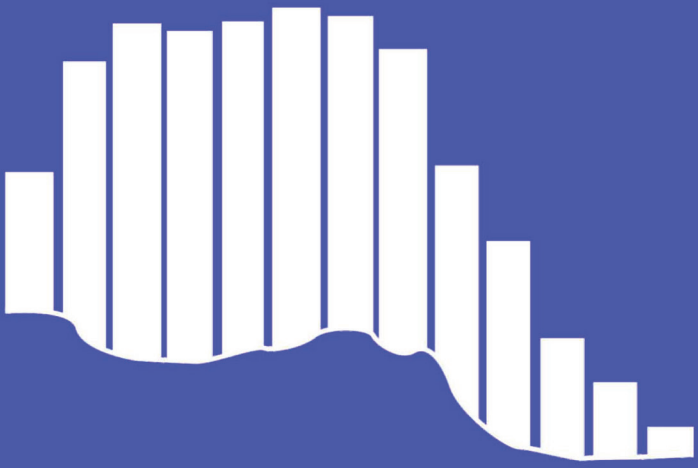
SECRETARIAT OF STATE FOR YOUTH AND LABOR

NATIONAL DIRECTORATE OF LABOR MARKET INFORMATION

ENTERPRISE AND SKILLS SURVEY 2017



Observatório do Mercado de Trabalho Nacional

Australian Aid

This report has been produced by the National Directorate of Labour Market Information, Secretariat of State for Youth and Labour, with technical support from the Australian Government-funded Workforce Development Program Timor-Leste

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ABBREVIATIONS AND ACRONYMS

BAS	Business Activity Survey
DNIMT	Diresaun Nasionál ba Informasaun Merkadu Traballu (the National Directorate of Labour Market Information).
ESS	Enterprise and Skills Survey
IADE	Instituto de Apoio ao Desenvolvimento Empresarial (Institute for Business Development Support)
ISIC	International Standard Industrial Classification
NEC	Not Elsewhere Classified
SEJT	Sekretaria de Estadu ba Juventude no Traballu (Secretariat of State of Youth and Labour)
SERVE, IP	Serviço de Registo e Verificação Empresarial, Instituto Públiku (Service for Registration and Verification of Entrepreneurs, Public Institute)
TVET	Technical Vocational Education and Training
WDPTL	Workforce Development Program Timor-Leste

PREFACE

The Secretariat of State for Youth and Labour (SEJT), through the National Directorate of Labour Market Information (DNIMT) is pleased to present the 2017 Enterprise and Skills Survey (ESS 2017). The main objective of the ESS is to identify skills demanded by the enterprises and industries in the labour market of Timor-Leste. The 2017 ESS field data collection was conducted by researchers from the National Directorate of Labour Market Information, over a period of three months from June to August 2017.

This report builds on the Enterprise and Skills Survey of 2016. The data and main indicators are generally comparable and aim to construct time-series data that can be analysed over an extended period. Indicators such as employers, employees, vacancies, future recruitments, hard-to-fill vacancies, monthly salary, workers training, and other information are reported in the same format as the ESS 2016.

The report shows that the three main economic sectors that employed more workers were construction; wholesale and retail trade, repair of motor vehicles and motorcycles; and accommodation and food services.

SEJT will continue to disseminate the results of the ESS to the public and other relevant stakeholders. Through DNIMT there will be local briefings and we will seek your input in developing effective employment and training policies to build our workforce. As always, SEJT would like to thank all the businesses and other stakeholders that participated in this survey. I would also like to thank the Ministry of Planning and Finance through the General Directorate for Revenue and General Directorate for Statistics and Institute for Business Development Support (IADE) and SERVE, IP for contributing to the survey. On-going cooperation in the future will be vital to improving the accuracy of the survey.

Finally, I would also like to thank the Australian Government-funded Workforce Development Project Timor-Leste (WDPTL) for the technical support provided for the implementation of this survey.

Nívio Leite Magalhães
Secretary of State for Youth and Labour

EXECUTIVE SUMMARY

This 2017 update to the 2016 Enterprise and Skills Survey helps us understand how the labour market in Timor-Leste is developing over time. It is based on a multi-stage stratified sample of enterprises, with extrapolation based on the total number of registered business in the country. The field research was carried out by SEJT staff between June and August 2017, using tablets to administer the survey.

The 2017 Enterprise and Skills Survey (ESS) is presented as an update of the 2016 ESS, and highlights the changes observed since the previous ESS. This shorter report, should be read in conjunction with the 2016 Enterprise and Skills Survey which is available by email from jeniferantoniopui@gmail.com

Enterprise and employee profiles

The survey results show a modest growth in enterprises and about 3.7% growth in employment from January 2016 to October 2017. There were 5,229 enterprises in operations in the business sector of the economy, engaging a total of 68,256 employees. Though 58% were micro enterprises with less than 10 workers, there is a trend towards larger enterprises, with average number of employees growing from 12.6% to 13.1%. The data suggests a slight decrease in foreign ownership, but as the results were not statistically significant, they are not presented here.

Total number of enterprises	Total number of employees	Micro enterprises (<10 employees)	Enterprises located in Dili
5,229	68,256	58%	60%

Two branches of economic activity continued to dominate the business sector in Timor- Leste. More than one-third of enterprises were either in construction or in wholesale and retail trade, repair of motor vehicles and motorcycles.

Construction continues to dominate the economy, with a slight rise in proportion of enterprises in the sector from 35% to 38%. Wholesale and retail trade, repair of motor vehicles and motorcycles dropped from 31% to 25%, while accommodation and food rose from 13% to 18%.

Note that as this is an enterprise focused survey, it does not capture subsistence farmers or 'own account' workers, a substantial proportion of the labour force in Timor-Leste.

Location of enterprises

	2016		2017	
	Enterprises	Employees	Enterprises	Employees
Dili	74%	84%	60 %	69 %
Municipalities	24%	16 %	40 %	31 %

The data suggest a sharp shift of business and employment from Dili to the municipalities (though expected hiring in 2018 is predominantly in Dili). This may reflect the dominance of the construction sector providing employment outside of Dili. The survey team also experienced relatively lower response rates in Dili, which may skew the data in favour of the municipalities.

Total number of employees	Female employees	Foreign employees	Temporary employees
68,256	16,428	6,465	Not asked in 2017
100%	24%	9%	

Female participation in the labour force remains low, with less than a quarter of jobs held by women. There was an increase in foreign employment of about 800 jobs, though there is only a very weak correlation between rising wages in occupational groups and foreign hires.

The size of enterprises is growing, and there is a positive outlook with many enterprises expecting to increase hiring in 2018. About two-thirds of employment growth comes from growth of existing firms, which suggests that support to enterprises to grow and expand should not be ignored in favour of creating new enterprises, though this is also important.

Employees enjoyed on average a 10% increase in wages in 2017, to USD 256, whereas average wages had remained static since 2014.

Conducting the survey

SEJT is developing a system to conduct an update of the ESS on an annual basis, using tablets for data collection to improve the accuracy and speed of data collection. Several challenges persist in conducting this survey, such as getting base data from other government agencies (in particular SERVE, IP and Taxa Impostu) to construct an accurate sampling framework, difficulty in locating enterprises, the stop-start nature of many enterprises during the year, and insufficient financial and human resources to conduct the field work and subsequent analysis.

1. INTRODUCTION

The 2017 Enterprise and Skills Survey builds on the ESS of 2009, 2014 (January and October), and 2016. The 2017 ESS serves as an update of the 2016 ESS. In general, this report will only highlight differences observed in the data, along with some interpretation of the changes.

The main purpose of the Enterprise and Skills Survey (ESS) is to measure the evolution of labour demand and skill needs across different sectors of the economy. The data provide crucial information for policy formulation and development of the education system and in particular the vocational training programmes of the country. In addition, the survey provides information on vacancies and recruitment and separation patterns in key occupations as well as the future demand for labour in different occupations and branches of economic activity.

As with any sample-based survey, the data presented here are extrapolated from the survey data, and as such are estimates of the real situation plus or minus margins of error. See (p 29) for further detail. In some cases, low response rates have led to small sample sizes, so care must be taken in extrapolating from them. Also, the poor quality of data obtained from other government departments on the number of registered enterprises, reduces the accuracy of the sample taken.

DNMIT plans to conduct updates to the ESS each year, with major review every five years. To reduce the time and cost in administering the survey, a maximum of 6 municipalities outside Dili will be surveyed each year on a rolling basis to provide sample data for Outside Dili. The use of tablets and the QuickTap survey software will also help streamline this process.

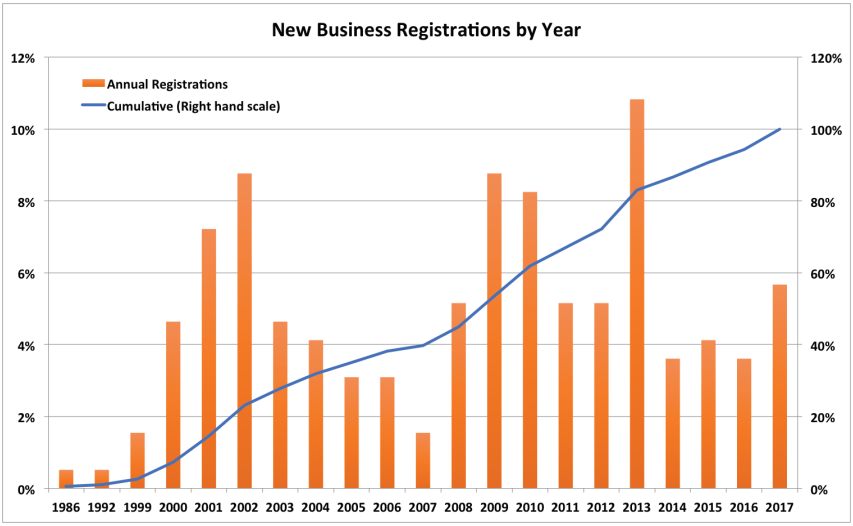
2. ENTERPRISE AND EMPLOYEE PROFILES

This section looks at the number, distribution, size and employee profiles of enterprises registered with SERVE, IP.

Years of registration of enterprise

The ESS 2017 survey estimates 3,870 new business registered (a significant increase on 2,463 in 2016), which correspond to about 6% of all business in operation currently.

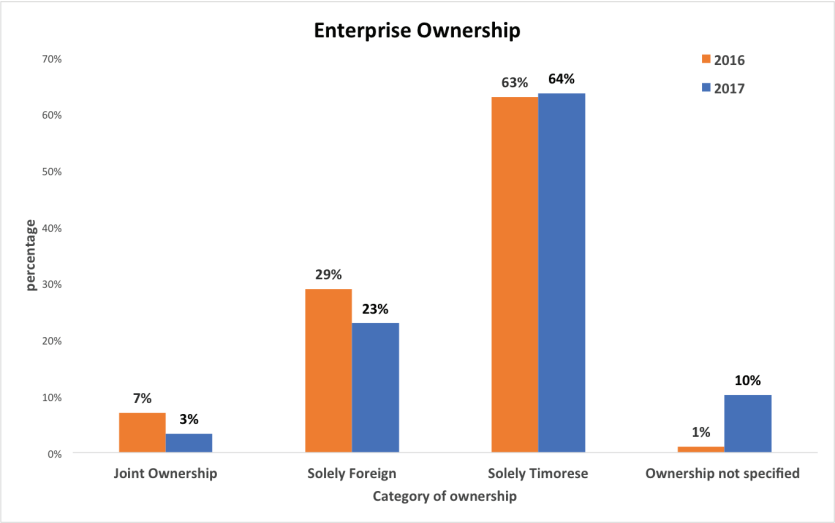
The bars in the graph below shows the percentage of active business registered by year on the left-hand scale, and the line represents the cumulative registrations to date on the right-hand scale.



The big year-on-year fluctuations suggest a 'boom and bust' business cycle in Timor-Leste.

