

Training and employee use of skills in Scotland: some evidence¹

John Sutherland
Centre for Public Policy for Regions (CPPR)
University of Glasgow

Increasing labour productivity is considered to be the most important means by which the Scottish Government will achieve its principal economic objective of increasing sustainable economic growth (Scottish Government, 2007a, p.1); and the policy assumption is that labour productivity will increase, directly and indirectly, as a consequence of increasing workforce skills levels (Leitch Review of Skills, 2007: Scottish Government, 2007b, p6). However, increases in human capital investments, especially over the last two decades, have not been translated into improvements in labour productivity. As the Scottish Government (2007a) itself acknowledges: "... strong performance on skills and qualifications does not feed through effectively enough to productivity" (p14).²

There are several, not necessarily competing, arguments forwarded to explain why historically significant, predominantly publicly funded, increases in education and training have not materialised into improvements in labour productivity, an outcome which is not unique to Scotland (cf. Keep et al, 2006: Wolf, 2004). This paper reports research (Sutherland, 2008) which examined two of these.

One argument is related to the important distinction between 'qualifications' and 'skills'. Whereas the labour market continues to receive on-flows of increasingly well qualified new entrants, nonetheless, the argument proceeds, too many firms fail to provide the necessary complementary job specific training. The second argument contends that individuals do possess skills – for example, the 'broad' skills and 'generic' skills to which Felstead and Green (2008) refer. The problem, so this argument proceeds, is that too many firms make inadequate and inefficient use of these skills, and workers' skills are under-utilised as a consequence.

The research undertaken made use of a matched workplace-employee data set which had its origin in the 2004 Workplace Employment Relations Survey, and

examined responses to questions in the Survey of Employees. The principal findings of the research were twofold: first, that almost one in three employees in Scotland had received no training during the last 12 months; and second, that more than half of all employees claimed that the skills levels they possessed were higher than those required to do their present jobs. In other words, there is some empirical substance to both of the arguments identified above.

The remainder of this paper proceeds as follows. The next section describes the data set used in the study. The following two sections examine the issues of training and skills under-utilisation, respectively. A final section concludes and draws some policy implications from the findings of the study.

The data set

The empirical investigation made use of a matched workplace-employee data set which has its origin in two elements of the Cross Section component of the 2004 Workplace Employment Relations Survey (WERS 2004), the fifth in a series of equivalent surveys which map the contours of employment relations in Great Britain (Kersley et al, 2006).

The initial unit of analysis in the survey is the workplace, defined as "the activities of a single employer at a single set of premises" employing at least five workers. The population of workplaces sampled is drawn randomly from the International Departmental Business Register (IDBR) maintained by the Office for National Statistics. The sampling unit is the IDBR's 'local unit', which conforms to the definition of the workplace used. The population from which the sample is drawn constitutes 700,000 workplaces (33 percent of the Great Britain (GB) total) and 22.5 million employees (89 percent of the GB total). The sample selected is stratified by workplace size and industry, with workplaces being randomly selected from within size bands and industries. Larger workplaces and certain industries (e.g. utilities) are given a greater probability of being selected across the sample, to ensure comparability with smaller firms and other industries, respectively. Establishment and employment weights are applied to ensure that the final achieved sample is representative of the survey population from which it is drawn.

The first element of WERS 2004 used was the 'Cross Section Survey of Managers', the questionnaire responses of the senior manager at the workplace responsible for employment relations on a day-to-day basis. This provides information, inter alia, on the structural characteristics of the workplace, such as the number of employees employed; the number of employees who are female; the number of employees who work part time; its corporate status; its Standard Industrial Classification; and the human resource management policies in operation. In the original survey, this generated 2,295 observations.

Table 1: Question: “Apart from health and safety training, how much training have you had during the last 12 months, either paid for or organised by your employer?” Percentage distribution of responses

<i>Days of training received</i>	<i>Percentage</i>
None	32.33
Less than 1 day	9.95
1 to less than 2 days	15.16
2 to less than 5 days	22.74
5 to less than 10 days	11.39
10 days or more	8.42
Number of Observations	2,493

Table 2: Question: “How satisfied are you with the following aspects of your job? The training you receive?” Percentage distribution of responses

<i>Response</i>	<i>Percentage</i>
Very satisfied	8.60
Satisfied	40.09
Neither satisfied nor dissatisfied	27.09
Dissatisfied	16.67
Very Dissatisfied	7.55
Number of Observations	2,477

Table 3: The number of days of training received by employees, by the size category of the workplace at which the individual was employed (row percentages)

