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## Results of IFTRAB 2004/2005: Comparing Labor Conditions in Formal and Informal Sector in Sofala



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## Summary

This Text compiles in comprehensive form some results derived from the data of IFTRAB, the “Inquérito Integrado à Força de Trabalho”, a survey carried out in Mozambique nationwide in 2004 and 2005. The data were met at the disposal of the author by courtesy of the “Instituto Nacional de Estatística (INE)” and specifically by the President Dr. João Loureiro and the Vice-President responsible for the areas Demography and Social Statistics Dr. Manuel de Costa Gaspar. The author is deeply obliged to thank INE, Dr. Loureiro and Dr. Gaspar for their support. It should be stated clearly that the author is fully responsible for all shortcomings and errors in the document and that the results are NOT officially authorized or endorsed neither by INE nor by the Provincial Delegation of INE (DPINE) in Sofala. The document is inspired by requests of the private sector economy in Sofala and by the joint Ministry of Industry and Trade (MIC) and GTZ project to promote private sector enterprises in three provinces of Sofala (Manica, Inhambane and Sofala) – APSP- Ambiente Propicio para o Sector Privado, not to mention the curiosity of the author to learn more about the structure of the labor market in Mozambique.

The questions refer to the IFTRAB questionnaire, sometimes the question code (e.g. QI09) to improve reference to the surveys questionnaire. The software SPSS Vers.10.07 was used analyzing the data. The report is split into three sections:

1. A general description of the data investigated in the IFTRAB
2. A questions and answer section referring to pertinent issues concerning the informal sector addressed by GTZ-APSP. The questions which could not be answered analyzing the available data are also stated and the reasons for not being able to answer them are explained
3. Some issues not addressed specifically but seem to be relevant in the context of comparing labor conditions in the formal and informal sector are reported.

Comments and interpretations appear in boxes. The number the results stand for appear in shaded boxes at the **beginning** of each section or selection of tables

## 1 Part: General Description of Data – How is Labor distributed in Sofala

### People interviewed in Sofala:

The following data are derived from 1634 Households / 5602 Individuals interviewed. People interviewed are 7 years or older.

**Table 1.1** *How many were interviewed by District.*

	In Sample% weighted	% Population 2004 (INE Census 1997 projected)
Beira	30.6%	33.7%
Buzi	25.2%	9.5%
Caia	2.9%	5.9%
Chemba	4.4%	2.9%
Cheringoma	0.6%	1.1%
Chibabava	2.6%	4.9%
Dondo	10.8%	10.9%
Gorongosa	3.7%	5.7%
Machanga	3.3%	3.0%
Maringue	2.9%	4.2%
Marromeu	6.6%	5.0%
Nhamatanda	6.3%	0.8%

The data are compared to the 2004 projected Census Data. A projection is a forecast attributing an annual growth ratio. Some areas are over sampled (Buzi, Nhamatanda) some under sampled (Caia, Maringue) but in general the coverage is quite uniform and corresponds to the population size in the districts. [16]

**Table 1.2 How many are working (no matter if Formal or Informal)**

Trabalha	Percentagem
Sim	52.4%
Não	47.6%
Total	100.0%

Data derived from answers QP1 (Did you work during the last 7 days) and QP2 (Are or usually working)

**Table 1.3 Working/ Not Working by Age Groups**

Age groups working: Grupos quinquenais de idade

Trabalha	5 - 9 anos	10 - 14 anos	15 -19 anos	20 - 24 anos	25 - 29 anos	30 - 34 anos	35 - 39 anos
Sim	1.60%	9.00%	13.20%	13.60%	14.90%	11.30%	9.60%
Não	22.60%	26.80%	16.30%	10.80%	5.00%	4.90%	2.90%
Total	11.60%	17.50%	14.60%	12.30%	10.10%	8.30%	6.40%

Trabalha	40 - 44 anos	45 - 49 anos	50 - 54 anos	55 - 59 anos	60 - 64 anos	65 anos e +	Total
Sim	5.50%	6.40%	3.90%	3.30%	3.10%	4.60%	100.00%
Não	2.10%	1.90%	1.50%	1.00%	1.40%	3.00%	100.00%
Total	3.90%	4.20%	2.70%	2.20%	2.30%	3.90%	100.00%

This table has to be interpreted row wise: For example: Of all people working 14.90% fall into the age group 20 –29 years.