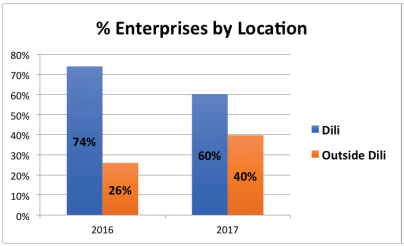
Timorese and foreign ownership

The survey does not demonstrate a significant change in patterns of ownership by Timorese or foreigners between 2016 and 2017. There is a rise in "Ownership not specified" in 2017 to 10%, so direct comparisons with 2016 are difficult to make.

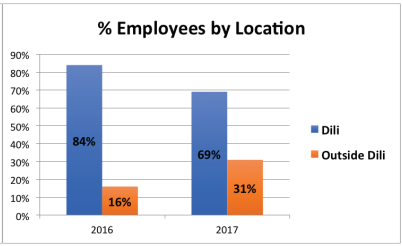


Location and size of enterprise

3a. Enterprises by location



3b. Employees by location



It is encouraging to see more balanced growth across the country, with the number of enterprises outside of Dili rising by about 50% and the associated employment by about 100%.

Nonetheless, 69% of employment remains in Dili, which only accounts for 22% of the population[1].

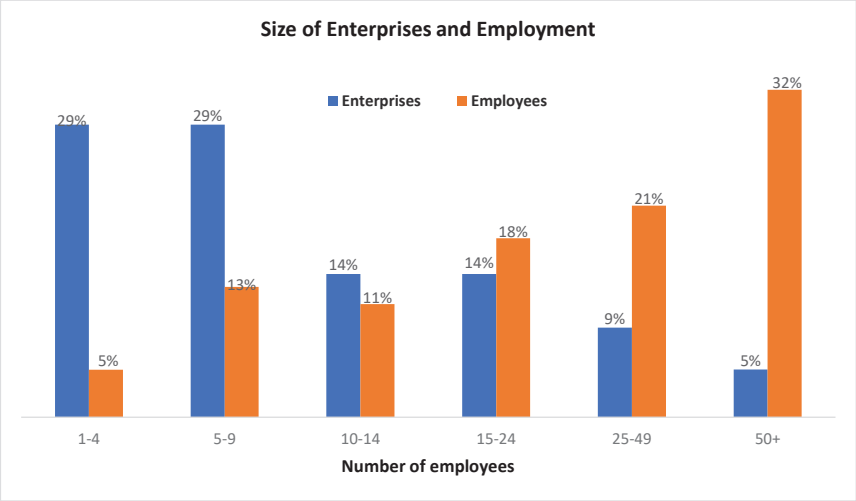
[1] Population and Housing Census 2015, Preliminary Results

Enterprises and employees by size of enterprise

Overall there appears to be a shift to more employment in larger enterprises, which may be a sign of the business environment in Timor-Leste maturing.

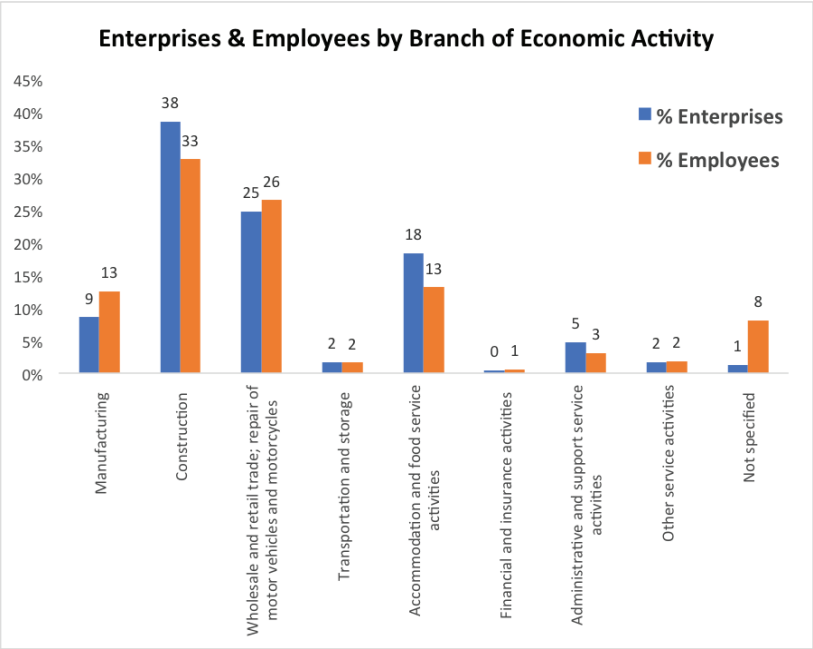
In 2017, 28% of enterprises had 15 or more employees, accounting for 71% of all employment.

By comparison, in 2016 13% of enterprises had 15 or more employees, accounting for 56% of all employment.



Branch of economic activity

The diagram below suggests growth in the manufacturing, accommodation and food service, and to a lesser extent in construction.

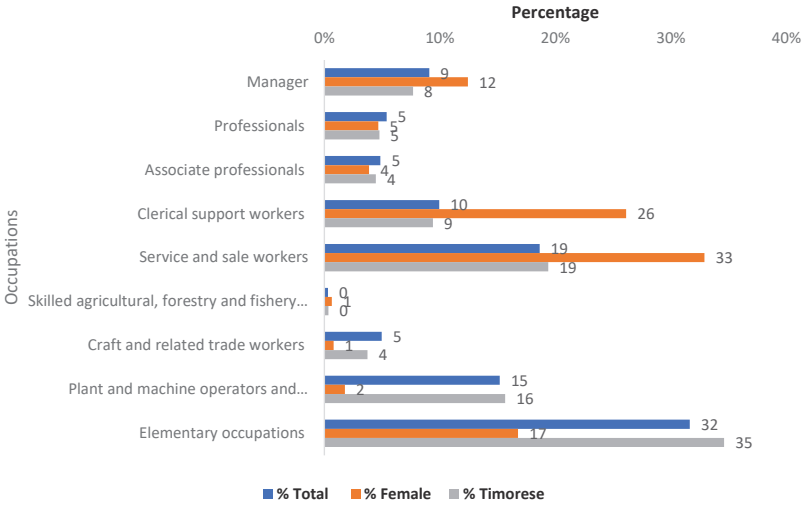


Occupation, sex and foreign and local employees

There are no significant changes in the spread across occupational categories compared to 2016.

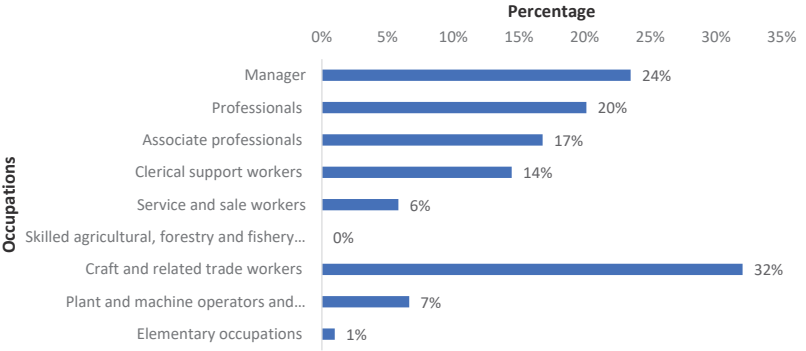
The table below shows the percentage breakdown across occupational categories (eg 9% of all employees were managers, and 12% of female employees were managers). Each category (total, female and Timorese) totals to 100% across all occupations.

Employees (Total, Female and Timorese by occupational category)



For each occupation category, the table below shows how many are estimated to be foreigners (eg 24% of all managers). Hence the total across all occupations does not equal to 100%.

Percentage of foreign workers employed in each occupational category



The data suggest a small percentage increase in foreign employees, plus the overall growth in employment means the number of foreign employees has grown by about 800 to a total of 6,465 (representing 9% of the total workforce).

The large reported increase in Craft and related trade workers (from 12% to 32% in 2017) is hard to explain. If many employees have been incorrectly included in this classification, it will also skew the other data, resulting in an under-estimation of other categories. The classification of occupations by enumerators who carried out the survey may need to be re-examined to ensure accuracy.

Average wages of employees

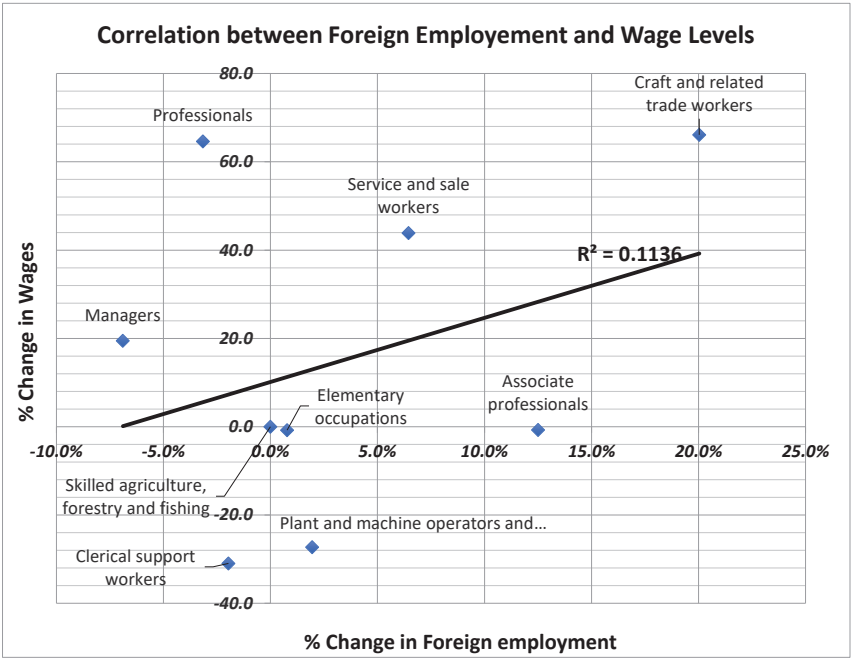
The average wages of employees have risen by 10% from USD 233 to USD 256 per month in 2017, having remained static since 2014.

There is a large increase in reported wages for Professionals (65%), Sales and Service workers (44%) and Managers (19%). Part of this is related to a few outliers in the data of individuals with very high reported salaries.

Note also that the average wages reported for managers dipped in January 2016 to US$ 452 and in 2017 has returned to the same level of USD 540 reported in October 2014.

The increase in Craft and Related Trades Workers may reflect misclassification in that category as discussed above.

There is a weak correlation ($R^2 = 0.11$) between the increase in foreign workers and wages by occupational group. Removing 'Craft and related trade workers', an outlier which may be a result of poor data classification, would further weaken this correlation.


Correlation between Foreign Employement and Wage Levels
80.0
60.0
40.0
20.0
0.0
-20.0
-40.0
-10.0%
-5.0%
0.0%
5.0%
10.0%
15.0%
20.0%
25.0%
% Change in Wages
% Change in Foreign employment
Professionals
Craft and related trade workers
Service and sale workers
R² = 0.1136
Managers
Associate professionals
Elementary occupations
Skilled agriculture, forestry and fishing
Plant and machine operators and...
Clerical support workers

3. VACANCIES AND HIRING PRACTICES

Vacancies

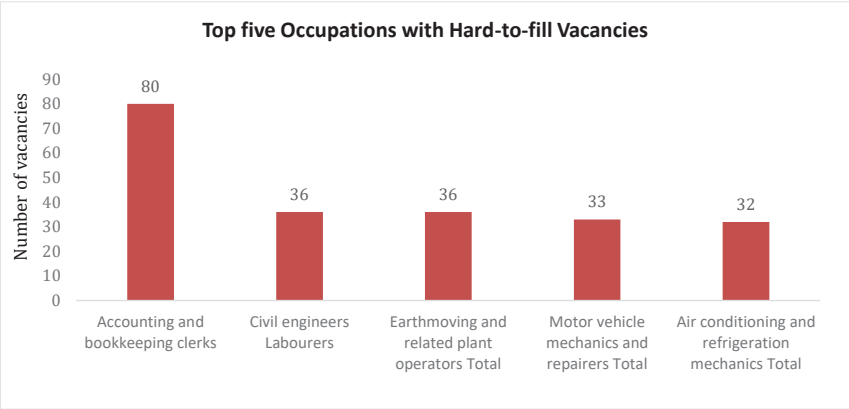
Construction (60%) and retail (22%) continue to dominate the sectors with reported vacancies.

