



LABOUR MARKET
INTELLIGENCE PARTNERSHIP

SETA Labour Market Pilot Survey

Results and Key Learnings

5 August 2015

Development Policy Research Unit

Outline

- Purpose and aims of the survey
- Survey process
- Results
- Key data collection challenges
- Learnings and recommendations

Overall purpose and aims of the survey

- Through discussions with the wider reference group – HSRC, DHET, and SETAs – it was concluded that the overarching purpose of the survey is for it to act as a tool to contribute to the process of establishing a credible skills planning mechanism
- The survey calls for collaboration amongst all the relevant role players to achieve this purpose – an important step in the development of a credible skills planning mechanism
- Furthermore, we will aim to test whether this survey provides *better quality data* from firms, leading to *more meaningful insights* on skills planning

Survey Process: Phase 1 Pre-pilot

- merSETA was chosen as the first SETA in which to pilot the survey given that the existing quality of data from firms is relatively better than in other SETAs
- Pre-pilot the survey using 100 firms to ensure that the questionnaire is easily understood and that we are obtaining the required data
- The pre-pilot was concluded in June 2014 and the questionnaire and the survey process was adjusted as necessary

Survey Process: Phase 2 Full Pilot

- The merSETA full pilot survey began in July and concluded on 23rd September 2014
- Through a good working relationship with merSETA and the survey company, we have maximized our efforts to improve the performance of the survey
- The size and quality of the dataset meant we were able to conduct meaningful analytics with the unit record data

The survey data

- These results are indicative and describe the dataset we have
 - This data is not necessarily representative of the industry since it is not a random sample, and not a census given that not all firms responded
- We aimed to stratify the sample along two dimensions: subsector and firm size
- merSETA has five subsectors: metal and engineering, auto manufacturing, motor retail and component manufacturing, tyre manufacturing, and plastics
- There are three firm size categories: small (0-49 employees), medium (50-249 employees) and large (250+ employees)

The response rate

- The Part A dataset is at the employee-level:
 - We have captured about 6,400 employees from about 240 different firms
- The Part B dataset is a firm-level dataset:
 - We have collected data from about 690 firms

Part A responses (number of firms)

	0-49	50-149	150+	Total
Auto	10	0	2	12
Metal	77	10	31	118
Motor	52	5	20	77
Tyre	7	4	0	11
Plastics	10	5	4	19
Unknown	4	0	0	4
Total	160	24	57	241

Part B responses (number of firms)

	0-49	50-149	150+	Total
Auto	31	2	3	36
Metal	205	93	56	354
Motor	147	47	26	220
Tyre	10	4	2	16
Plastics	23	20	11	54
Unknown	5	0	1	6
Total	421	166	99	686

The structure of the sample

The merSETA
population
(%)

	Small	Medium	Large	Total
Auto	61	25	14	6
Metal	54	28	17	54
Motor	61	27	12	29
New Tyre	66	21	13	1
Plastics	45	36	18	9
Total	56	28	16	100

Part A sample
(%)

	Small	Medium	Large	Total
Auto	83	17	0	5
Metal	65	26	8	50
Motor	68	26	6	32
New Tyre	64	0	36	5
Plastics	53	21	26	8
Total	66	24	10	100

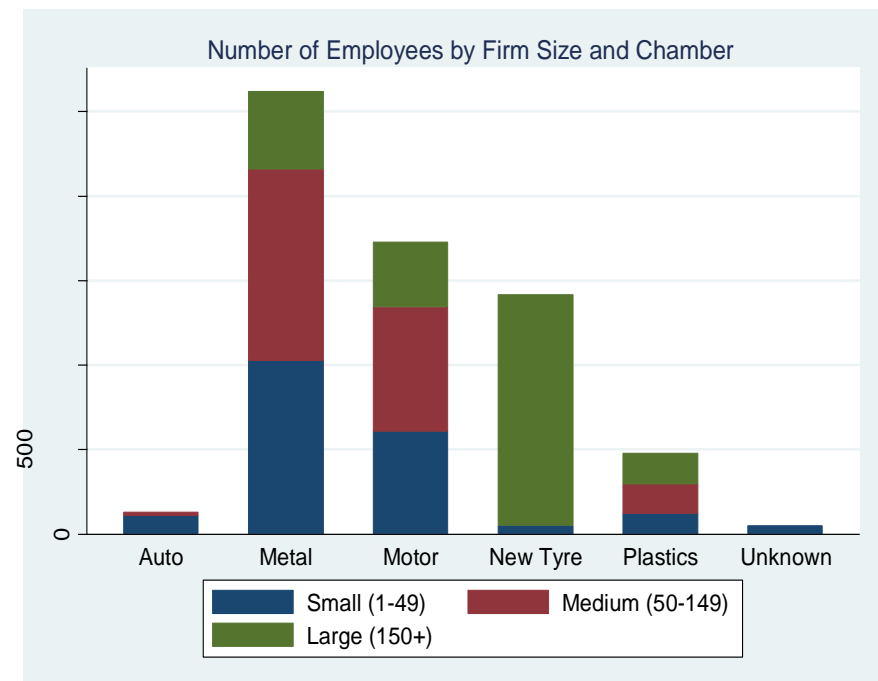
Part B sample
(%)