**Table 1.4 Age Groups: Working/ Not Working**

Age groups working: Grupos quinquenais de idade

Trabalha	5 - 9 anos	10 - 14 anos	15 -19 anos	20 - 24 anos	25 - 29 anos	30 - 34 anos	35 - 39 anos
Sim	7.20%	26.90%	47.10%	58.10%	76.70%	71.70%	78.60%
Não	92.80%	73.10%	52.90%	41.90%	23.30%	28.30%	21.40%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Trabalha	40 - 44 anos	45 - 49 anos	50 - 54 anos	55 - 59 anos	60 - 64 anos	65 anos e +	Total
Sim	74.00%	78.80%	74.30%	79.00%	71.60%	62.80%	52.40%
Não	26.00%	21.20%	25.70%	21.00%	28.40%	37.20%	47.60%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

This table has to be interpreted column wise: For example: Of all people working between 55 and 59 years 79% are working and 21 % are not.

## Economically Active Population:

The following data are derived from 3973 Individuals interviewed. People interviewed are 15 years or older and 64 or younger. This means the data are valid and representative for 885.444 people by extrapolated Numbers.<sup>1</sup> This is usually called the Economically Active Population. Sometimes the valid cases are less than this number. Valid cases means: valid answers to these questions, the other are omitted (missing)

**Table 1.5 How many are Working, if of Working Age**

Trabalha	Percent
Sim	66.0%
Não	34.0%
Total	100.0%

This means that of those of working age 34% are not working (are unemployed or not exercising any economically productive activity).

Valid Cases for the next two tables: 688.959

**Table 1.6 Whom do they work for (by Numbers)**

	Beira	Buzi	Caia	Chemba	Cheringoma	Chibabava	Dondo	Gorongosa	Machanga	Maringue	Marromeu	Nhamatanda	Total
Governo	10050	3854		1437	1106		2687	1047	490		1839	504	23014
Sector público	3177	332					976	118				225	4828
Sector privado	38753	5307		231	184		11057	118	5394	1284	5370	2117	69815
Conta propria com empregados	7898	8553	1391		184		1912	520	1471		694	1081	23704
Conta propria sem empregados	100872	100991	14330	25430	737	15192	56155	23155	13019	16941	30791	32734	430347
Trabalhador familiar sem remuneração	14746	27555	6475	8529	184	6960	8691	4936	3078	7421	10221	12139	110935
Pessoa/agregado privado	11573	6810		209	184		632	235	490		392		20525
Sector cooperativo							89						89
ONG e outras associações	2901	761			369		1457					214	5702
<b>Total</b>	<b>189970</b>	<b>154163</b>	<b>22196</b>	<b>35836</b>	<b>2948</b>	<b>22152</b>	<b>83656</b>	<b>30129</b>	<b>23942</b>	<b>25646</b>	<b>49307</b>	<b>49014</b>	<b>688959</b>

**Table 1.7 Whom do they work for (by %)**

	Beira	Buzi	Caia	Chemba	Cheringoma	Chibabava	Dondo	Gorongosa	Machanga	Maringue	Marromeu	Nhamatanda	Total
Governo	5.3%	2.5%		4.0%	37.5%		3.2%	3.5%	2.0%		3.7%	1.0%	3.3%
Sector público	1.7%	0.2%					1.2%	0.4%				0.5%	0.7%
Sector privado	20.4%	3.4%		0.6%	6.2%		13.2%	0.4%	22.5%	5.0%	10.9%	4.3%	10.1%
Conta propria com empregados	4.2%	5.5%	6.3%		6.2%		2.3%	1.7%	6.1%		1.4%	2.2%	3.4%
Conta propria sem empregados	53.1%	65.5%	64.6%	71.0%	25.0%	68.6%	67.1%	76.9%	54.4%	66.1%	62.4%	66.8%	62.5%
Trabalhador familiar sem remuneração	7.8%	17.9%	29.2%	23.8%	6.2%	31.4%	10.4%	16.4%	12.9%	28.9%	20.7%	24.8%	16.1%
Pessoa/agregado	6.1%	4.4%		0.6%	6.2%		0.8%	0.8%	2.0%		0.8%		3.0%

<sup>1</sup> A survey usually tries to find out facts for the whole population (e.g. Sofala). Since it would be costly and time consuming to ask all people of Sofala, a **Sample** is selected. If this sample is selected by proper statistical procedures (Random selection, stratification) the results analysing the sample data are considered within limits to represent the facts for the whole of Sofala. Each individual sampled is attributed an extrapolation number, this means that this individual represents (stands for) a larger number in the total population, which is the extrapolation factor, sometimes also called the weight. The projected and estimated population projected in Sofala for 2004 between 15 and 64 is 859.949 [16]

	Beira	Buzi	Caia	Chemba	Cheringoma	Chibabava	Dondo	Gorongosa	Machanga	Maringue	Marromeu	Nhamatanda	Total
privado													
Sector cooperativo							0.1%						0.0%
ONG e outras associações	1.5%	0.5%			12.5%		1.7%					0.4%	0.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

The tables show that 3.3% of the economically active population is working for the Government, 0.7% work for public sector companies (EDM, TDM etc.), 10.1% are employed in the private sector. The biggest Group 62.5% work as self-employed without employees, this comprises subsistence farmers or self-employed fishermen. The data for the Districts are only indicators and not representative.