The top occupations in demand remain broadly the same, with the inclusion of Human Resource Manager and Administrative and Executive Secretaries being included in the top occupations, perhaps reflecting the increased size of enterprises as noted above.

Top fifteen occupations with current vacancies and vacancy ratios					
ISCO-08	ISCO description	Number of enterprises with vacancies	Number of vacancies	Number of employee jobs	Vacancy ratio per 100 employee jobs
9313	Building construction labourers	168	1344	11433	12
8342	Earthmoving and related plant operation	106	924	238	388
5221	Shop keepers	21	450	817	55
5230	Cashiers and ticket clerks	90	315	510	62
8332	Truck and Lorry driver	45	315	204	154
9312	Civil Engineering labourers	252	252	1361	19
5223	Shop sales assistants	135	180	12351	1
5120	Cook	106	148	1055	14
4311	Accounting and bookkeeping clerks	80	80	8438	1
7231	Motor vehicle mechanics and repairers	64	64	5444	1
5414	Security Guards	40	60	1021	6
7127	A/C and refrigeration mechanics	40	40	476	8
7115	Carpenter and Joiners	27	36	170	21
3343	Administrative and Executive Secretaries	20	20	170	12
1212	Human Resource Manager	20	20	34	59
	Total	**1232**	**4266**	**68256**	**6**

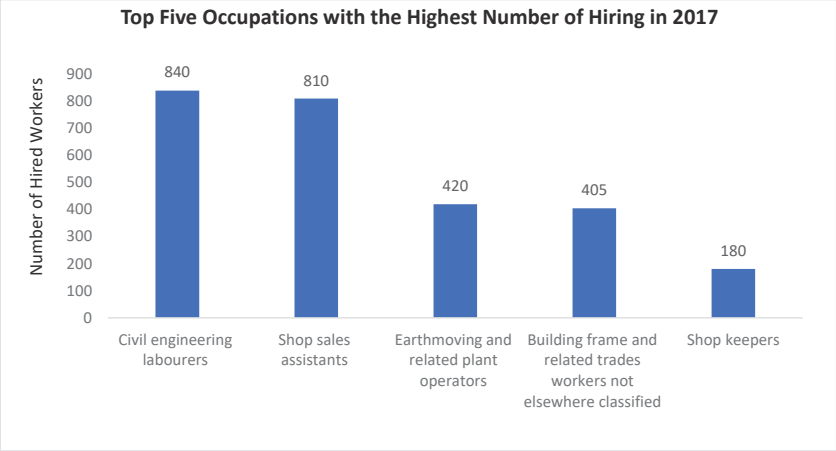
Hard-to-fill vacancies

Three of the top five remain the same as 2016, with the addition of Earth Moving Operators and Air Conditioning Mechanics in 2017, replacing Cooks and Travel Guides from 2016.



Hiring practices

The number of new hires in 2017 reflects the dominance of the construction and retail sectors noted above.



The demand for these skills is reflected in both the hard-to-fill vacancies and the hiring of foreign workers. Occupations with the highest number of hiring of foreign workers are:

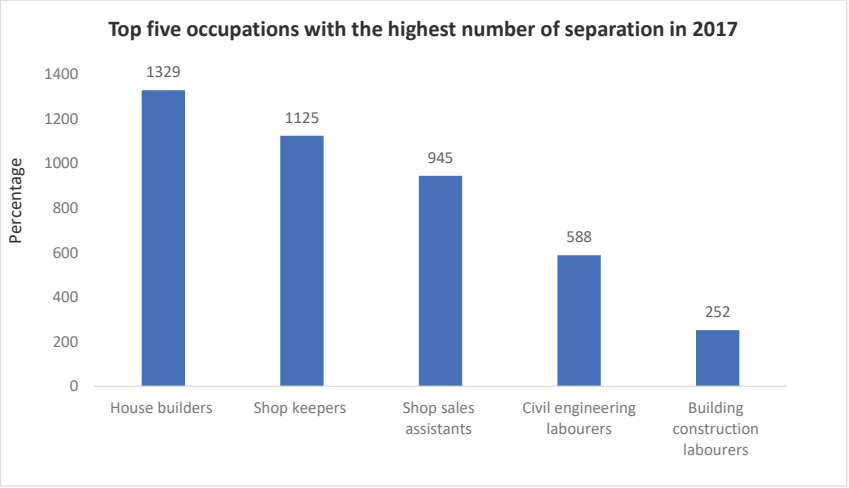
Civil engineers	168
Earthmoving and related plant operators	84
Motor vehicle mechanics and repairers	16

Separations

The survey results show that there were in total 6210 separations involving 2717 enterprises in 2017. The comparison of this result with the total number of newly recruited in 2017 (6447) indicates an excess of hiring over separation, however lower than the previous year.

Total number of recruited in 2017	6447 employees
Total number of separations in 2017	6210 employees
Net increase	237 employees

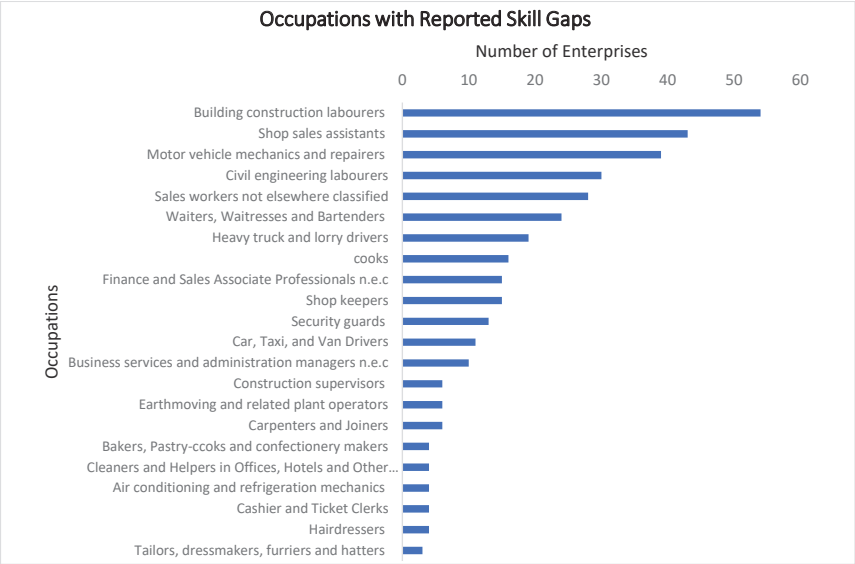
The diagram bellow shows the top five occupations with the highest number of separations in 2017. The occupation with the highest number of separations in 2017 was house builder (1329 separations). This high rate of separation is likely due to the temporary and short-term nature of construction projects. Other occupations with high rates of separation include shop keepers (1125), shop sale assistant (945), civil engineers (588) and building construction labourers (252). It is important to note that almost half of these are construction related occupations.



4. SKILL GAPS AND TRAINING NEEDS

Skills gaps

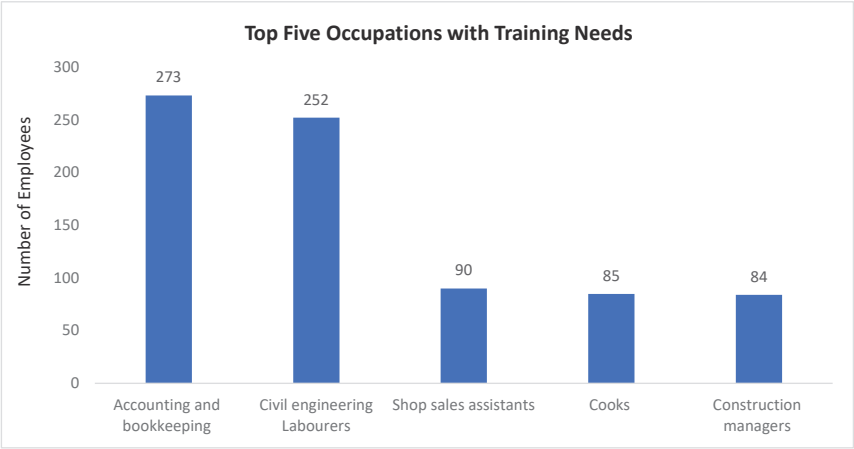
Employers were asked to specify the occupations (up to five) in which they found their employees not performing at the required level. Most skills gaps were reported to be in the dominant sectors of construction, retail, and automotive.



Note 1: n.e.c = not elsewhere classified

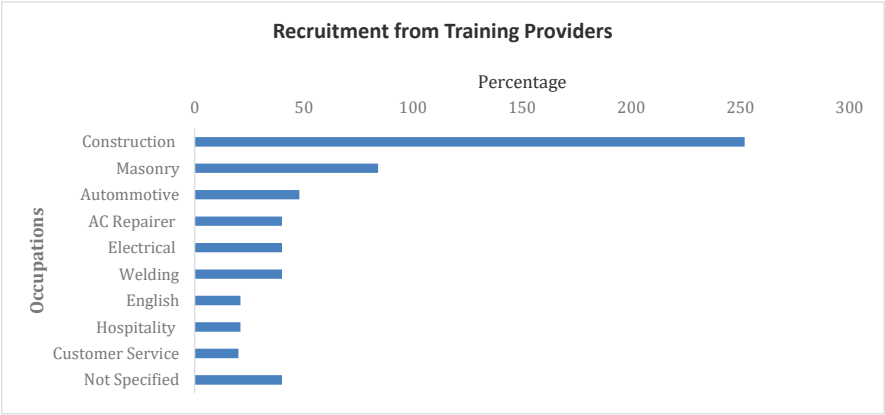
Training needs

The top occupation with reported training needs is accounting and bookkeeping involving 273 employees, followed by civil engineering labourers (252 employees), shop sales assistants (90), cook (85) and construction managers (84). It is important to note that accounting and bookkeeping have been reported in the top five occupations with training needs since 2016.



Direct recruitment from training providers

The chart below shows those occupations where enterprises reported recruiting directly from TVET providers. It shows that enterprises are most likely to recruit directly for construction and masonry. This is followed by automotive, AC repairer, electrical, and welding. This is a significant change of demand in comparison to ESS 2016 where the most recruited area from TVET providers was electrical.



5. HIRING INTENTIONS AND JOB FLOWS

Hiring intentions

The survey results show that around 83.6% or 4372 out of 5229 enterprises expect to maintain their current number of staff in the next 12 months. Only 837 enterprises (16%) expect to increase the number of workers, while a small number of enterprises (0.4%) expect that the number of workers in their enterprises will decrease. Similar analysis can be done for each breakdown by branch of economic activities and size of enterprises.

