	51.94	62.86	48.06
Have no dwelling advantage	96.37	97.98	37.14	2.02
Pay slip	1.46	22.98	91.50	77.02
No pay slip	98.54	99.54	8.50	0.46
Job insurance	1.20	29.68	53.08	70.32
No job insurance	98.80	97.52	46.92	2.48
Total inertia = 0.9235; Inter group inertia = 0.2514; ratio = 0.2722				

Table 5 : Distribution of decent work index

Groups	Frequency	Average NDWI	Minimum NDWI	Maximum NDWI
Group of H_{NDWI}	0.0508	0.6212	0.3293	1
Group of L_{NDWI}	0.9492	0.0433	0	0.3468
Overall	1	0.0726	0	1

Table 6 : Demographic characteristics of decent workers

Variables	Among Males	Among Females	Overall
Proportion of decent work	0.0696	0.0241	0.0500
Age	40.14	37.28	39.55
Number of children under 15	1.5638	1.4401	1.5382
In couple	0.7417	0.5583	0.7037
Not Ivoirian	0.1013	0.0469	0.0900
Migrant for looking job	0.1462	0.1095	0.1386
No school grade	0.0899	0.0616	0.0841
Primary grade	0.0943	0.0983	0.0951
High school grade	0.4322	0.5394	0.4544
Undergraduate or graduate level	0.3836	0.3006	0.3664
Public administration sector	0.4490	0.5129	0.4622
Para public sector	0.0774	0.0898	0.0800
Private formal sector	0.2005	0.1424	0.1885
Informal sector	0.2724	0.2504	0.2678
Household sector	0.0007	0.0045	0.0015

Table 7 : Marginal effects of decent work determinants

Variables	Model 1	Model 2
Age	0.0007***	0.0007***
	(0.0001)	(0.0001)
Female	0.0048	0.0044
	(0.0033)	(0.0034)
Couple	0.0137***	0.0137***
	(0.0028)	(0.0028)
Number of children under 15	-0.0004	-0.0002
	(0.0007)	(0.0007)
Nationality (Not Ivorian)	0.0013	-0.0006
	(0.0040)	(0.0040)
Migrant for job seeking	0.0063*	0.0062*

Variables	Model 1	Model 2
	(0.0037)	(0.0036)
Residence area (In rural area)	-0.0016	0.0050
	(0.0032)	(0.0036)
Job seniority (in the same job)	0.0011***	0.0011***
	(0.0002)	(0.0002)
School grade (Ref = No grade)		
Primary	0.0142***	0.0139***
	(0.0037)	(0.0037)
High school	0.0456***	0.0444***
	(0.0042)	(0.0042)
Graduate level	0.0833***	0.0771***
	(0.0079)	(0.0077)
Sector (Ref= public administration sector)		
Para public sector	-0.0586***	-0.0658***
	(0.0101)	(0.0108)
Private formal sector	-0.0625***	-0.0706***
	(0.0090)	(0.0100)
Informal sector	-0.0942***	-0.1032***
	(0.0091)	(0.0101)
Household sector	-0.1186***	-0.1275***
	(0.0102)	(0.0109)
Employment type (Ref = employed)		
Self-employed	-0.1289***	-0.1215***
	(0.0094)	(0.0092)
Regional fixed effects	No	Yes
R square of the estimated logit model	0.6398	0.6475
Number of observations	19,440	19,440

Estimated values are marginal effects. Standard errors are in parenthesis.
*** significant at 1% level, ** significant at 5% level, * significant at 10% level

Table 8 : Marginal effects and unemployment rate per region

Region (reference = Abidjan)	Marginal effects	Unemployment rate (in %)
LAGUNES	-0.0013	11.7
	(0.0063)	
HAUT SASSANDRA	-0.0215***	6.2
	(0.0046)	
SAVANES	-0.0093	2.0
	(0.0081)	
VALLEE DU BANDAMA	-0.0105*	5.5
	(0.0054)	
MOYEN COMOE	-0.0239***	5.2
	(0.0062)	
MONTAGNES	-0.0323***	7.3
	(0.0061)	
LACS	-0.0043	4.5
	(0.0069)	
ZANZAN	-0.0157**	1.8

Region (reference = Abidjan)	Marginal effects	Unemployment rate (in %)
	(0.0068)	
BAS SASSANDRA	-0.0041 (0.0053)	9.1
DENGUELE	0.0013 (0.0107)	1.5
N'ZI COMOE	-0.0257*** (0.0077)	5.8
MARAHOUE	-0.0076 (0.0068)	6.0
SUD COMOE	-0.0075 (0.0067)	6.4
WORODOUGOU	-0.0152* (0.0078)	4.4
SUD BANDAMA	-0.0116** (0.0055)	6.4
AGNEBY	-0.0193*** (0.0071)	6.1
FROMAGER	-0.0175** (0.0071)	9.1
MOYEN CAVALLY	-0.0028 (0.0091)	7.6
BAFING	-0.0029 (0.0080)	1.6

Standard errors are in parenthesis. Unemployment rate in Abidjan = 19.5%
*** significant at 1% level, ** significant at 5% level, * significant at 10% level

Figure 1 : Lorenz curve of decent work indicator