Although the grouping of data is not fully comparable the data from the 1997 Census [17] show a similar relationship concerning the Private Sector

#### Census 1997/ Sector of Activity in Sofala

Aparelho do estado	5.7%
Sector privado	10.4%
Empresa pública	3.1%
Sector cooperativo	0.1%
Conta própria	58.0%
Trabalho familiar	22.0%
Cooperativista	0.0%
Patrão/ empresário	0.6%
Desconhecido	2.6%

Valid Cases for the next table: extrapolated 688.954 that is 77.8%, 22.2% or 196.490 are missing. Occupations with a **total** percentage of less than 0.2% were omitted (so the percentage add up to less than 100%) only to improve readability of the table

**Table 1.8 Main occupation and Sector of Activity**

Code	Principal ocupação	Para quem trabalha na ocupação principal										Percent	
		Governo	Sector público	Sector privado	Conta própria com empregados	Conta própria sem empregados	Trabalhador familiar sem remuneração	Pessoa /agregado privado	Sector cooperativo	ONG e outras associações			
131	Directores e gerentes de pequenas empresas			1.2%	27.5%	0.1%							1.10%
232	Docentes do ensino secundário e médio	4.8%	2.9%						1.3%			1.0%	0.23%
246	Ministros de culto e membros de ordem religiosa					0.0%						29.7%	0.28%
331	Docente do ensino primário	25.6%	4.7%	0.2%		0.1%							0.94%
343	Profissionais de nível intermédio de gestão e administração	0.8%	1.7%	1.7%									0.21%
411	Secretários e operadores de equipamento de tratamento de inf	7.1%	1.1%	0.4%									0.29%
413	Empregados de aprovisionamento de planeamento e dos transpor	0.5%	3.9%	2.9%									0.34%
421	Caixas, bilheteiros e similares	3.4%	3.0%	0.8%		0.0%							0.22%
512	Económicos e pessoal do serviço de restauração	0.5%		3.9%					2.0%			1.4%	0.48%
514	Outro pessoal dos serviços directos e particulares			0.4%		0.2%	0.2%					10.3%	0.27%
516	Pessoal dos serviços de protecção e segurança	10.9%	2.1%	3.3%								2.1%	0.74%
522	Vendedores e demonstradores			2.9%									0.30%
523	Vendedores de	1.5%		7.1%	19.8%	12.6%	6.5%	1.8%				3.2%	10.47%

Code	Principal ocupação	Para quem trabalha na ocupação principal		Sector privado	Conta própria com empregados	Conta própria sem empregados	Trabalhador familiar sem remuneração	Pessoa /agregado privado	Sector cooperativo	ONG e outras associações	Percent
		Governo	Sector público								
	quiosques e de mercados										
614	Trabalhadores florestais e similares			0.8%		0.3%			100.0%		0.31%
615	Trab.da aquacultura, pescas e caça			6.6%	25.9%	1.9%		0.9%			2.75%
621	Agricultores e pescadores - Agricultura e pesca de subsistência			0.2%	13.8%	80.4%	92.5%	26.4%			66.39%
712	Trabalhadores da construção civil e obras públicas		5.2%	4.4%	4.4%	0.4%		2.5%		1.8%	1.00%
714	Pintores e trabalhadores similares			0.6%		0.2%					0.20%
721	Moldadores, soldadores, bate chapas, caldeiros, montadores			1.2%	0.4%	0.3%					0.31%
722	Forjadores, serralheiros mecânicos e trabalhadores similares			2.3%							0.23%
723	Mecânicos e ajustadores de máquinas		3.0%	3.5%		0.3%	0.2%			1.1%	0.58%
724	Mecânicos e ajustadores de equipamentos electrónicos e eléct	0.4%		1.1%	0.9%	0.2%					0.30%
741	Trabalhadores da preparação e cofessão de alimentos e bebida			2.9%	0.7%	0.5%	0.1%	0.6%			0.67%
742	Trabalhadores das medeiras e similares	0.6%	2.1%	1.8%	1.6%	0.3%		0.4%			0.46%
743	Trabalhadores de texteis e confecções e trabalhadores simila			1.2%	0.3%	0.7%	0.1%				0.57%
832	Condutores de veiculos a motores	2.7%	5.1%	3.3%		0.1%				9.6%	0.58%
913	Pessoal de limpeza, lavadeiros, engomadores de roupa	1.8%	2.4%	1.2%				48.5%		3.9%	1.67%
915	Estafetas, Bagageiros, porteiros, guardas e trabalhadores si	3.9%	14.6%	4.7%				10.5%		9.6%	1.10%
921	Trabalhadores não qualificados da agricultura e pescas			17.8%		0.2%	0.5%	0.9%			2.04%
931	Trabalhadores não qualificados das minas e da construção civ			2.6%		0.0%					0.28%
933	Trabalhadores não qualificados dos transportes		2.1%	3.9%		0.2%		2.7%			0.60%
<sup>2</sup> Total		64.5%	53.9%	84.9%	95.3%	99.0%	100.0%	98.6%	100.0%	73.6%	95.9%