Index of rate of change of labour demand of the business sector in the next 12 months by location, branch of economic activity and size of enterprises

	Total	X			P+	P-	I
		I	0	-1			
Location	**5229**	**837**	**4372**	**20**	**16.0%**	**0.4%**	**15.6%**
Dili	3287	713	2556	18	21.7%	0.5%	21.1%
Other Municipalities	1942	124	1816	2	6.4%	0.1%	6.3%
Branch of Economic Activity	5229	837	4372	20	16%	0%	15.6%
Accommodation	828	18	809	1	2%	0%	2.0%
Automotive	274	12	261	1	4%	0%	4.0%
Construction	1545	73	1466	6	5%	0%	4.3%
Manufacture and other industrial activities	203	52	147	4	25%	2%	23.5%
Other services	576	27	547	2	5%	0%	4.3%
Wholesale, resale services and automotive	1230	82	1142	6	7%	0%	6.2%
Size of enterprise	5229	837	4372	20	16%	0%	15.6%
1 to 4 workers	1220	86	1131	3	7%	0%	6.8%
5 to 9 workers	1220	234	981	5	19%	0%	18.8%
10 to 14 workers	598	99	497	2	16%	0%	16.2%
15 to 24 workers	598	186	410	1	31%	0%	31.0%
25 to 49 workers	374	37	336	1	10%	0%	9.6%
50 + workers	199	112	87	1	56%	1%	55.5%
Not Specified	1021	84	930	7	8%	1%	7.5%

Intended number of hiring

Expected change in number of employees in the business sector in the next 12 months by location, branch of economic activity and size of enterprise					
	Total	**Expected increase**	**Expected decrease**	**Expected change**	**%**
Timor-Leste	**68,256**	**5,856**	**79**	**5,777**	**8.5%**
Dili	50,556	5,788	78	5,710	11.3%
Not Dili	17,700	68	1	67	0.4%
Branch of Economic Activity	68,256	5,856	79	5,777	8.5%
Accommodation	9,380	102	1	101	1.1%
Automotive	3,604	0	2	-2	-0.1%
Construction	21,728	2,400	38	2362	10.9%
Manufacture and other industrial activities	5,829	324	18	306	5.2%
Other services	6,571	1,512	2	1510	23.0%
Wholesale, resale services and automotive	21,145	1,518	18	1500	7.1%
Size of enterprise	68,256	5,856	79	5,777	8.5%
1 to 4 workers	3,206	24	8	16	0.5%
5 to 9 workers	8,823	184	20	164	1.9%
10 to 14 workers	7,658	1,969	2	1964	25.7%
15 to 24 workers	12,109	371	2	369	3.0%
25 to 49 workers	14,308	95	2	93	0.6%
50 + workers	22,151	3,213	3	3210	14.5%
Not Specified	0	0	42	-42	-

The level of business confidence overall in Timor-Leste remains similar to 2016, with only a minor drop in expected change in number of employees (growth in employment dropping from 9.4% to 8.5%).

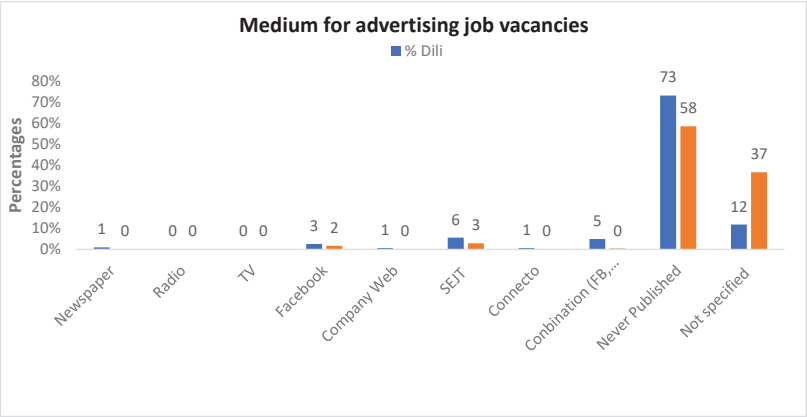
However, while 2017 data showed more growth outside Dili in 2017, it appears that growth in employment in 2018 will again be more concentrated in Dili (to grow by 11% in 2018), with little or no growth in employment expected outside the capital. The areas with the greatest level of expected growth are 23% for 'other services' and 11% for construction.

The employment growth coming from SMEs has dropped somewhat with enterprises of 10 to 24 workers providing 40% of new jobs (down from 58% in 2016). The major shift however is in the shift from job creation by micro enterprises (now less than 1% compared to 34% in 2016) to large enterprises now creating over 55% of new jobs compared to 1% in 2016.

While this is skewed by the small number of business with over 50 employees, and a few investment projects, the fall in new employment by micro-enterprises suggests that the economy is becoming more developed.

Medium for advertising job vacancies

The graph below shows the way in which enterprises are advertising their vacancies. It is important to note that the comparison among the bars is made within the location (i.e. Dili, blue colour) rather than between locations (i.e. Dili versus Other Municipalities, different colours). Moreover, it is important to clarify that, *never published* refers to enterprises that did not published job vacancies but advertised and recruited through "word-of-mouth", among friends and other relationship networks. The graph shows that, 73% of vacancies are never advertised compare to other channels of advertisements in Dili. Similar trend also occurs in other municipalities where 58% of vacancies are never published.



Job flows

Job creations and job destruction		
	ESS 2016	**ESS 2017**
Job creation	9279	10126 (6256+3870)
Opening Enterprises	193	296
Opening Enterprises with jobs	1564	3870
Recruiting enterprises in the preceding years (2015 & 2016, respectively)	1188	700
Recruiting enterprises in the preceding years with jobs	7715	6256
Job Destruction		
Contracting enterprises	701	1045
Contracting enterprises with job separation (leavers)	4640	6204
Net Employment Growth	4639	3922 (10126-6204)
Growth rate of Employment	7.0% (4639/65853)	5.7% (3922/68256)

The ESS contains two distinct measures of employment growth. The first (question B.1) is extrapolated from the responses about total number hired. This indicates that there has been growth of 2,403 jobs (68,256 in 2017 less 65,853 in 2016).

A second question (C.7) asks how many new staff have been employed by existing businesses (6,256) and how many staff have been employed by new businesses (3,870) giving a total of new jobs of 10,126.

In the same period, enterprises surveyed said they let 6,256 employees go, resulting in a net increase in employment of 3,922 (10,126 – 6,256).

Since there are contracting enterprises whose separation is higher than hiring, it can be assumed that the number of jobs lost by these businesses is approximately 1,519 (3,922 – 2,403).

Employment growth from new enterprises	3,870	38%
Employment growth from enterprise growth	6,256	62%
Gross employment growth (new jobs)	10,126	

This shows that two-thirds of employment growth comes from enterprise growth. Assuming that, in general, expanding an existing business requires fewer supports than creating a new business, and that the employment growth of from existing business is twice that of new business, the policy response should be to invest more heavily in growing existing business.

This is not to suggest that new business should not be encouraged. While employment growth is typically small in the early years of a business, these are the business that will provide growth in future years.

6. CONCLUSIONS AND RECOMMENDATIONS

There are some signs the enterprise environment, and thus the labour market, are maturing: size of businesses is increasing, wages have increased, two-thirds of employment growth coming from existing enterprises growing, as well as indications of more economic growth outside the capital Dili.

However, a high level of volatility persists in the market, suggesting a boom-and-bust business cycle. Many enterprises operate more like contractors rather than as established business, hiring staff when they win a contract and letting them go on its completion. This is particularly evident in construction related occupation, demonstrating high rates of new hiring as well as separations. These factors increase overheads for employers and make it difficult for employees to develop their skills through on-the-job experience. While support to creating new businesses is important, measures to support and develop existing enterprises should be not be overlooked.

Data show growth in business outside Dili in 2017, but enterprises expect growth in 2018 to be mainly in the capital. Public works contracts outside Dili generate a significant amount of employment. The Government should consider how reliable and successful contractors outside Dili can be supported in the boom-and-bust business cycle to become more stable and durable businesses.

The ESS indicates no change in the number of female workers employed, which remains at 24%, and new initiatives may be needed to increase the number of women in the workforce.

There has been a small increase in foreign employment, particularly among managers and professionals, and Timorese workers should be supported to improve these skills. Accounting and book keeping is among the hardest to fill vacancy, and this should be addressed as a priority given the critical nature of this skill for the survival, growth and profitability of any enterprise.

Top skills in demand and hard to fill vacancies are:

- Civil engineering labourers
- Shop sales assistants
- Earthmoving and related plant operators
- Other building workers
- Shop keepers
- Accounting and bookkeeping clerks
- Motor vehicle mechanics and repairers
- Air conditioning and refrigeration mechanics

These are principally occupations with vocational training needs. DNIMT will analyse the demand for skills and working with Training Providers to help them adjust their course offering to ensure that the TVET is responding to the market demand. The education system in Timor-Leste, at all levels (Secondary, Vocational, Technical Schools and University) must be better focused on the demand for skills in the marketplace, and on providing skills development that meets these needs.

Conducting the Enterprise and Skills Survey

An annual ESS provides important time-series data on developments in the labour market. As DNIMT develops mechanisms to link the supply of skills to the demand for skills, the evidence gathered from the ESS become more important. Conducting a nationwide ESS is a significant undertaking, and the following recommendations can help streamline the process, reduce the costs, as well as improving the quality of the data.

Recommendations

1. Get better data to establish enterprise population (from Taxa Impostu and/or SERVE, IP). This data needs to be in an accessible format (such as Excel), be timely, complete and ideally with correct ISIC (International Standard Industrial Classification) coding.
2. Train staff in Sentru Empregu in Municipalities to conduct surveys using tables, to reduce costs and travel, and simplify logistics.
3. Sample outside Dili in 4 or 6 of the other municipalities each year, on a rotating basis, to reduce costs and simplify data collection outside Dili.
4. Consider creating a panel of enterprises to survey, due to the difficulty in locating and contacting some of the enterprises in the sample.
5. Use geo-location feature on tables to identify location of enterprises to facilitate follow on surveys.
6. Document and standardise process of conducting survey to improve comparability between years. By following this each year, the methodology and questionnaire section will not be needed in the updates.
7. Follow model of providing updates to ESS every year, with full ESS (with donor support) every 5 years.

ANNEX A: SURVEY METHODOLOGY AND DATA

This section describes the sample design and the questionnaire design and includes descriptions of the field operations and data processing. It also provides information on the data quality including non-response, and non-coverage rates and the sampling errors of the estimates[2].

Sample design

In comparison with the ESS 2016, the sampling frames for 2017 were combined by sectors rather than branch of economic activity. This is due to the limited information on categorisation of the data by branch of economic activities.

The sampling frame was the list of enterprises from three different sources (institutions). First, TAXA IMPOSTU contained the name and address of 5799 enterprises, including telephone number, type of enterprise, and sector. The second sampling frame was the list of enterprises in the target sectors registered with the Instituto de Apoio ao Desenvolvimento Empresarial (IADE). It contained the name and address of 1055 enterprises, including telephone number, sector and description of activity. The final sampling frame was the list of enterprises from SERVE, IP, which contained 166 enterprises.

The list of enterprises from the three different sampling frames were combined and sorted by sector and location are shown in the following tables.

The sampling frames by sector

Sector		Sampling Frame (TAXA IMPOSTU, IADE, & SERVE, IP)	
		Number	%
	Total	**7020**	**100.0%**
1	Construction	3130	45 %
2	Automotive	113	2 %
3	Accommodation and food services activities	581	8 %
4	Manufacturing, other industrial activities	194	2 %
5	Wholesale, resale services and automotive	1966	28 %
6	Other services	1036	15 %

The frame concentrates on four sectors making up more than 96% of the total: construction (45%); wholesale, retail trade and automotive (28%), other services (15 %), accommodation

[2] Note: Refer to ESS 2016 for main concepts and definitions.

and food services (8 %). The last two sectors covered only 4 per cent: manufacturing, other industrial activities (2%), and automotive (2%).