	Small	Medium	Large	Total
Auto	86	6	8	5
Metal	58	26	16	52
Motor	67	21	12	32
New Tyre	63	25	13	2
Plastics	43	37	20	8
Total	61	24	14	100

A snapshot of the merSETA labour market

	Auto	Metal	Motor	Tyre	Plastics	Total
Employees (n)	131	2 620	1 726	1 416	478	6 422
Employees (%)	2%	41%	27%	22%	7%	100%
Firms (n)	12	116	75	11	19	237
Firms (%)	5%	49%	32%	5%	8%	100%
Mean employees per firm	11	23	23	129	25	27

- Average number of employees per firm shows that firms are on average largest in the tyre sector and smallest in auto
- The graph shows that employment in the tyre chamber is dominated by large firms, whereas in the other sectors, small and medium firms are the source of the large majority of employment



Individual characteristics of employees

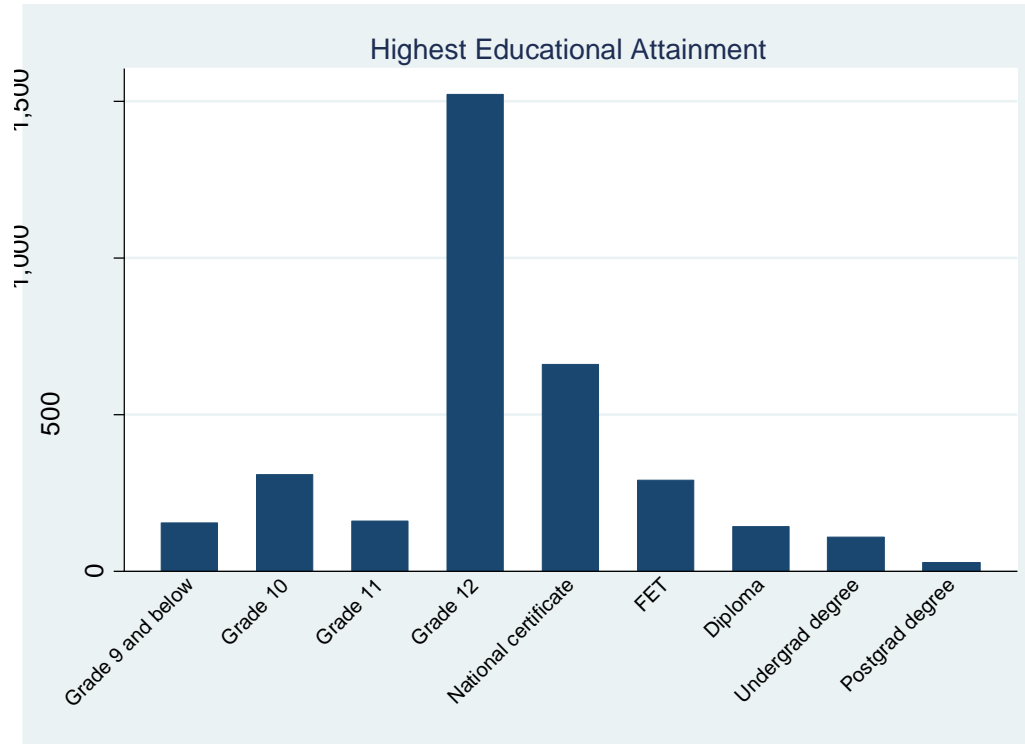
	Auto	Metal	Motor	Tyre	Plastics	Other	Total
Gender							
Ratio of men to women	5.0	4.5	2.6	9.2	2.7	7.5	4.1
Race							
Ratio of African to White	1.2	1.5	1.1	4.5	2.4	0.3	1.4
Ratio of Africa to Coloured	2.0	5.4	11.5	36.0	1.0	0.3	4.4
Ratio of African to Indian	3.2	35.9	4.5	6.0	4.5	-	8.9
Age (%)							
16-24	16.8	7.1	9.9	6.5	6.5	5.9	7.8
25-39	44.3	43.5	51.0	43.1	41.6	45.1	45.3
40-54	29.8	29.5	29.0	34.3	25.7	33.3	30.2
55-65	6.1	10.3	7.2	15.7	8.2	15.7	10.5
65+	3.1	9.1	1.9	0.2	18.0	0.0	5.7
Youth intensity	1.15	0.95	1.15	0.93	0.91	0.96	1.00

Individual characteristics of employees (cont.)