The number of self-employed without employees is highest in 621: Subsistence farmers and fishermen (80%). In the sector Family worker without remuneration this percentage rises to 92.5%. The occupations in the private sector are more equally distributed and have the highest percentage in the group of unqualified workers in agriculture and fishery (921).  
**Groups of occupations according to the system of ILO (International Standard Classification of Occupations ISCO-88).**

<sup>2</sup> The percentages have to be interpreted column wise: Of the 64.5% working in government, 25.6% have an occupation as "Docente do ensino primário". The numbers do not add up to 100% because the occupations with a total of less than 0.2% were omitted to improve readability of the table. The total percentages of the different sectors are found in table 1.7. The last column displays the percentage of people working in specific occupations, for example 10.47% in 523: "Vendedores de quiosques e de mercados"

The number of people in the following tables selected is 1479 (extrapolated 300.631 = not working)

**Table 1.9 Not Working; Are they disposed to work**

	Esteve disponível para trabalhar	Percent
Valid	Sim	15.9%
	Não	27.5%
	Ausente	15.9%
	Total	44.8%
Missing		55.2%
Total		100.0%

Of those who are not working 15,9% are disposed to work. The main reason for not being available was studying. The second most frequent reason was illness.

**Table 1.10 Why are they not disposed to work**

		Porque não esteve disponível para trabalhar	Percent	Valid Percent
Valid	Trabalhos caseiros devido à	Estava a estudar	14.4%	53.1%
		Não estava disposto a pagar empregado	3.0%	10.9%
		Cuidar de pessoas que precisam de ajuda	0.7%	2.5%
		Proibido de trabalhar pelo marido	0.6%	2.2%
	Inválido para o trabalho por ser:	Muito novo	0.5%	1.8%
		Muito velho	1.5%	5.6%
		Doente	3.9%	14.5%
		Incapacitado	0.5%	2.0%
		Reformado	0.7%	2.6%
		Outras	1.3%	4.7%
		Total	27.1%	100.0%
	Missing		72.9%	
	Total		100.0%	



## 2 Part: Questions and Answer about the Informal Labor Sector in Sofala

The first question: What is the informal sector? A simple interpretation according to the sectors indicated by the respondents: Two variables: “which is the Working Sector of the main occupation” and “Is the Company You Work for Registered?” were used to determine Formal/Informal groups on different aggregation levels (2, 6 and 8 groups in different tables):

<b>Selection Criteria: Working Sector / Answer to Question: Is the Company You Work for Registered?</b>	<b>Formal / Informal Groups</b>	<b>Formal / Informal</b>
Governo <b>OR</b> Sector público <b>OR</b> Sector cooperativo <b>OR</b> ONG e outras associações	Setor Formal Público	Setor Formal
Conta própria com empregados <b>AND</b> a Empresa esta registrada	Setor Formal Privado com empregados	
Sector privado <b>OR</b> Conta própria sem empregados <b>AND</b> a Empresa esta registrada	Setor Formal Privado sem empregados	
Conta própria com empregados <b>AND</b> (a Empresa não esta registrada <b>OR</b> the answer to this question missing)	Setor Informal Conta Própria com Empregados	Setor Informal
(Sector privado <b>OR</b> Conta propria sem empregados) <b>AND</b> (a Empresa não esta registrada <b>OR</b> the answer to this question missing)	Setor Informal Conta Própria sem Empregados	
Trabalhador familiar sem remuneração <b>OR</b> Pessoa/agregado privado	Setor Informal Familiar	
Anything else	Missing	Missing