The two sampling frames by district

	Location	Sample Frame (TAXA IMPOSTU, IADE, & SERVE, IP)	
		Number	%
	Total	**7020**	**100.0%**
1	Dili	4447	63%
2	Baucau	358	5%
3	Oecusse	142	2 %
4	Bobonaro	339	5 %
5	Liquica	143	2 %
6	Lautem	171	2 %
7	Manatuto	127	2 %
8	Manufahi	189	3 %
9	Viqueque	366	5 %
10	Covalima	167	2 %
11	Ainaro	237	3 %
12	Ermera	252	4 %
13	Aileu	82	1 %
	Not specified	-	-

The sampling frames were stratified into two geographical areas (Dili and Other municipalities) and six broad sectors of activity: Construction (ISIC Rev 4 two-digit codes 41-43), Automotive (ISIC Rev 4 two- digit code 45); Accommodation and food services (ISIC Rev 4 two-digit codes 55- 56), Manufacturing and other industrial activities (ISIC Rev 4 two-digit codes 06-38); Wholesale and retail services excluding automotive (ISIC Rev 4 two-digit codes 46-47) and Other services (ISIC Rev 4 two-digit codes 49-53 and 58-99).

Sample allocation among strata

	Sector	Location	TAXA, IADE, & SERVE, IP	
			N	n
	Total		**7020**	**550**
1	Construction	Dili	1262	77
2	Construction	Other	1862	104
3	Automotive	Dili	54	16
4	Automotive	Other	59	16
5	Accommodation, food services	Dili	462	47
6	Accommodation, food services	Other	119	27
7	Manufacturing, other industrial activities	Dili	170	28
8	Manufacturing, other industrial activities	Other	24	6
9	Wholesale, retail services no automotive	Dili	1639	88
10	Wholesale, retail services no automotive	Other	327	40

	Sector	Location	TAXA, IADE, & SERVE, IP	
			N	n
	Total		**7020**	**550**
11	Other services	Dili	844	62
12	Other services	Other	192	26
	Not classified	Dili	3	8
	Not Classified	Other	3	5

The sample size was determined based on previous surveys and the present available resources. The sample size of 550 was drawn from the total of 7020 list of enterprise, a combination list of enterprises from tax office, IADE, and SERVE, I.P. The sample was allocated among the sector in each 13 municipalities by square-root allocation[3]. The distributions of the sample enterprises are shown below by branch of economic activity and location.

Sample enterprises by sectors

	Sector	TAXA IMPOSTU	
		Number	%
	Total	**550**	**100.0%**
1	Construction	178	32.4%
2	Automotive	32	5.8%
3	Accommodation and food services	74	13.5%
4	Manufacturing, other industrial activities	34	6.2 %
5	Wholesale, resale services and automotive	125	22.7%
6	Other services	88	16.0%
7	Not specified	19	3.5%

Sample enterprises by district

	District	Sample Frame	
		Number	%
	Total	**550**	**100.0%**
1	Dili	328	60%
2	Baucau	36	7 %
3	Oecusse	8	1 %
4	Bobonaro	25	5 %
5	Liquica	9	2 %
6	Lautem	11	2 %
7	Manatuto	7	1 %
8	Manufahi	22	4 %
9	Viqueque	16	3 %

[3] Note: Refer to ESS 2016 for sample allocation (square-root allocation)

	District	Sample Frame	
		Number	%
10	Covalima	10	2 %
11	Ainaro	58	11 %
12	Ermera	12	2 %
13	Aileu	8	1 %

The comparison of frame and sample tables indicates that both samples preserve the proportion of enterprises in the frame in terms of geographical area. The sample contains 60% of enterprises in Dili, lower than the proportion in the frame 63%. In contrary, sample contains 11% of enterprises in Ainaro while sampling frame contains only 3% of enterprises for Ainaro.

In terms of sectors it can be observed however, that the sample composition over-samples accommodation and food services (13.5% in the sample against 8% in the frame) as well as those in automotive (5.8% in the sample against 2% in the frame), but under-samples the enterprises in construction (32.4% in the sample against 45% in the frame).

Questionnaire design

The questionnaire for ESS 2017 is similar to the ESS 2016, with some slight differences. The ESS 2017 now has 33 questions (36 previously) organised in 5 sections in addition to a final page. Some of the main changes from the previous questionnaires are:

- removal of the questions in relation to registration with SERVE, IP, IADE, and Impostu
- removal of questions regarding temporary workers
- additional questions regarding mechanisms for advertising job vacancies by the enterprises[4].

Field operation

The field operations were conducted from June to August 2017. In total 9 interviewers were involved visiting the sample enterprises, often at multiple occasions, to obtain responses. The respondents were in most cases either the owner of the enterprise or the director or manager. In virtually all cases, the interviewer administered the questionnaire, recording the responses provided by the respondent. In a few cases, the interviews were done via mobile phone, when respondents were not able to meet with the interviewer.

The following table shows the interview results. In the case of 232 enterprises, the questionnaire was either fully or partially completed. One of the responding

[4] Note: Refer to ESS 2016 for the questionnaire descriptions.

enterprises was a duplicate appearing in both the TAXA IMPOSTU and IADE samples. The table also shows that 67 enterprises could not be contacted and 30 refused to participate in the survey. Some 54 enterprises were no longer active, an additional 13 could not be located and the address of a further 94 could not be found. Some 39 other enterprises could not be interviewed for other reasons or unspecified reasons.

Interview results of sample enterprises

	Interview result	TAXA IMPOSTU
	Total	**550**
1	Questionnaire fully or partially completed	210
2	No contact	33
3	Refusal	15
4	Not active	57
5	Company not found	2
6	Address not found	139
7	Other, specify	76
8	Not specified	18

The enterprises in the first category (questionnaire fully or partially completed) are classified as responding enterprises. Thus, there are 210 (=164 + 46) responding enterprises. Enterprises considered non-responding are; no contact, refusal and others, specify. There are 124 (= 33 + 15 + 76) non-responding enterprises. The non-response rate of the survey may be thus calculated as

$$\text{Non-response rate} = \frac{124}{550} = 22.5\%$$

Enterprises in the remaining categories (not active, company not found, and address not found, etc.) are considered as non-coverage. The non-coverage rate may be calculated as.

$$\text{Non-coverage rate} = \frac{216}{550} = 39.3\%$$

The non-response rate of the ESS 2017 is in line with the rates found in establishment surveys in other countries[5].

[5] http://laborsta.ilo.org/applv8/data/SSM2_NEW/E/main.html

Data processing

The 2017 data collection was done using tablets to collect responses, instead of paper-based questionnaires. Questions were loaded on eight tablets using a commercial application called "Quick Tab". Responses were directly entered to the tablets in the field, which then synchronized into the Quick Tab account at SEJT, when internet access was available. Once stored in the Quick Tab account, the survey data were processed in Excel and Stata after all survey results became available in August 2017[6].

Sampling and measurement errors

Sampling errors

Sampling errors arise because the survey does not cover all elements of the population, but only a selected portion. The sampling error of an estimate is based on the difference between the estimate and the value that would have been obtained on the basis of a complete count of the population under otherwise identical conditions. In principle, sampling errors may be decomposed into two components: (i) sampling bias; and (ii) sampling variance. Sampling bias reflects the systematic error that may occur due to the failures of the sample design, for example, certain elements of the population receiving zero probability of selection. The sampling variance, on the other hand, reflects the uncertainty associated to a sample estimate due to the sample used for its calculation, among all possible other samples that could have been selected from the frame with the same sampling design[7].

Standard errors and confidence intervals of main estimates: ESS 2017

	Estimate	Standard error	Relative standard error	Confidence interval (95%)	
				Lower	Upper
Number of employees	68256	3145	4.6%	56926	79586
Number of hiring in 2017	4404	348	7.9%	3370	5438
Number of female hiring in 2017	1979	207	10.4%	1349	2609
Hard-to-fill vacancies	699	25	3.5%	587	811
Number of separation in 2017	6210	509	8.2%	4689	7731
Expected hiring in the next 12 months	3104	102	3.3%	2882	3327

One use of the standard error is to assess the level of precision of survey estimates. A low relative standard error indicates a high precision of the estimate. In general, the lower the relative standard error of an estimate, the higher is the precision of the

[6] Note: Refer to ESS 2016 for more data processing and sampling weight

[7] Enterprise and Skills Survey 2016 "Variance Calculation Method"

estimate. The relative standard error of an estimate is the ratio of the standard error to the size of the estimate. For example, it can be deduced from the above table that the number of employees is more precisely estimated than the number of number of hiring in 2017. The relative standard error of the estimate of the number of employees is 4.6% while the relative standard error of the estimate of the number of hiring in 2017 is 7.9%. Similarly, the number of hiring in 2017 is more precisely estimated than the number of female hiring in 2017 with relative standard error of 10.4%. These results reflect the fact that the estimates based on larger effective sample size are generally (but not always) more precise than estimates based on smaller effective sample size.

Another use of the standard error is for the calculation of confidence intervals. Under certain broad assumptions, it can be stated that the true value of the variable of interest lies in between the survey estimate and a multiple of the standard error, with certain degree of probability, set here at 95%. For example, from the first line of the table, it can be stated that the true value of the total number of employees is within the interval with 95% confidence, 56,926 ≤ estimated number of employees ≤ 79,586.

Measurement errors

In addition to sampling errors, survey data are subject to different types of measurement errors (coverage errors, non-response errors, response errors, and other errors such as editing, coding and processing errors).[8] In many situations, the measurement errors may have considerable impact on the quality of the survey results. Non-response and non-coverage errors were discussed earlier regarding the field operations. Here we will examine the coherence of the ESS 2017 results with data from different sources, such as Business Activity Survey (BAS) and ESS 2016[9].

The latest available results are for BAS 2014 referring to the situation on 15 December. The following table compares these results by location and branch of economic activity with the corresponding data obtained from the ESS 2017. The ESS 2017 data refer to the situation in 2017. BAS provides more precise estimates than ESS 2016 and 2017 as evidenced from their respective relative standard errors (2.1% for of the estimate of total employment in BAS against 4.1% and 4.6% in ESS 2016 and ESS 2017, respectively). The estimates of total employment from the three sources nevertheless closely agree: 62,200 in December 2014 from BAS, 65,853 in January 2016 from ESS and 68,256 from ESS 2017.

[8] Hussmanns, Ralf, Farhad Mehran, and Vijay Verma, ILO Manual on Concepts and Methods: Surveys of Economically Active Population, Employment, Unemployment and Underemployment (Part II)

[9] Note: Refer to ESS 2016 BAS descriptions.

Comparison of the level of employment by location and branch of economic activity - ESS 2016 versus BAS 2014

	ESS 2017[10]	ESS 2016[11]	BAS 2014[12]
Total employment	68,256	65,853	62,200
- Dili	50,556	55,446	52,000
- Municipalities	17,700	10,407	10,200
Manufacturing	5,829	2,834	2,800
Construction	21,728	18,580	21,500
Wholesale and retail trade, repair of motor vehicles and motor cycles	21,145	13,262	17,800
Automotive	3,604	-	
Transportation and storage	-	2,192	-
Accommodation and food service activities	9,380	6,345	5,000
Financial and insurance activities	-	1,223	600
Administrative and support service activities		13,840	14,500
Other services	6,571	7,577	-

The breakdown for Dili and Other municipalities is also in relatively close agreement. The estimate of employment in Dili is 52,000 from BAS, 55,446 from ESS 2016. It is however, decrease to 50,256 from ESS 2017. The relative difference between Dili and Municipalities is attributable to the increasing concentration of employment in Dili. The estimates of employment in the other municipalities are almost identical (10,200 from BAS and 10,407 from ESS) but has increased in ESS 2017, suggesting that there has been growth of employment outside Dili. This may have been attributed to number of ongoing infrastructure projects and wholesale, and retail activities.

In terms of branch of economic activity, there is an increasing trend for the estimates of employment in manufacturing (2,800 from BAS 2,834 from ESS) and significant increase from ESS 2017 (5,828). There are similarities between BAS and ESS 2017 (21, 5000 and 21,728) for construction. Wholesale and retail trade, repair of motor vehicles and motorcycles shows and increasing trend (17,800 from BAS, 13,262 from ESS 2016, and 21,145 from ESS 2017), and similarly, accommodation and food service activities exhibit increasing trends (5,000 from BAS, 6,345 from ESS 2016, and 9,380 from ES 2017). This increasing trend can be attributed to the increasing time period from 2014 – 2017.