	%	Auto	Metal	Motor	Tyre	Plastics	Total
Location							
Eastern Cape		19.1	3.6	4.1	96.5	0.0	24.5
Free State		4.6	4.9	2.8	-	-	2.8
Gauteng North		15.3	45.6	43.1	-	20.1	32.0
Gauteng South		-	14.7	3.2	-	-	6.9
KwaZulu-Natal		26.7	4.3	9.8	3.5	17.2	7.0
Limpopo		-	-	7.0	-	-	1.9
Mpumalanga		-	0.5	20.1	-	-	5.6
North West		16.0	4.4	-	-	-	2.1
Northern Cape		-	-	0.8	-	-	0.2
Western Cape		18.3	22.0	9.0	-	62.8	17.0

- A typical employee in the merSETA labour market would be an African male, between the ages of 25 and 39, employed in Gauteng (with a Grade 12 completion)
- This typical profile does not vary much between sub-sectors, except for plastics: typical employee would be either an African or Coloured male, between the age of 25 and 39, employed in the Western Cape, with a Grade 12

Educational profile



- Of all employees in our database, 45% of them have completed a matric schooling qualification as their highest level of education
- Just over 16% of all employees have attained an FET qualification, a diploma or a degree

A semi-skilled intensive SETA labour market

	%	Auto	Metal	Motor	Tyre	Plastics	Total	National
Grade 12 only		76.6	50.6	78.4	3.8	75.7	65.9	69.0
National Certificate		9.4	26.4	10.3	88.5	10.0	18.0	7.0
FET Qualification		4.7	7.9	5.1	3.8	1.4	5.9	3.0
Diploma		7.8	8.6	2.6	0.0	4.3	5.2	12.9
Undergrad Degree		1.6	4.9	3.0	3.8	5.7	3.9	7.35
Post-grad degree		0.0	1.6	0.5	0.0	2.9	1.1	0.8
Skills Intensity Ratio		0.87	1.43	0.70	0.48	0.89	1	

Note: Sample restricted to those that have at least completed Grade 12

- This SETA labour market draws a large number of Grade 12 completers – workplace training is then a key component of skills development
- Metal has the highest skills intensity (23% of workers have an FET, diploma or degree), followed by auto and plastics (14% of workers have an FET, diploma or degree). The tyre sector has the lowest skills intensity
- Low share of FET graduates

Earnings by subsector

	Mean	Ratio to total average wage	Ratio to national average manufacturing wage
Auto	9 328.90 (7892.12)	0.89	0.71
Metal	10 585.73 (11166.74)	1.01	0.80
Motor	11 586.50 (10733.5)	1.10	0.88
New Tyre	6 169.17 (5204.79)	0.59	0.47
Plastics	6 742.87 (6577.51)	0.64	0.51
Total	10 513.50 (10527.16)	1.00	0.80

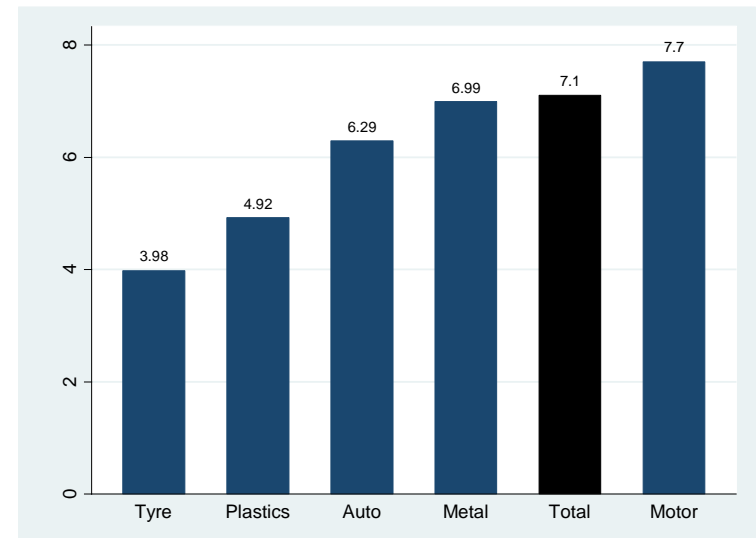
Notes:

1. Standard Deviations are shown in parenthesis
2. National monthly average manufacturing wage used is R13,155, from the Quarterly Employment Survey, August 2013
3. The merSETA labour market does not perfectly align with StatsSA's national sectoral classification of the manufacturing sector. In particular, sub sectors such as Textiles, Clothing and Footwear, as well as Chemicals fall within the manufacturing sector in national survey data, but is not included in our merSETA survey of firms

Earnings by subsector (cont.)