Size Category	None	Less than 1 day	1 to less than 2 days	2 to less than 5 days	5 to less than 10 days	10 days or more	Total number of observations
Employing 10 or fewer	65.00	6.25	11.25	8.75	6.25	2.50	80
Employing 11 – 25	30.33	8.06	14.69	24.17	15.17	7.58	211
Employing 26 – 50	34.11	8.36	16.72	23.41	12.37	5.02	299
Employing 51 – 100	35.61	12.95	12.59	20.14	10.07	8.63	278
Employing 101 – 200	24.48	9.11	15.36	26.82	13.80	10.42	384
Employing 201 – 500	36.49	10.90	14.69	24.17	7.11	6.64	211
Employing more than 501	31.39	10.13	13.92	25.57	10.38	8.61	395
Total	32.94	9.74	14.53	23.63	11.36	7.80	1,858

Person chi-square (30) = 76.1653 Pr = 0.0000

Table 4: Question: “How well do the work skills you personally have match the skills you need to do your present job?” Percentage distribution of responses

<i>Response: My Own Skills Are:</i>	<i>Percentage</i>
- Much higher	19.14
- A bit higher	34.15
- About the same	42.39
- A bit lower	3.48
- Much lower	0.84
Number of Observations	2,498

Eighty-six percent of the workplaces which participated in the survey of managers agreed to distribute a self completion questionnaire to a random selection of up to 25 employees. This 'Survey of Employees' constituted the second element of WERS 2004 used. This survey collects information, again inter alia, on employees' experiences at the workplace, such as the number of days of training received in the past 12 months; their work-related perceptions, such as the extent of their satisfaction with the training received and the extent to which their skill levels match the skill levels required to do their present jobs; and personal information relating to age, gender, pay, tenure etc.. In the original survey, this generated 22,451 observations.

WERS 2004 is statistically representative for the spatial area of 'Great Britain'. Making use of two regional identifiers – the Government Office Region and the Standard Statistical Region – it is possible to disaggregate the data set geographically. Doing so for Scotland generates a workplace data set of 223 observations and a matched workplace-employee data set of 2,515 observations.^{3,4}

The amount of training received by employees

One of the questions in the Survey of Employees asked: "Apart from health and safety training, how much training have you had during the last 12 months, either paid for or organised by your employer?" One in three received no training of the type described: one in ten received less than one day. On the other hand, 8.42 percent received 10 days or more (cf. Table 1). Employees were also asked how satisfied they were with the training they received. This question is somewhat ambiguous, failing to identify 'satisfaction' with what? For example, the quantity of training received?: its quality?: the manner in which it was delivered? Nonetheless, almost half reported that they were either 'satisfied' or 'very satisfied'. Almost one in four, however, reported degrees of dissatisfaction (cf. Table 2).

Given the manner in which the question was worded, the training reported is more likely to be formal training, and, therefore, more in accord with the training policies to be found in larger workplaces. Typically, in smaller firms, training is informal, on-the-job, and more embedded into the immediate context of work. Here, skills tend to be acquired subconsciously, as it were, by a process of osmosis (Keep, 2007). Indeed, a statistically significant association between the quantity of training an individual received and the size of the workplace at which he/she is employed is confirmed in Table 3.

This table also demonstrates the extent to which individuals employed in the smallest workplace (ie employing 5 -10) received less training than those employed in workplaces employing more than 10. 65 percent of those employed in the smallest sized workplace received no training of the type described, whereas the percentage of workers who received no

training in workplaces larger than this is always less than 37 percent. Further, the percentage of workers in the smallest workplace who received the different amounts of training identified is always lower than the corresponding percentages of workplaces of relatively larger sizes. However, it is not as if small workplaces per se provide no training. The percentages associated with the three other workplace size categories employing 100 or less equals – and sometimes better – the percentages associated with the three largest workplace sizes employing more than 100, across all sets of training days received. Moreover, more than three in 10 of employees in the largest workplace size category received no training.

The size of the workplace at which an individual is employed, however, is only one of several variables which may explain the amount of training an individual received. Accordingly, an ordered logit model was estimated, which had three distinct sets of independent variables. The first set reflected individual work-related and non-work-related personal characteristics (such as tenure, contract type, age, and gender); the second, reflected the structural characteristics of the workplace at which the individual was employed (such as its size, the percentage of employees who are female/work part time, corporate status and standard industrial classification); and the third, reflected the Standard Industrial Classification (SIC) of the workplace.⁵

In this more sophisticated micro-econometric analysis, there was no statistically significant evidence that the size of the workplace at which the individual was employed was an important determinant of the amount of training that an individual received. Rather, the amount of training an individual received was explained best by his/her personal characteristics and the industrial sector of the workplace at which he/she was employed. No training was likely to be given to women, those in low waged jobs, older workers, and those with long tenure. Further, training was less likely to be given to individuals employed at workplaces in Manufacturing, Hotels and Restaurants and Other Business Services. Conversely, training was more likely to be given to males, those in higher paid jobs, younger workers, those relatively new to the workplace and those employed on fixed term contracts.