[10] Enterprise and Skills Survey 2017 (reference period June 2017)

[11] Enterprise and Skills Survey 2016 (reference period January 2016)

[12] Business Activity Survey 2014 (Reference period: December 2014)

ANNEX B: STATISTICAL TABLES

1. Number of enterprises and employed persons by location and sector

Branch of economic activity	Timor-Leste		Dili		Municipalities	
	Enterprise	Employed persons	Enterprise	Employed persons	Enterprise	Employed persons
Total	**5229**	**68256**	**3150**	**47133**	**2079**	**21123**
Accommodation and food services	465	4570	369	4075	96	495
Automotive	90	1029	26	396	64	633
Construction	2615	34195	949	15058	1666	19137
Manufacture and other industrial activities	102	1870	102	1870	-	-
Wholesale, resale services and automotive	1504	22109	1252	21251	252	858
Other services	452	4484	452	4484	-	-

2. Composition of enterprises: ESS 2017 versus ESS 2016

Location and Sector	ESS 2017		ESS 2016
Total enterprises	**5229**	**100.0%**	**100.0%**
Dili	3150	60.2%	73.5%
Municipalities	2079	39.8%	26.5%
Accommodation and food services	465	8.9%	12.6%
Automotive	90	1.7%	-
Construction	2615	50.0%	35.9%
Manufacture and other industrial activities	102	2.0%	4.4%
Wholesale, resale services and automotive	1504	28.8%	30.6%
Other services	452	8.7%	7.8%

3. Newly established enterprises: ESS 2017 versus ESS 2016

	2017	2017
Total enterprises newly established	296	193
Total employees	3870	1564

4. Number of enterprises and employed person by location and size of enterprise

Size of enterprises	Timor-Leste		Dili		Municipalities	
	Enterprise	Employed persons	Enterprise	Employed persons	Enterprise	Employed persons
Total	**5229**	**68256**	**3150**	**47133**	**2079**	**21123**
1 to 4	2391	2870	1368	1901	1023	969
5 to 9	971	6570	455	3011	516	3559
10 to 14	667	7941	342	4119	325	3822
15 to 24	548	10343	426	8068	122	2275
25 to 29	387	13380	336	11700	51	1680
50 +	264	27151	223	18335	41	8817

5. Number of enterprises and type of employed person by type of ownership

Type of ownership	ESS 2017	ESS 2016
Joint ownership	3%	7%
Solely Foreign	23%	29%
Solely Timorese	64%	63%
Not specified	10%	1%

6. Composition of enterprises by type of ownership ESS 2017 versus ESS 2016

Type of ownership	Timor-Leste		Dili		Municipalities	
	Enterprises	Employed persons	Enterprises	Employed persons	Enterprises	Employed persons
Joint ownership	173	2975	157	2773	17	202
Solely Foreign	1197	17883	1181	17833	17	50
Solely Timorese	3325	47398	1665	26528	1661	20871
Not specified	532	0	148	0	384	0

7. Number of employed persons by major occupational group

Occupation (Major group)	Total	Local		Foreign	
		Female	Male	Female	Male
Total	**68256**	**15474**	**46317**	**954**	**5511**
Managers	6200	1775	2968	265	1192
Professionals	3683	662	2279	106	636
Associate professionals	3312	530	2226	106	450
Clerical support workers	6783	3948	1855	344	636
Service and sale workers	12719	5326	6651	79	662
Skilled agricultural, forestry, fishery workers	212	106	106	0	0
Craft and related trade workers	3392	106	2199	26	1060
Plant and machine operators and assemblers	10360	291	9380	0	689
Elementary occupations	21595	2729	18654	26	185

8. Occupational composition of employed persons by sex ESS 2017 vs ESS 2016

Occupation (Major group)	Total ESS 2017	Total ESS 2016	Male ESS 2017	Male ESS 2016	Female ESS 2017	Female ESS 2016
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Managers	9.1%	11.5%	8.0%	11.2%	12.4%	12.5%
Professionals	5.4%	8.2%	5.6%	9.0%	4.7%	5.8%
Associate professionals	4.9%	7.5%	5.2%	7.8%	3.9%	6.2%
Clerical support workers	9.9%	7.8%	4.8%	4.5%	26.1%	18.6%
Service and sale workers	18.6%	15.5%	14.1%	8.9%	32.9%	37.0%
Skilled agricultural, forestry, fishery workers	0.3%	0.2%	0.2%	0.2%	0.6%	0.1%
Craft and related trade workers	5.0%	4.0%	6.3%	5.3%	0.8%	0.1%
Plant and machine operators and assemblers	15.2%	8.6%	19.4%	11.2%	1.8%	0.3%
Elementary occupations	31.6%	36.6%	36.3%	41.9%	16.8%	19.4%

9. Occupational composition of employed persons by nationality ESS 2017 vs ESS 2016

Occupation (Major group)	Total ESS 2017	Total ESS 2016	Timorese ESS 2017	Timorese ESS 2016	Foreigner ESS 2017	Foreigner ESS 2016
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Managers	9.1%	11.5%	7.7%	8.8%	23.5%	30.4%
Professionals	5.4%	8.2%	4.8%	6.9%	20.1%	23.3%
Associate professionals	4.9%	7.5%	4.5%	7.8%	16.8%	4.3%
Clerical support workers	9.9%	7.8%	9.4%	7.9%	5.8%	7.8%
Service and sale workers	18.6%	15.5%	19.4%	15.6%	14.5%	8.0%
Skilled agricultural, forestry, fishery workers	0.3%	0.2%	0.3%	0.2%	0.0%	0.0%
Craft and related trade workers	5.0%	4.0%	3.7%	3.7%	32.0%	12.0%
Plant and machine operators and assemblers	15.2%	8.6%	15.7%	9.0%	6.6%	4.7%
Elementary occupations	31.6%	36.6%	34.6%	39.9%	1.0%	0.2%

10. Average wages (USD per month) by major occupational group, ESS 2017

Occupation (Major group)	ESS 2017
Managers	540
Professionals	535
Associate professionals	278
Service and sale workers	259
Clerical support workers	145
Skilled agriculture, forestry and fishery worker	-
Craft and related trades workers	299
Plant and machine operators and assemblers	160
Elementary occupations	129

11. Average wages (USD per month) ESS 2017 versus ESS 2016

Occupation (Major group)	ESS 2017	ESS 2016
Managers	540	452
Professionals	535	337
Associate professionals	278	274
Service and sale workers	259	212
Clerical support workers	145	180
Skilled agriculture, forestry and fishery workers	-	298
Craft and related trades workers	299	162
Plant and machine operators and assemblers	160	222
Elementary occupations	129	135

12. Recruiting enterprises and number of recruited person by location and sector

Excludes number of workers hired during the establishment of the enterprises

Location/Branch of economic activities	Total	Recruitment enterprises		Number of recruited person in 2017
		Yes	No	
Total	**5229**	**996**	**4233**	**6447**
- Dili	3287	772	2515	3608
- Municipalities	1942	224	1718	2839
Accommodation and food services	971	274	697	819
Automotive	274	50	224	588
Construction	1569	224	1345	851
Manufacture and other industrial activities	299	100	199	495
Wholesale, resale services and automotive	1469	274	1195	3424
Other services	647	75	573	270

13. Recruiting enterprise and number of recruited person in 2017 by size of enterprises (excluding number of workers hired during the establishment of the enterprises)

Size of enterprise (number of employed person)	Total enterprises	Recruiting enterprises		Number of hired people in 2017
		no	yes	
Total	**5229**	**3991**	**1238**	**6447**
1-4 workers	1516	1330	186	512
5-9 workers	1516	1114	402	1273
10-14 workers	743	650	93	174
15-24 workers	743	495	248	2329
25-49 workers	464	309	155	739
50+ workers	248	93	155	1419

14. Top twenty occupations (out of 31 occupations) with highest number of hiring in 2017 by and nationality

ISCO	Occupation	Total	Male	Female	Timorese	Foreigner
	Total	**4158**	**2367**	**1791**	**3890**	**268**
9312	Civil engineering labourers	840	630	210	672	168
5223	Shop sales assistants	810	180	630	810	0
3419	Earthmoving and related plant operators	420	420	0	336	84
7119	Building frame and related trades workers NEC	405	405	0	405	0
5223	Shop keepers	180	90	90	180	0
1323	Construction managers	168	0	168	168	0
5122	Construction supervisors	168	84	84	168	0
5122	Carpenters and joiners	135	135	0	135	0
5249	Sales workers not elsewhere classified	135	0	135	135	0
8313	Car, van and motorcycle drivers	120	80	40	120	0
5122	Cooks	106	21	85	106	0
4311	Accounting and bookkeeping clerks	100	40	60	100	0
8332	Motor vehicle mechanics and repairers	96	58	38	80	16
5246	Food service counter attendants	85	0	85	85	0
9313	Building construction labourers	84	84	0	84	0

ISCO	Occupation	Total	Male	Female	Timorese	Foreigner
3419	Heavy truck and lorry drivers	80	80	0	80	0
4226	Receptionists (general)	80	60	20	80	0
9412	Kitchen helpers	64	0	64	64	0
5131	Waiters	42	0	42	42	0
5122	Cashiers and ticket clerks	40	0	40	40	0

15. Demographic composition of hiring: ESS 2017 versus ESS 2016

Sex and nationality	ESS 2017		ESS 2016		Change (percentage point)
	Number	%	Number	%	
Total	**4404**	**100.0%**	**5862**	**100.0%**	
Male	2425	55.1%	4735	80.8%	-25.7%
Female	1979	44.9%	1127	19.2%	25.7%
Timorese	4136	93.9%	4558	77.8%	16.1%
Foreign	268	6.1%	1304	22.2%	-16.1%

16.Top twenty occupation with highest number of separation in 2017

ISCO	Occupation	Number of enterprises	Number of employees
	Total	**2717**	**6210**
7111	House builders	252	1329
5223	Shop keepers	450	1125
5221	Shop sales assistants	180	945
9312	Civil engineering labourers	420	588
9313	Building construction labourers	168	252
7119	Building frame and related trades workers not elsewhere classified	84	252
3123	Construction supervisors	168	252
9129	Other cleaning workers	120	140
9412	Kitchen helpers	20	120
8313	Car, van and motorcycle drivers	80	100
5131	Waiters	45	90
7231	Motor vehicle mechanics and repairers	64	80
5230	Cashiers and ticket clerks	60	80
4110	General office clerks	40	80
5120	Cooks	21	64
5131	Waiters	21	64
1221	Sales and marketing managers	60	60
5211	Stall and market salespersons	0	45
5151	Cleaning and housekeeping supervisors in offices, hotels and other establishments	42	42
5245	Service station attendants	21	42
	others	400	460

17. Expected increase or decrease of number of employees in the next 12 months by location and branch of economic activity of the enterprise

Location and Sector	Total number of enterprises	Enterprises with expected increase or increase of employees in the next 12 months			Expected increase of number of employee	Expected decrease of number of employee
		Increase	Remain Same	Decrease		
Timor-Leste	**5229**	**837**	**4372**	**20**	**5856**	**79**
Dili	3287	713	2556	18	5788	78
Other Municipalities	1942	124	1816	2	68	1
Branch of Economic Activity	5229	837	4372	20	5856	79
Accommodation	828	18	809	1	102	1
Automotive	274	12	261	1	0	2
Construction	1545	73	1466	6	2400	38
Manufacture and other industrial activities	203	52	147	4	324	18
Wholesale, resale services and automotive	1230	82	1142	6	1518	18
Other services	576	27	547	2	1512	2

18. Hiring intention of enterprises in the next 12 months: ESS 2017 versus ESS 2017

Hiring intention during next 12 months	ESS 2017		ESS 2016		Change (percentage point)
	Number	%	Number	%	
Total	**5229**	**100.0%**	**5213**	**100.0%**	**-**
Increase	837	16.0%	635	12.2%	3.8
Decrease	20	0.4%	95	1.8%	-1.4
Same	4372	83.6%	4401	84.4%	-0.8
Don't know	-	-	83	1.6%	