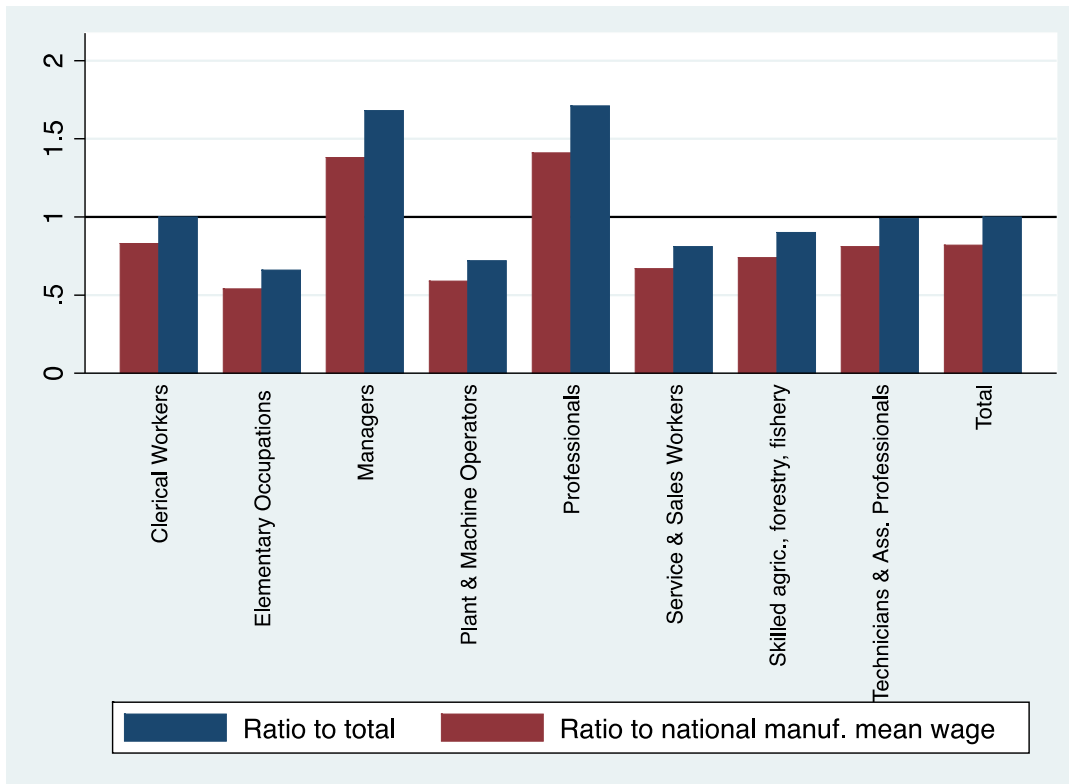


Ratio of the top 20% of incomes to the bottom 20% of incomes



- The averages hide some of the distributional differences – the motor sector has a wider income distribution than the metal sector
- According to World Bank data, the ratio of the top 20% of incomes in South Africa nationally are *25 times* the bottom 20% of incomes. In that context, it would seem that the merSETA labour market is relatively more equitable than the national average

Earnings by occupational level



- Managers earn on average 2.6 times the average earnings of those in elementary occupations. Relative to average earnings in merSETA, managers and professionals earn 1.7 times more. Elementary occupations earn two-thirds the sector's average
- Using the average national manufacturing wage as an alternative benchmark, managers and professionals in merSETA firms earn more than the national average

Snapshot of training activities

	Auto	Metal	Motor	New tyre	Plastics	Total
Completed training (%)	51.4	42.7	53.0	1.7	79.8	38.6
Currently on training (%)	27.0	13.7	7.9	0.0	1.5	7.7
Did not complete training (%)	5.4	0.3	0.3	0.0	0.0	0.3
No training (%)	16.2	43.3	38.8	98.3	18.7	53.3
Training intensity ratio	1.33	1.11	1.37	0.04	2.07	1.00
Training sessions (#)	74	866	1128	19	272	2376
Training sessions per employee	1.30	1.39	1.41	1.00	1.01	1.34

- Plastics is the most training intensive sub-sector, whereas the tyre sector has not conducted much training in the last year
- For those employees that are trained, the motor and metal sub-sectors provide the most amount of training per individual

Relative training intensity ratios

	Auto	Metal	Motor	New tyre	Plastics	Total
Firm size						
Small firm	80.2	47.4	41.3	38.0	36.0	46.1
Medium-sized firm	65.0	73.4	53.4	-	100.0	66.1
Large firm		45.8	100.0	0.0	94.8	34.6
Gender						
Men	79.6	55.6	64.2	1.8	79.5	44.9
Women	66.7	57.9	51.4	0.0	85.7	52.0
Ratio of women/men	0.8	1.0	0.8	0.0	1.1	1.2
Race						
Ratio of African/White	1.1	0.7	0.8	-	1.1	0.8
Age						
15-24	80.0	76.7	68.3	4.2	92.9	69.1
25-39	79.6	55.8	65.9	2.9	82.2	51.0
40-54	70.6	47.5	57.3	0.2	79.4	38.5
55-65	87.5	53.2	34.3	0.5	68.8	26.4
65+						

Relative training intensity ratios (cont.)