For the following part ONLY those who are working are considered and only those of working age (15-65). This is 2494 persons or extrapolated 584.813

**Table 2.1 Formal and Informal Sector in Sofala**

Setor Informal/Formal	Percent
Setor Formal	15.3%
Setor Informal	84.7%
Total	100.0%

This distinction is refined further, because it was found that People working with “empregados” have clear distinctions from those working without “empregados” Hence there are six different groups (apart from the missing values)

**Table 2.2 Formal and Informal Sector Groups and Salaries in Sofala**

Setor Informal conta propria- privado/Formal privado-publico	Percent	Valid Percent	Cumulative Percent	Valor recebido mensalmente (25 Mtn=1USD)	
				('000 Meticais/MTn)	USD
Setor Formal Público	5.2%	5.4%	5.4%	1383	55
Setor Formal Privado com empregados	1.6%	1.6%	7.0%	48876	1955
Setor Formal Privado sem empregados	7.4%	7.6%	14.6%	2348	94
Setor Informal Conta Própria com Empregados	2.1%	2.2%	16.8%	3641	146
Setor Informal Conta Própria sem Empregados	63.1%	65.1%	81.9%	2510	100
Setor Informal Familiar	17.6%	18.1%	100.0%	890	36
Total	96.9%	100.0%			
Missing	3.1%				
Total	100.0%			5750	230

With this definition the cumulative valid percentage of the formal sector is slightly lower (14.6%) but this discrepancy seems to be valid due to the finer distinctions. Clearly the most numerous group is the self-employed without “empregados”, for instances subsistence farmers and fishermen like indicated in table 1.8. The mean monthly salaries, which appear in this table, are further discussed below.

## Salaries

The questions in a survey about monetary transaction are always tricky. There might be many reasons for the respondents not to tell the truth, usually underestimating the monetary value, more than often fearing fiscal implications. So there is no reason to believe that the answers about the money received for the principal occupation is completely reliable. Nevertheless this is the source of information and although it can be assumed that the actual income will be higher, it is very likely that the relation between different wages is pertinent.

**Table 2.3 Mean of Remuneration received for Sectors**

Para quem trabalha na ocupação principal	Valor recebido semanalmente ('000 Meticais/MTn)		Valor recebido mensalmente (25 Mtn=1USD)	
	Mean	Std. Deviation	('000 Meticais/MTn)	USD
Governo	300	264	1299	52
Sector privado	534	334	2312	92
Conta própria com empregados	5858	20220	25381	1015
Conta própria sem empregados	725	6046	3142	126
Trabalhador familiar sem remuneração	201	195	872	35
Pessoa/agregado privado	170	0	737	29
ONG e outras associações	700	159	3032	121
Total	1417	9474	6141	246

For the following table ONLY those who are working in the informal sector are considered of working age (15-65). This is 1981 persons or extrapolated 495.067. In the table only groups were selected with 5 or more representatives.

**Table 2.4 Mean of Salaries by Occupation Groups in the Informal Sector**

Occupation Groups	Semanal	Mensal USD	Mensal N extrapol.	N absoluto	
131 Directores e gerentes de pequenas empresas	1757	7554	302	1375	10
512 Económicos e pessoal do serviço de restauração	740	3182	127	344	9
514 Outro pessoal dos serviços directos e particulares	594	2555	102	782	8
523 Vendedores de quiosques e de mercados	788	3391	136	48756	311
614 Trabalhadores florestais e similares	277	1191	48	1130	12
615 Trab.da aquacultura, pescas e caça	334	1436	57	9990	27
621 Agricultores e pescadores - Agricultura e pesca de subsistên	289	1243	50	37867	1247
712 Trabalhadores da construção civil e obras públicas	906	3896	156	2105	22
714 Pintores e trabalhadores similares	1017	4372	175	813	6
721 Moldadores, soldadores, bate chapas, caldeiros, montadores	687	2954	118	557	7
723 Mecânicos e ajustadores de máquinas	1454	6252	250	1017	10
724 Mecânicos e ajustadores de equipamentos electrónicos e eléct	937	4027	161	781	6
733 Artesãos de madeira, tecido, couro e materiais similares	97	418	17	546	5
741 Trabalhadores da preparação e cofessão de alimentos e bebida	312	1343	54	2431	20
742 Trabalhadores das medeiras e similares	463	1993	80	1056	7
743 Trabalhadores de texteis e confecções e trabalhadores simila	478	2053	82	2582	16
832 Condutores de veículos a motores	2000	8600	344	302	7
911 Vendedores ambulantes e trabalhadores similares	1255	5394	216	905	9
921 Trabalhadores não qualificados da agricultura e pescas	92	397	16	1074	29
931 Trabalhadores não qualificados das minas e da construção civ	1850	7955	318	115	8
933 Trabalhadores não qualificados dos transportes	205	879	35	804	11
Total	587	2523	101	118319	1787