19. Expected increase or decrease of number of employees in the next 12 months by location and branch of economic activity of the enterprises

Size of enterprise (number of employed persons)	Total number of enterprises	Enterprise with expected increase or decrease of employees in the next 12 months			Expected increase of number of employees	Expected decrease of number of employees
		Increase	Remain Same	Decrease		
Size of enterprise	5229	837	4372	20	5856	79
1 to 4 workers	1220	86	1131	3	24	8
5 to 9 workers	1220	234	981	5	184	20
10 to 14 workers	598	99	497	2	1969	2
15 to 24 workers	598	186	410	1	371	2
25 to 49 workers	374	37	336	1	95	2
50 + workers	199	112	87	1	3213	3
Not Specified	1021	84	930	7	0	42

20. Skills limitations of hired first-time job seekers by level of educational attainment ESS 2017

Lack of:	Total	High School	Technical High School	TEVTs	University
Specific Job and Competencies	328	162	60	43	63
Literacy and numeracy education	176	83	0	22	72
Motivation or poor attitude	72	14	0	14	43
Work/life experience or maturity	120	41	14	0	65
Others	65	14	43	7	0

21. Skills limitations of hired first-time job seekers by level of educational attainment: ESS 2017 versus 2016

Lack of:	2016				2017			
	High School	Tech High School	TEVTs	Uni	High School	Tech High School	TEVTs	Uni
Specific Job and Competencies	88.60 %	11.40 %	0%	0%	49%	18%	13%	19%
Literacy and numeracy education	47.10 %	52.90 %	0%	0%	47%	0%	12%	41%

Lack of:	2016				2017			
	High School	Tech High School	TEVTs	Uni	High School	Tech High School	TEVTs	Uni
Motivation or poor attitude	85.50 %	14.50 %	0%	0%	20%	0%	20%	60%
Work/life experience or maturity	57.20 %	0%	0%	42.80 %	34%	12%	0%	54%
Others (not specified)	-	-	-	-	22%	67%	11%	0%

22. Skill limitations of employees: ESS 2017

Skills	ESS 2017		ESS 2016	
Total	**1327**	**100.0%**	**1675**	**100.0%**
Oral communication	266	20.1%	138	8.2%
Team working	240	18.1%	143	8.6%
Management responsibilities/taking leadership	138	10.4%	122	7.3%
Taking initiatives	122	9.2%	109	6.5%
Customer handing	112	8.4%	114	6.8%
Literacy	93	7.0%	124	7.4%
Manual dexterity	75	5.6%	21	1.2%
Numeracy	68	5.1%	109	6.5%
Written communication	34	2.6%	109	6.5%
Public speaking/instructing/training	32	2.4%	79	4.7%
IT literacy/use of IT	16	1.2%	96	5.7%
Knowledge of foreign language	8	0.6%	147	8.8%
Clerical/administrative tasks	6	0.4%	79	4.7%
Planning and organizing	4	0.3%	135	8.1%
Advanced IT	-	-	125	7.5%
Job-specific tasks in automotive industry	-	-	5	0.3%
Job-specific tasks in construction industry	32	2.4%	0	0.0%
Job-specific tasks in accommodation and food services	29	2.2%	20	1.2%
Other job-specific tasks	52	3.9%	0	0.0%

23.Top twenty occupations with hard-to-fill vacancies

Occupation	Number of enterprises	Number of employees
Total	**342**	**699**
Accounting and bookkeeping clerks	20	80
Civil engineers Labourers	36	36
Earthmoving and related plant operators	18	36
Motor vehicle mechanics and repairers	33	33
Air conditioning and refrigeration mechanics	8	32
Electrical line installers and repairers	8	32
Heavy truck and lorry drivers	8	32
Plumbers and pipe fitters	8	32
House builders	30	30
Tailors, dressmakers, furriers and hatters	9	27
Cooks	20	24
Building architects	18	24
Carpenters and joiners	6	18
Cashiers and ticket clerks	4	16
Cement, stone and other mineral products machine operators	4	16
Fire-fighters	4	16
Lifting truck operators	4	16
Painters and related workers	4	16
Pet groomers and animal care workers	4	16
Process control technicians not elsewhere classified	4	16
Others	92	151

24.Top twenty occupations with training needs

ISCO	Occupation	Number of enterprises	Number employees
4311	Accounting and bookkeeping	168	273
2142	Civil engineers	252	252
5223	Shop sales assistants	90	90
5120	Cooks	64	85
1323	Construction managers	84	84
8342	Earthmoving and related plant operators	84	84
5245	Service station attendants	66	66
4321	Stock clerks	45	45
3511	Information and communications technology operations technicians	40	40
7231	Motor vehicle mechanics and repairers	32	32

ISCO	Occupation	Number of enterprises	Number employees
5246	Food service counter attendants	21	21
4224	Hotel receptionists	21	21
2411	Accountants	20	20
5230	Cashiers and ticket clerks	20	20
3513	Computer network and systems technicians	20	20
5411	Fire-fighter	20	20
5141	Hairdressers	20	20
3132	Incinerator and water treatment plant operators	20	20
5329	Personal care workers in health services not elsewhere classified	20	20
8132	Photographic products machine operators	20	20
	Others	25	25

25. Top fifteen occupations with current vacancies

ISCO	Occupation	Number of enterprises	Number of vacancies
	Total	**1214**	**4248**
5221	Building construction labourers	168	1344
5230	Earthmoving and related plant operation	106	924
7115	Shop keepers	21	450
7231	Cashiers and ticket clerks	90	315
5223	Truck and Lorry driver	45	315
9312	Civil Engineering Labourers	252	252
5414	Shop sales assistants	135	180
9313	Cook	106	148
2142	Accounting and bookkeeping clerks	80	80
8342	Motor vehicle mechanics and repairers	64	64
7127	Security Guards	40	60
7531	Air conditioning and refrigeration mechanics	40	40
8332	Carpenter and Joiners	27	36
3343	Administrative and executive Secretaries	20	20
1212	Human Resource Manager	20	20

26. Top thirteen occupations with expected new hiring in the next 12 months

ISCO	Occupation	Expected number of new hiring
	Total	**1844**
9313	Building construction labourers	1260
1321	Earthmoving and related plant operators	672
5223	Shop sales assistants	450
5221	Shop keepers	315
5230	Cashiers and ticket clerks	120
5120	Cooks	106
5131	Waiters	42
2132	Farming, forestry and fisheries advisers	40
7231	Motor vehicle mechanics and repairers	32
4311	Accounting and bookkeeping clerks	20
7127	Air conditioning and refrigeration mechanics	20
7115	Carpenters and joiners	18
7531	Tailors, dressmakers, furriers and hatters	9

27. Occupations reported by enterprises for non-performing of employees (reported skill gap)

ISCO-08	Occupation	Number of enterprises
	Total	**358**
9313	Building construction labourers	54
5223	Shop sales assistants	43
8332	Motor vehicle mechanics and repairers	39
9312	Civil engineering labourers	30
7231	Sales workers not elsewhere classified	28
5223	Waiters, Waitresses and Bartenders	24
3419	Heavy truck and lorry drivers	19
5122	cooks	16
5122	Finance and Sales Associate Professionals not Elsewhere Classified	15
5223	Shop keepers	15
5223	Security guards	13
8322	Car, Taxi, and Van Drivers	11
1219	Business services and administration managers not elsewhere classified	10
5122	Construction supervisors	6
3419	Earthmoving and related plant operators	6

ISCO-08	Occupation	Number of enterprises
5122	Carpenters and Joiners	6
7412	Bakers, Pastry-cooks and confectionery makers	4
8342	Cleaners and Helpers in Offices, Hotels and Other establishments	4
7127	Air conditioning and refrigeration mechanics	4
5122	Cashier and Ticket Clerks	4
8332	Hairdressers	4
7531	Tailors, dressmakers, furriers and hatters	3

28. Enterprises financing training courses by area of training

No	Areas of training	Number of enterprises	%
	Total	**2713**	**100.0%**
1	Civil Engineering Labourers	420	15.5%
2	Mechanics	196	7.2%
3	Architecture	168	6.2%
4	Computer Literacy	129	4.8%
5	Accounting	113	4.2%
6	Administration	104	3.8%
7	Hospitality	85	3.1%
8	Administration and Finance	84	3.1%
9	Business Management	84	3.1%
10	Clerk	84	3.1%
11	Engineering	84	3.1%
12	Finance	84	3.1%
13	Financial Management	84	3.1%
14	Induction training	84	3.1%
15	Wielding	84	3.1%
16	Cook	64	2.3%
17	Leadership	45	1.7%
18	Mechanics	45	1.7%
19	Numeracy	45	1.7%
20	Portuguese Language	45	1.7%
21	English	42	1.6%
22	Cleaning	21	0.8%
23	Customer Service	21	0.8%
24	Sales	21	0.8%
25	Waiters	21	0.8%

No	Areas of training	Number of enterprises	%
26	Barber	20	0.7%
27	IT	20	0.7%
28	Marketing Management	20	0.7%
29	Photographer	20	0.7%
30	Car Painting	16	0.6%
31	Critical Thinking	16	0.6%
32	Time Management	16	0.6%
33	Human Resource	9	0.3%
34	Plumbing	9	0.3%
45	Others	309	11.4%

29. Enterprises recruiting from TVET by TVET training provider and area of training

Training area	Total	TVET training providers							
		Senai Bekora	Don Bosco	Salele	STVJ Comoro	Tibar	SOLS	Baucau	STVJ
Total	**606**	**40**	**280**	**100**	**20**	**104**	**21**	**21**	**20**
Construction	252	0	168	0	0	84	0	0	0
Masonry	84	0	0	84	0	0	0	0	0
Automotive	48	0	32	16	0	0	0	0	0
AC Repairer	40	40	0	0	0	0	0	0	0
Electrical	40	0	20	0	0	20	0	0	0
Wielding	40	0	40	0	0	0	0	0	0
English	21	0	0	0	0	0	21	0	0
Hospitality	21	0	0	0	0	0	0	21	0
Customer Service	20	0	0	0	20	0	0	0	0
Not Specified	40	0	20	0	0	0	0	0	20

30. Means of communication enterprises uses to advertise vacancies; by location and sectors

	Total	Np	R	TV	FB	CW	SEJT	CNT	Comb	NP	NS
Location (Total)	**5229**	**28**	**0**	**0**	**115**	**20**	**235**	**19**	**164**	**3527**	**1120**
Dili	3198	28	0	0	81	20	178	19	157	2339	376
Municipalities	2031	0	0	0	34	0	57	0	7	1188	744
Sector (total)	5229	28	0	0	116	20	235	21	163	3523	1123
Accommodation and Food services	455	0	0	0	14	0	0	14	7	357	63
Automotive	93	0	0	0	0	0	0	7	0	59	27
Construction	2627	0	0	0	82	0	170	0	43	1547	785
Manufacture and other industrial activities	108	0	0	0	0	0	0	0	9	90	9
Wholesale, and retail trade, repair of motor vehicles and motorcycles	1486	28	0	0	0	0	45	0	84	1110	219
other services	460	0	0	0	20	20	20	0	20	360	20

Note: Combination includes; Facebook, Konnecto, SEJT, Jornal, and Radio.

Np=Newspaper, R=Radio, FB=Facebook, CW=Company Website, SEJT=Secrtária de Estad da Juventude e do Trabalho, NS=Not specified, CNT= Konnecto, Comb=Combination, NP=Never Published, NS=Not specified

ANNEX C: SKILLS ANTICIPATION SURVEY QUESTIONNAIRE

SEPFOPE ID No.						