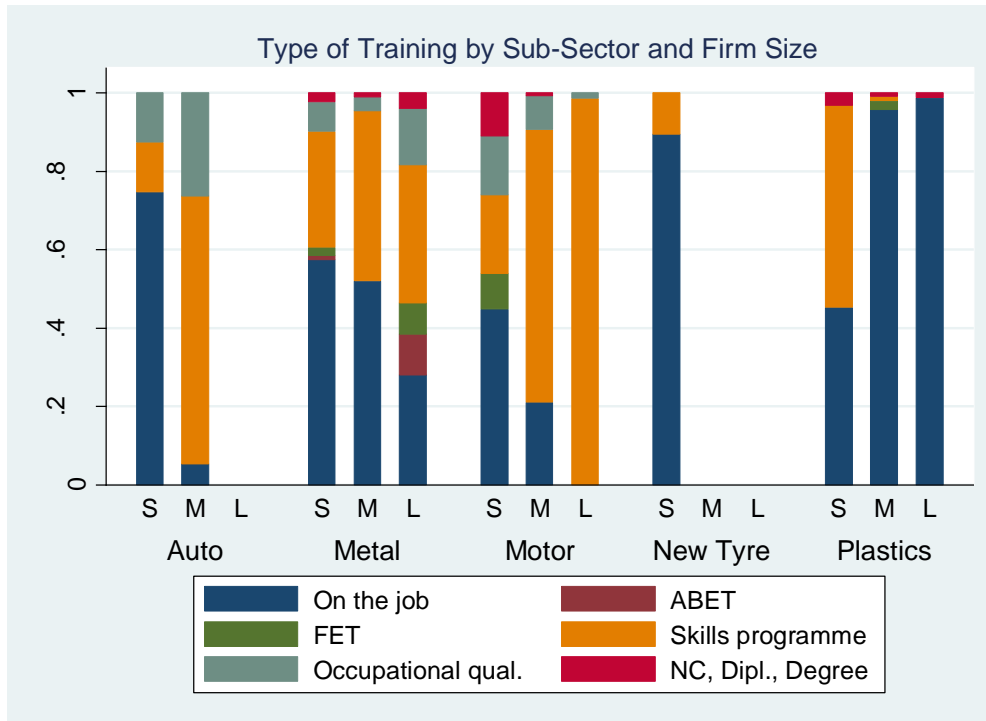
Occupation	Auto	Metal	Motor	New tyre	Plastics	Total
(1) Managers	100.0	36.2	82.1	0.0	41.7	59.5
(2) Professionals	100.0	62.3	88.6	0.0	42.9	58.0
(3) Technicians and Associate Professionals	60.0	33.7	68.8	0.0	66.7	42.7
(4) Clerical Support Workers	66.7	71.4	53.4	0.0	80.0	57.5
(5) Service and Sales Workers	100.0	33.3	57.5	20.0	100.0	55.9
(6) Skilled agriculture, forestry, fishery, craft	100.0	63.6	66.4	0.0	50.0	47.3
(7) Plant and Machine Ops & Assemblers	66.7	44.1	56.8	0.0	94.8	51.7
(8) Elementary Occupations	100.0	57.5	19.4	41.7	98.5	49.8
Ratio of 1+2 / 7+8	1.2	1.0	2.2	-	0.4	1.2

Note: This table (following from previous slide) provides a relative measure of training intensity by each characteristic. For example:

$$\left(\frac{\text{women trained}}{\text{women employed}} \right)_i \text{ for each chamber, } i.$$

- An average trainee in the metal sector is an African male, employed in a medium-sized firm, between the ages of 25-39, in a major occupational category in the range 6-8
- An average trainee in the auto sector is an African male, employed in a small firm, between the ages of 25-39, in one of the top 3 major occupational categories

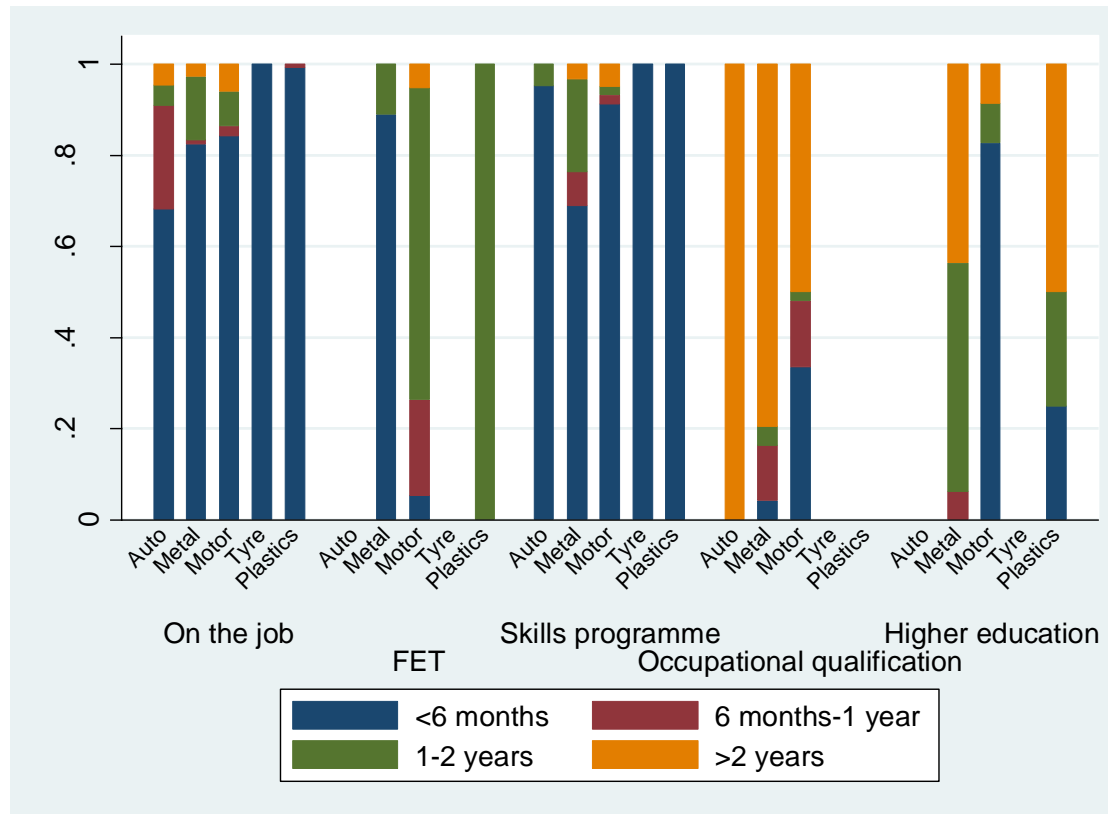
Type of training by sub-sector and firm size