The table shows mean monthly salaries in MTN and transferred into USD by the rate of 25 MTN to 1 USD. The numbers shown for each group are extrapolated and absolute. The results show that in the Informal sector, “Chapa “ drivers achieve the highest salaries. The most important figures are shown for the major groups 621: “Subsistence Farmers and Fishermen” (50 USD/Month) and 523 “Banca Vendors” (136 USD/Month). However there is a much smaller group o of unskilled Farm Workers (921), which receives a much lower income(16 USD). It is not clear, how the remuneration in kind entered this answer and response. By the question letter, only monetary transactions were recorded. However in the rural area this is only a smaller part of the workers income.

## Security and Benefits

175 (48092 extrapolated) persons, who were working, answered questions about Security and Benefits (Tables 2.5-2.9) . Only People between 7-17 of age working in any sector were asked these questions. Nevertheless the behavior of employers might not differ very much from other age groups of employees? The data are valid for those of this age group and working

**Table 2.5 How are they paid**

Como e pago	Setor Formal	Setor Informal	Total
Por dia		12.6%	5.9%
Por mês	81.5%	55.3%	69.4%
Outro		17.3%	8.0%
Sem inf.	18.5%	14.8%	16.8%

Total	100.0%	100.0%	100.0%
Valid		Missing	
N	Percent	N	Percent
	4307	9.0%	43785 91.0%

Notice the high number of Missing values (91%), but this is due to the fact that only adolescents between 7 and 17 years of age gave these answers.

If we compare two variables like use of safety equipment and Formal/Informal Sector, we would like to find out if the two are independent: That is, the use of safety equipment in Formal and Informal Sector is the same. For this Statistical Tests are used, see in Footnote.<sup>3</sup>

**Table 2.6 Are others doing the same work using safety equipment**

Outros usam equipamento de projeção	Sim	Não	Trabalha sozinha	Total
Setor Formal Privado sem empregados	30.1%	69.9%		100.0%
Setor Informal Conta Própria sem Empregados	2.2%	62.5%	35.4%	100.0%
Setor Informal Familiar		88.4%	11.6%	100.0%
Total	2.1%	83.2%	14.6%	100.0%

  

Chi-Square Tests	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10601.51	4	0

According to this calculation the use of safety equipment and professional groups are not independent

The following two tables 2.7-2.8 compile the results of multiple answers, no  $\chi^2$ -Test was calculated, but differences are straightforward.

**Table 2.7 Who paid for the medical treatment**

Percent	Setor Formal Privado	Setor Informal Conta Propria	Setor Informal Familiar	Total
Não fez nenhum tratamento		42%	32%	31%
Patrão	100%			12%
Familiares/encarregados		23%	57%	41%
Própria		35%		10%
Gratuito			11%	7%
Total	100%	100%	100%	100%

One notices that only in the Private Formal sector the company (Patrão) paid any medical expenses.

**Table 2.8 Which safety equipment do you use while working?**

Percent	Setor Formal Privado	Setor Informal Conta Propria	Setor Informal Familiar	Total
Capacete	11.6%			0.9%

<sup>3</sup> Question: can it be assumed that the dependent variables are independent of the income/employment groups. For this the cross tabulations test the Hypothesis  $H_0$  with a  $\chi^2$ -Test: The two groups answer independently that is, a different group does not have any effect on the answers. The tables are easy to analyse: if the significance is very low (e.g. 0.000) than this Hypothesis can be rejected, this is: belonging to a different group has made a difference: A higher value of more than 0.25 means there is no evidence in the data that respondents belonging to different groups respond in a different way. A simple Pearson Coefficient is used to analyse this relationship, Yates' corrected chi-square is computed for all other 2x2 tables or having missing rows or columns.

Percent	Setor Formal Privado	Setor Informal Conta Propria	Setor Informal Familiar	Total
Calçado especial	23.1%		2.7%	3.9%
Luvas	11.6%			0.9%
Nenhuma	53.7%	100.0%	97.3%	94.4%
Total	7.7%	15.5%	76.8%	100.0%

No safety equipment is used in the Informal Sector working on own account. In the Private informal Sector a very small percentage uses Special Trousers. If there is no value, it means that this group has not responded to this question

There is no question and information in the Survey about leave benefits.