Section A – Enterprise Profile

1.Name of the enterprise:_____

2. Address of the enterprise:

Suco|_____|Municipal |_____

3. Is this your: A. Branch Office: |_____| B. Main Office: |_____|

3a. Does your enterprise have other establishments in different locations?

1. Yes (go to 3b) 2. No (go to A.1)

3b.	How many?		

A.1 When was your enterprise established? Month: |__|__| Year: |__|__|__|__|

A.2 The company/enterprise is a/an:

Sole Trader – ENIN	1
Single Shareholder Company with Limited Liability – ("Unipessoal. Lda.")	2
Partnership with Limited Liability – "Lda."	3
Joint Stock Company – "S.A."	4
Permanent Representation (Foreign Company's Branch)	5
State Owned Enterprise – "E.P."	6
National Enterprise	7

A.3 The enterprise is owned by:

1. _____
2. _____
3. _____

A.4 What are the main goods or services provided by your enterprise in this location?

ISIC Code					

Section B – Employee Profile

B.1 Could you please indicate the number of wage and salary employees by occupation.

Occupation (by major group)	Locals		Foreigners	
	Male	Female	Male	Female
1 Managers				
2 Professionals				
3 Associate professionals				
4 Service and sale workers				
5 Clerical support workers				
6 Skilled agricultural, forestry and fishery workers				
7 Craft and related trades workers				
8 Plant and machine operators and assemblers				
9 Elementary occupations				
Total				

B.2 Please list the occupational title of the main categories of workers in your enterprise and specify the current number of workers in each of the occupations (up to 5 occupations)

No	Occupational title	ISC code				Current number of workers		
						Skilled	Semiskilled	Unskilled
1								
2								
3								
4								
5								

B.3 Could you please indicate the average monthly wage/salary you pay for the following positions?

Occupation categories	Average USD per month
1. **Managers** (This category includes chief executives; general and corporate managers; managing director; administrative, finance, production, service and sale manager; and regional and branch manager who plan, direct and coordinate the policies and activities of business and other organization)	
2. **Professionals** (Professionals increase the existing of knowledge, apply scientific or artistic concepts and theories, or teach in a systematic manner. Most occupations in this category- such as engineers, lawyers, economists, computing professionals, teachers and health professionals- require skills at graduate and postgraduate education)	
3. **Technicians and associate professionals** (This category performs mostly technical and related tasks connect with research and application of scientific, artistic, or operational methods. These occupations, which typically require skills at upper secondary or tertiary education, include industrial robot controllers, photographers and medical assistants)	
4. **Clerical support workers** (This category performs clerical duties with associated with money-handling operations, travel arrangements, requests for information and arrangement. Most of these jobs, such as secretaries, cashiers, or transport clerks, require skills at least lower secondary educations)	
5. Service and sale workers (This category provides personal services related to travel, housekeeping, catering, personal care, or protection, or they demonstrate and sell goods. Most occupations require skills at least lower secondary education)	
6. Skilled agricultural, forestry, and fishery workers (This group includes occupations that require skills at least secondary education or equivalent critical skills and knowledge such as crop growers, gardeners and dairy and livestock producers)	
7. Craft and related trades workers (This group applies their skills in the fields of mining and construction, making or repairing machinery, printing, processed food, textiles, or articles including handicrafts goods which involve the performance of complex physical duties that normally involve initiative, manual dexterity and other practical skills. Most of these occupations, such as builders, bricklayers, plumbers, or electronic mechanics require a substantial period of training)	
8. **Plant and machine operators and assemblers** (This group operates and monitors industrial and agricultural machinery and equipment, drives and operates motor vehicles and mobile machinery, or assembles products. Most occupations have not a particular standard of education but will usually have formal experience related training)	
9. **Elementary occupations** (This group consists of simple and routine tasks that mainly require the use of hand tools plus physical effort. Most occupations in this group, such as cleaners, building caretakers, doorkeepers or laborers' do not require formal education qualification).	
TOTAL	

Section C – Recruitment / Recruitment Difficulties

C.1 In the last two years, has your company filled any permanent or temporary positions?

Yes	1	Go to C.2
No	2	Go to C.6

C.2 Could you please, indicate the occupations (up to a maximum of five) in which your company has hired the most employees and the total number of employees in the following periods *(in the case of people having been hired for more than one occupation, please choose the main one):*

Occupation (List up to five occupations) (ISCO-08 Code)	Locals		Foreigners	
	Male	Female	Male	Female
1				
2.				
3.				
4.				
5.				
Total				

C.3 In the last two years, including this year, have your enterprise recruited first-time job seekers? *Please indicate.*

	Yes	No
A First-time job seekers coming from general secondary school	1	2
B First-time job seekers coming from technical secondary education	1	2
C First-time job seekers coming from technical training centre (or TVET centre)	1	2
D First-time job seekers coming from university or other higher education	1	2

C.4 How well were they prepared for work for each category?

	Very well prepared	Well prepared	Prepared	Poorly prepared	Very poorly prepared
A First-time job seekers coming from general secondary school	1	2	3	4	5
B First-time job seekers coming from technical secondary education	1	2	3	4	5
C First-time job seekers coming from technical training centre (or TVET centre)	1	2	3	4	5
D First-time job seekers coming from university or other higher education	1	2	3	4	5

C.5 In which of the following areas was the preparation of the newly hired employees lacking *(you can select all relevant fields for each group)*:

	A First-time job seeker coming from general secondary school	B First-time job seekers coming from technical secondary education	C First-time job seekers coming from technical training centre (or TVET centre)	D First-time job seekers coming from university or other higher education
Lack of job specific required skills or competencies (e.g. technical or job specific skills, IT skills, problem solving skills, team working skills, communication skills)				
Limited basic education (literacy and numeracy)				
Poor attitude / personality or lack of motivation (e.g. poor work ethic, punctuality, appearance, manners)				
Lack of work /life experience or maturity (including general knowledge& common sense)				
E Other. Please specify _____				

C.6 In the last one year, have any employees left your company? *(Both permanent and temporary positions)*

Yes	1	Go to C.7
No	2	Go to C.8

C.7 Could you please indicate the occupations (up to a maximum of five) that have registered the highest number of exits and the total number of exits in the last one year.

Occupation List up to five occupations (ISCO-88 Code)	Number of exits
1.	
2.	
3.	
4.	
5.	
Total	

C.8 Do you currently have vacancy/ies?

Yes (Number of vacancies_____)	1	Go to C.10
No	2	Go to D.1

C.9 Could you please tell us how many vacancies will you open in the next 12 months, including this year's? (Please list up to five occupations.)

Number of vacancies this year	List of occupation (maximum 5) this year (ISCO-88)	Number of vacancies in the next 12 months	List of occupation (maximum 5) in the next 12 months
Total		Total	

C.10 Are any vacancies proving hard to fill?

Yes	1	Go to C.12
No	2	Go to D.1

C.11 Could you please indicate how many vacancies are proving hard-to-fill? *(Up to five occupations)*

Occupation	Number	Main Reason
1		
2		
3		
4		
5		

C.12 Could you please indicate the channels in which you advertise your vacancies to the public?

Channels	Choose (one or more)
Newspaper	
Radio	
TV	
Facebook	
Websites	
SEPFOPE	
Recruitment agency (eg Konekto)	
Never advertised	
Others	

Section D – Future Hiring

D.1 Do you think the number of people working in your company will increase, decrease, or remain the same in the next 12 months?

Increase (How many? _____)	1	Go to D.2
Decrease (How many? _____)	2	Go to E.1
Remain same	3	Go to E.1

Section E – Skills Gaps and Workforce Training

E.1 For each occupation, do you have problem related to your employees who do not perform jobs at the required level?

Yes	1	Go to E.2
No	2	Go to E.4

E.2 Could you please indicate those positions (occupations) where you find workers are not performing at the required level? *(List up to 5 occupations)*

No.	Occupation category	ISCO Code			
1					
2					
3					
4					
5					

E.3 Among your employees who are not able to do their jobs at the required level, which, if any, of the following skills need to be improved?

1		Literacy	Reading and comprehending instructions, guidelines, manuals or reports
2		Numeracy	Using and understanding numerical or statistical information (for example, in graphs, charts and tables)
3		IT literacy/using IT	Data entry, sending and receiving e-mails or printing. Word processing or spreadsheets
4		Advanced IT application/development	Analysing information; statistical analysis, software programming, managing computer networks
5		Oral communication	Giving instruction to others, describing problems and reporting results

6		Written communication	Writing instructions, guidelines, manuals or reports
7		Public speaking/instructing/training	Making speeches or presentations to internal or external audiences
8		Customer handling	Persuading or influencing others, whether colleagues, clients or customers
9		Team working	Working as member of group or team
10		Taking initiative	Learning new ideas, methods or techniques, adapting to new equipment or materials
11		Knowledge of foreign language	Communicating in a foreign language
12		Planning and organizing	Determining own tasks, working methods and speed of work without consulting managers or supervisors
13		Management responsibilities/taking lead	Setting objectives and planning human, financial and other resources. Instructing, training or teaching people, individually or in groups
14		Manual dexterity	Manual dexterity (for example, to mend, repair, assemble, construct or adjust things)
15		Clerical/administrative tasks (please specify)	
16		Job-specific tasks in construction industries (please specify)	
17		Job-specific tasks in automotive industries (please specify)	
18		Job-specific tasks in accommodation and food services (please specify)	
19		Other job-specific tasks (please specify)	

E.4 Last year, did your employees participate in any external or internal training courses, completely or partially financed by the company?

Yes	1	Go to E.5
No	2	Go to E.6

E.5 In which areas did your company finance the training?

1		
2		
3		
4		
5		
6		
7		
8		

9		
10		

E.6 What are the specific training needs for your employees in different occupations?

No.	Occupation category	ISCO Code				Training needs
1						
2						
3						
4						
5						

E.7 Are you aware of TVET providers for workers that you usually recruit (TVET = Technical Vocational and Education Training)?

Yes	1
No	2

E.8 Do you recruit any of your workers from specific TVET providers?

Yes	1
No	2

E.9 Could you please indicate TVET training providers, type of workers trained, and level certificate of the workers you have recruited.

	TVET training provider	Type of workers trained	Level of Certificate					
			None	Basics	1	2	3	4
1								
2								
3								
4								
5								

E.10 Please list the specific TVET training providers and the type of workers trained? For each TVET training provider, please specify your level of satisfaction of the workers who were recruited?

	E10a. TVET training provider	E10b. Type of workers trained	E10c. Level of satisfaction of workers who were recruited		
			Very satisfied	Satisfied	Not satisfied
1			1	2	3
2			1	2	3

	E10a. TVET training provider	E10b. Type of workers trained	E10c. Level of satisfaction of workers who were recruited		
			Very satisfied	Satisfied	Not satisfied
3			1	2	3
4			1	2	3
5			1	2	3

Thank you very much for your time!

Personal details of the contact person

1. Name of the contact person_____

2. Position of contact person_____

3. Tel mobile _____4. Tel business_____

5. Email_____

Interview control section

6. Visit	1	2	3	4
7. Date				
8. Start time				
9. End time				

10. Interview result (Check appropriate code)		
1		Questionnaire fully completed
2		Questionnaire partially completed
4		Refusal
5		Not active
6		Address not found
7		Company not found
8		Other, specify

11.Name of the interviewee (if different from contact person) _____

12. Position of the interviewee (if different from contact person) _____

13. Interviewee mobile _____14. Interviewee's tel business _____

ANNEX D: LIST OF OFFICIALS INVOLVED

Survey Managers

1. Jenifer Antonio da Cruz Pui
2. Jose Bento
3. Mariano da Costa

Field operation

1. Jasinta do Rego
2. Miguel de Araujo Malik
3. Quintino Queros
4. Maria Peregrina Duarte Sarmento
5. Eliza Benevides Pinto
6. Natasha F. Simoes
7. Ervina Garcia

Consultants

1. Eoghan Walsh (International)
2. Leoneto Elizario (National)