Common types of skills programmes: machinery training, fire fighting, product knowledge, tyre building skills programme, and communication skills

- 42% of all training is 'on the job' training and 48% is targeted skills programmes
- However, there is considerable variation in the type of training offered by different firms
- While on the job training dominates the type of training in small auto and plastics firms, medium and large motor firms predominantly provide training relating to specific skills programmes

Training duration by sub-sector & training type



- Almost all on the job training and skills programmes takes less than 6 months per employee
- Overall, just under 20% of all training takes more than 6 months

Estimating the private returns to training

- Economic theory tells us that higher levels of education are associated with higher earnings. Workplace training then, has been seen to be an important area of post-schooling human capital accumulation
- We estimate the relationship between earnings and individual characteristics, including a dummy variable for whether the individual was trained, as well as the type of training in later specifications. It is the coefficients on these training variables that we are most interested in
- Lastly, we also use interaction terms to uncover whether there are group-specific returns to training

Mincer wage equation with a training dummy and individual-level controls:

$$\ln(W) = \alpha_0 + \delta T + \gamma S + \beta_1 X + \beta_2 X^2 + \beta_3 Z + e$$

Average returns to training



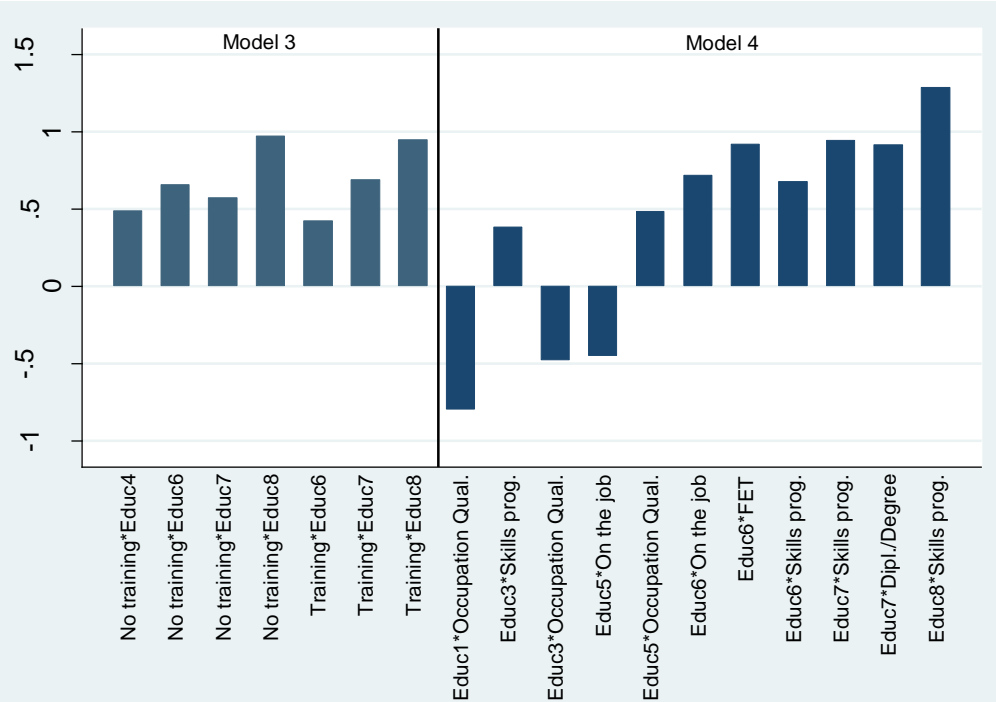
Dep variable: Log of Wages	Model 1	Model 2
Grade 11	0.168**	0.0177
<i>(std. errors)</i>	<i>(0.0831)</i>	<i>(0.0983)</i>
Grade 12	0.699***	0.197**
	<i>(0.0497)</i>	<i>(0.0767)</i>
National Certificate	0.828***	0.293***
	<i>(0.0543)</i>	<i>(0.0790)</i>
FET qualification	0.528***	0.0795
	<i>(0.0672)</i>	<i>(0.0901)</i>
Diploma	1.383***	0.724***
	<i>(0.0869)</i>	<i>(0.113)</i>
Honours Degree	1.413***	0.752***
	<i>(0.0947)</i>	<i>(0.119)</i>
Postgrad Degree	1.487***	1.114***
	<i>(0.221)</i>	<i>(0.275)</i>
Experience	0.0450***	0.0416***
	<i>(0.00513)</i>	<i>(0.00591)</i>
Experience ²	-0.000748***	-0.000757***
	<i>(0.000108)</i>	<i>(0.000124)</i>
Completed Training	0.251***	0.0518
	<i>(0.0313)</i>	<i>(0.0445)</i>