## Working Hours

Concerning the responses about working hours, we have a similar problem as with salaries. Because these figures are given by the respondents themselves, rarely will people estimate the working hours correctly, either overestimating them, like probably working for Government, mistaking their net working hours with their compulsory working hours or maybe underestimating them for different and various reasons. Nevertheless this is the source of information and although it can be assumed that the actual working hours will differ, we will publish them asking the reader to consider the results with caution

2994 (584813 extrapolated) persons (15-65 years of age) , who were working, answered questions about Working Hours

**Table 2.9 How many working hours**

Para quem trabalha na ocupacao principal	Media de horas por dia (7 days/week)	Media de horas por dia (6 days/week)
Governo	6.4	7.4
Sector público	6.5	7.6
Sector privado	7.5	8.8
Conta própria com empregados	5.6	6.5
Conta própria sem empregados	5.5	6.4
Trabalhador familiar sem remuneração	4.7	5.5
Pessoa/agregado privado	8.5	9.9
Total	5.8	6.7

**Table 2.10 How many working hours by Formal/Informal Sector**

Sector	Media de horas por dia (7 days/week)	Media de horas por dia (6 days/week)
Setor Formal Público	6.3	7.4
Setor Formal Privado com empregados	5.6	6.6
Setor Formal Privado sem empregados	7.5	8.8
Setor Informal Conta Própria com Empregados	5.7	6.7
Setor Informal Conta Própria sem Empregados	5.6	6.5
Setor Informal Familiar	5.5	6.4
Total	5.8	6.7

Taking the remarks above into consideration, people working in the informal sector seem to work less than in the formal sector. The assumption that the means of working hours differ significantly is supported by a One-Way Analysis of Variance analysis.

### 3 Part: Comparison of Groups and Discrepancies.

There are some additional statistics reported not addressed specifically in the 2. Part but seem to be relevant in the context of comparing labor conditions in the formal and informal sector

2994 (584813 extrapolated) persons (15-65 years of age) , who were working, were analyzed in the following tables

There is a rough distinction between formal and informal sector, where all who are working in a registered company and those who are working in: Governo, Sector Público, Sector Cooperativo and ONGs are considered to be employed in formal sector, all others who are working and do not fall into this group are supposed to work in the informal sector. (This is a variable with a two value distinction: Formal/ Informal + Missing )

This distinction is refined further, because it was found that People working with “empregados” have clear distinctions from those working without “empregados” (This is a variable with a six value distinction: Formal Publico, ..Privado com empregados, ..Privado sem empregados. / Setor Informal.Conta Própria com Empregados, ..Própria sem Empregados, ..Informal Privado + (Missing) )

**Table 3.1 How many are Working in the Different Sections**

Setor Informal conta propria- privado/Formal privado-publico	Percent	Valid Percent	Cumulative Percent
Setor Formal Público	5.1%	5.3%	5.3%
Setor Formal Privado com empregados	1.6%	1.6%	6.9%
Setor Formal Privado sem empregados	7.3%	7.5%	14.5%
Setor Informal Conta Própria com Empregados	2.2%	2.2%	16.7%
Setor Informal Conta Própria sem Empregados	63.3%	65.3%	82.0%
Setor Informal Familiar	17.4%	18.0%	100.0%
Total	96.9%	100.0%	
Missing	3.1%		
Total	100.0%		

The cumulative valid percentage of the formal sector is slightly lower (14.5%) but this distinction seems to be valid due to the finer distinctions. Clearly the most numerous group is the self-employed without “empregados”, for instances subsistence farmers and fishermen.

The group: “Setor Informal Conta Própria sem Empregados” has been split up into the most frequent occupations: Vendors and Subsistence Farmer/Fishermen and Others

**Table 3.2 How many are Working in 8 Different Groups and Urban/Rural Differences**

	Urbano	Rural	Total
Setor Formal Privado com empregados	2.0%	1.6%	1.7%
Setor Formal Privado sem empregados	17.1%	2.9%	7.9%
Setor Informal Conta Própria com Empregados	2.3%	2.4%	2.4%
Setor Informal Conta Própria SE Outras	14.0%	5.3%	8.3%
Setor Informal Conta Própria SE Bancas	17.7%	3.8%	8.8%
Setor Informal Conta Própria SE Agric/Pesca	30.0%	63.9%	51.9%
Setor Informal Familiar	16.9%	20.2%	19.0%
	100.0%	100.0%	100.0%