- In Model 2: The coefficient on the ‘completed training’ dummy remains positive but is no longer significant
- Factors influencing this result include the fact that perhaps individuals at different initial educational levels experience different returns to training, therefore on average there is no significant effect but there may be for certain groups of employees

Model 1 controls: None

Model 2 controls: Gender, race, occupational level, firm size and sub-sector

Group-specific returns to training



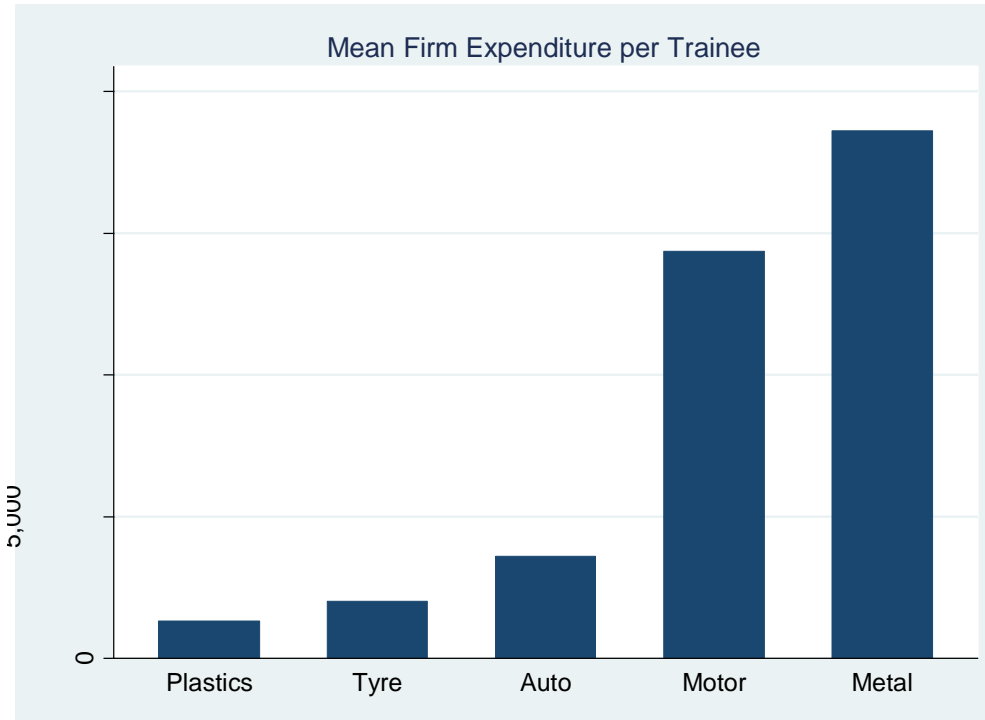
- The only significantly positive returns to training are for those who already have at least a post-matric diploma or higher
- Returns to skills programmes increases with the initial level of education
- While on the job training is associated with –ve average returns, at some sufficiently high enough level of initial education, there are +ve returns to on the job training
- Those with an initial level of education of at least a post-matric diploma, experience positive returns to a wider range of training programmes and returns that are also higher

Training expenditure by sub-sector and firm size

	Small	Medium	Large	Total mean	Ratio to total
Auto	98 636.36	7 500.00	333 333.33	117 962.96	1.49
	(168106.98)	(10606.6)	(288675.13)	(189332.12)	
Metal	46 134.97	55 065.79	173 048.78	67 142.86	0.85
	(97124.23)	(90057.36)	(207333.9)	(125564.16)	
Motor	39 521.74	140 781.25	291 956.52	92 735.29	1.17
	(102128.6)	(198645.04)	(244460.16)	(172681.65)	
Tyre	5 555.56	171 666.67	500 000.00	111 785.71	1.41
	(5833.33)	(284443.9)	(0)	(210462.93)	
Plastics	14 285.71	41 428.57	187 000.00	69 736.84	0.88
	(12066.66)	(48414.42)	(223124.28)	(134786.86)	
Total mean	44 845.20	77 165.35	223 797.47	79 328.92	1
	(102862.63)	(133479.96)	(228246.12)	(149170.29)	
Ratio to total	0.57	0.97	2.82	1	

- The auto sector spends relatively more on training per year than the other sectors
- Large firms spend relatively more than the average firm training expenditure

Training expenditure per trainee



- Metal firms on average spend the largest amount per trainee at about R18,600 per annum, followed by motor firms at about R14,300 per trainee
- On the other end of the spectrum is plastics firms, which spend an average of R1,300 per trainee per year

Skills gaps measured as hard-to-fill vacancies

- There were 130 different occupations/job titles with vacancies that were hard-to-fill. Thus, most vacancies were not difficult to fill, and were done so within 6 months
- The top 10 hard-to-fill vacancies make up almost 40% of all hard to-fill-vacancies

	Number of firms	Percent
Sales person	10	8%
Engineer	6	5%
Mechanic	5	4%
Admin clerk/assistant	4	3%
Apprentice	4	3%
General workers	4	3%
Sales managers	4	3%
Spray painter	4	3%
Technician	4	3%
Finance	4	3%

Determinants of firm-level training expenditure

Dependent var: log of training expenditure	(1)	(2)	(3)
Profitability⁽¹⁾	0.421***	0.399***	0.371***
	(0.0239)	(0.0394)	(0.0482)
Seta engagement		-0.774	-0.686
		(0.654)	(0.772)
Discretionary grant		0.164**	0.169**
		(0.0660)	(0.0789)
Vacancies		0.00790	
		(0.00934)	
Hard to fill vacancies			0.0100
			(0.0205)
Constant	2.610***	0.187	0.397
	(0.421)	(1.531)	(1.788)
	Controls: Sub-sector, firm size, type of training institution		
Observations	340	161	122
R-squared	0.503	0.590	0.570

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

- The choice of training institution has no significant association with firms' training expenditure
- Firm level training expenditure is significantly and positively related to the measure of firm profitability
- Firms that receive a larger amount in discretionary grants do spend relatively more on training
- Internal vacancies do not seem to significantly correlate with increased firm expenditure

Data collection challenges

- The ability to convert job titles into 6-digit OFO codes is a major challenge to the quality of the data (almost all employees had a job title, but only 50% a corresponding OFO code)
 - Most codes were at least within the right major occupational groups (1 – 8)
 - Many OFO codes reported in our data do not exist in the official list of OFO codes, therefore we had to re-map the job titles with 6-digit OFO codes
- There are also difficulties with the firms providing associated NQF levels for each type of training
- Individual level salary information is not well answered questions – firms prefer quantity ranges, instead of providing actual estimates

Data collection challenges

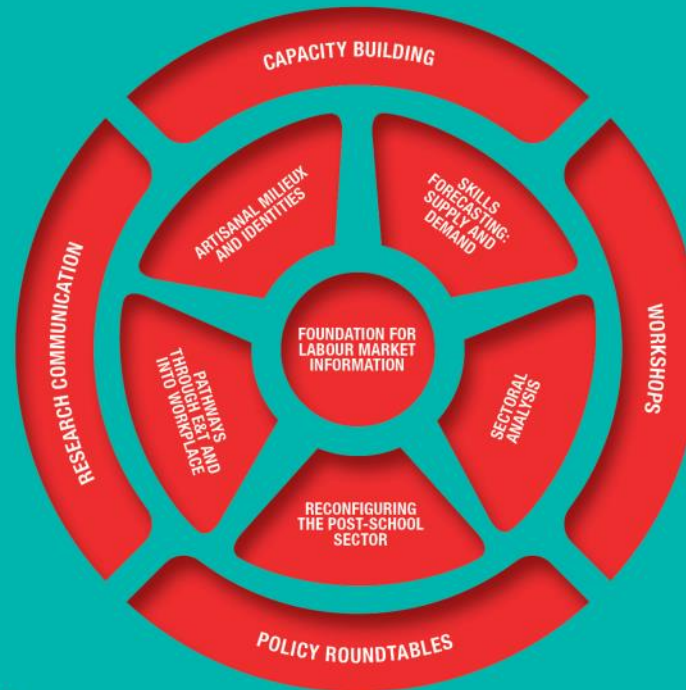
- Questions relate to both human resources and finance, therefore completing the survey is a collaborative effort
 - Some firms have external Skills Development Facilitators (SDFs), which means that some SDFs had to complete this for more than one firm which they did not have the capacity to do

Learnings and recommendations

- Internal learnings about the firm survey process and firm communication strategy to inform the institutionalization of the survey
 - There needs to be buy-in from the CEO or top level management
 - Essentially, an internal member of staff should champion the survey and oversee the process
- The data we received from firms during our survey makes it clear that without an incentive, firms can and are willing to provide both unit record and firm-level data
- Similar to the Employment Equity legislation, this type of a survey could be legislated and made compulsory for firms to report on. One could explore a shorter survey as well as one with fewer variables
- In the case where the survey is not legislated, the mandatory grant can act as an incentive for firms to provide the data required

Learnings and recommendations

- Individual unit record data should be the aim of such a survey as it allows for the tracking of training of all workers over time
 - Only with unit record data can we measure, for example, the impact of training on employees labour market outcomes (e.g. wages)
- If firms can link each employee with a consistent unique ID (such as a national ID), we can create a panel dataset over time – tracking individuals even as they move between firms
- Without unit record data, firms may hide behind aggregates such as average training expenditure per worker, when actually training may only be benefiting a select group of employees
- The flexibility of the unit record data means that various types of reports can be generated from this data – from detailed employee-level analysis to more aggregated firm and sector analysis



HSRC CONTACTS

Programme director
Vijay Reddy
vreddy@hsrc.ac.za

Project leader
Glenda Kruss
gkruss@hsrc.ac.za

DHET CONTACTS

Deputy Director-General
Mr F Patel
Patel.F@dhet.gov.za

Project secretariat support
Dr H Narsee
Narsee.H@dhet.gov.za

Project secretariat support
Ms L Mokwena
Mokwena.L@dhet.gov.za

Project secretariat
Ms M Ramasodi
Ramasodi.M@dhet.gov.za