The results differ significantly for the subsistence farmers (much higher in rural areas) and Vendors (higher in urban areas). The formal employers are more frequent in urban areas

For a group comparison, the salaries are recoded into groups (These are the quartiles of monthly wages):

Low	Below 520 MTn/month
Medium Low	Between 520 and 1299 MTn/month
Medium High	Between 1299 and MTn/month
High	Above 3464

**Table 3.3 Salaries in 2 Sectors and Income Groups (%)**

	Total por Mes em Grupos				Total
	Rem.Baixa	Rem.Med.Baixa	Rem.Med.Alta	Rem.Alta	
Setor Formal	8.3%	4.3%	14.9%	<b>72.5%</b>	100.0%
Setor Informal	26.7%	26.9%	26.4%	<b>20.0%</b>	100.0%
Total	25.1%	24.9%	25.4%	24.5%	100.0%

**Table 3.4 Salaries in 6 Sectors and Income Groups (%)**

	Total por Mes em Grupos	Rem.Baixa	Rem.Med.Baixa	Rem.Med.Alta	Rem.Alta	Total
Setor Formal Público	%	39.4%	31.2%	24.2%	5.1%	100.0%
Setor Formal Privado com empregados	%	2.9%		9.7%	87.4%	100.0%
Setor Formal Privado sem empregados	%	16.4%	9.5%	46.1%	28.1%	100.0%
Setor Informal Conta Própria com Empregados	%	1.9%	36.7%	34.3%	27.2%	100.0%
Setor Informal Conta Própria sem Empregados	%	28.7%	26.2%	25.3%	19.7%	100.0%
Setor Informal Familiar	%	44.7%	24.2%	31.2%		100.0%
Total	%	25.4%	25.0%	25.3%	24.3%	100.0%

Chi-Square Tests	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	28637.61	15	0

According to this calculation and not surprisingly, income distribution and professional groups are interdependent. Whereas, as shown in table 3.3., in the Formal Employment sectors 72.5% of workers earn more than 1299 MTn per month, only 20% do so in the informal sector (numbers in fat).

**Table 3.5 How many working hours in Groups**

Percent	<= 3.4	>3,4 & <=5.7	>5.7 & <=7.1	> 7.1	Total
Setor Formal Público	17.4%	16.0%	39.4%	27.3%	100.0%
Setor Formal Privado com empregados	36.8%	7.7%	25.3%	30.2%	100.0%
Setor Formal Privado sem empregados	3.1%	11.1%	32.0%	<b>53.8%</b>	100.0%
Setor Informal Conta Própria com Empregados	26.2%	12.1%	39.4%	22.3%	100.0%

Percent	<= 3.4	>3,4 & <=5.7	>5.7 & <=7.1	> 7.1	Total
Setor Informal Conta Própria sem Empregados	25.5%	27.1%	23.6%	23.8%	100.0%
Setor Informal Familiar	28.8%	27.9%	15.8%	27.5%	100.0%

  

Chi-Square Tests	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	40977.27	15	0

Obviously the number of working hours is also interdependent with the sector of occupation, the high percentage of the employees in the formal sector with long working hours stand out (53.8%)

## Conclusions

The most obvious findings are: 1. There is more informal occupation in Sofala. 2. Labor Conditions in these Sectors are very different: Higher Salaries and better Protection are found in the Formal Sector but People who work there seem to have to work more hours for these benefits.



## 4. Literature

### Links:

Statistics: Standard Textbook or

[L1] [http://en.wikipedia.org/wiki/Inferential\\_statistics](http://en.wikipedia.org/wiki/Inferential_statistics)

IFTRAB

[L2] [http://www.ine.gov.mz/inqueritos\\_dir/iftrab/ftrab](http://www.ine.gov.mz/inqueritos_dir/iftrab/ftrab)

Labour statistics:

[L3] <http://www.ilo.org/public/english/bureau/stat/portal/index.htm>

- [1] SPSS 10.0 Manuals - SPSS Inc. Headquarters, 233 S. Wacker Drive, 11th floor Chicago, Illinois 60606
- [2] SPSS 10.0 Regression Models ISBN 0130179043
- [3] SPSS 10.0 for Windows Student Version ISBN 0130280402
- [4] Discovering Statistics Using SPSS for Windows : Advanced Techniques for Beginners (Introducing Statistical Methods series) by Andy Field (Paperback )
- [5] How to Lie With Statistics by Darrell Huff, Irving Geis
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