The use made by employees of their skills

Another of the questions asked in the Survey of Employees was: "How well do the work skills you personally have match the skills you need to do your present job?"

In the original research, responses to this question were interpreted in two ways. When individuals reported that their skills levels were lower than those required, this was assumed to be a manifestation of a 'skills gap': and when individuals reported that their skills levels were higher than those required, this was assumed to be a manifestation of 'skills under-

utilisation'. The percentage distribution of the responses is presented in Table 4.

'Skills gaps' refer to situations in the internal labour markets of firms/workplaces, where employers report that the skills profiles of their existing employees – or some sub set of them – are inadequate to meet the skill demands of the jobs they do. Futureskills Scotland (2007) reported that although 'skill shortages' are now uncommon, 'skills gaps' remain prevalent. Table 4 presents contrary evidence. It illustrates the limited extent of the skills gap from the perspective of the employee; in that only 4.32 percent of respondents reported that the work skills they possess are either 'a bit lower' or 'much' lower than the skills needed to do their present job.⁶

In contrast, more than half of respondents reported that the work skills they have are either 'much higher' or 'a bit higher' than the skills needed to do their present jobs, evidence of considerable skills under-utilisation.

A binomial logit was estimated to identify the determinants of the probability that an individual reported that his/her skills levels were higher than those required to do his/her present job. Again, the explanatory variables sought to reflect personal characteristics, the structural characteristics of the workplace at which the individual was employed and the SIC of the workplace. On this occasion, Wald tests established the joint significance of each of these three sub sets within the vector of explanatory variables.

The probability that an individual reported skills under-utilisation was more likely when: the individual was disabled; possessed the highest vocational/professional qualification⁷; and had reported dissatisfaction with the training received. On the other hand, the probability that an individual reported skills under-utilisation was less likely when he/she had received training of varying amounts. There was a co-relation between the probability of reporting skills under-utilisation and the size of the workplace at which the individual was employed, with the probability of reporting skills under-utilisation being more likely in relatively larger establishments (although not all of these results were statistically significant). Finally, the probability of reporting skills under-utilisation was less likely if the individual was employed in the Manufacturing, Construction, Hotels and Restaurants, and Health sectors of the economy.

Conclusions and policy implications

This paper has reported research of relevance to the Scottish Government's policy objective of increasing labour productivity, of central importance to achieving its principal economic objective of increasing sustainable economic growth.

It is facile to prescribe optimum training targets, for the individual, the establishment/enterprise or the economy as a

whole. Nevertheless, there must be some dismay among policy makers that so many employees received no training of the type described. By way of contrast, policy makers may take some comfort from the absence of skills gaps, no doubt attributable to past policy successes in enhancing the skills profiles of, most especially, new entrants to the labour market. The major concern, however, must be the extent to which employees consider that their skills levels are not fully utilised by workplace/enterprise management, because the micro-econometric analysis suggested that, other than because of disability, the origin of skills under-utilisation is not to be found in circumstances which may circumscribe an individual's labour market participation. Furthermore, there are important workplace size and sectoral dimensions to the incidence of skills under-utilisation which cannot be ignored.

The Scottish Government maintains that: "A skilled and educated workforce is essential to productivity and sustainable economic growth. Not only are more skilled workers potentially more productive in their own right, but the skill level of the workforce is likely to impact significantly on the effectiveness of capital investment and the ability of employers to adopt innovative work practices" (Scottish Government, 2007b, p6). This skills agenda is eminently compatible with the UK policy perspective of the Leitch Review of Skills (2007) which maintained: "To achieve world class prosperity and fairness in the new global economy, the UK must achieve world class skills.... where skills were once a key driver for prosperity and fairness they are now the key driver" (p9, italics in the original).

The principal results of the research reported in this paper expose the inherent limitations of this exclusively supply based policy perspective. Whereas, in general, the education and training sectors in Scotland have succeeded in equipping the workforce with higher skills, the Scottish economy has not expanded at a rate commensurate with making best use of the skilled labour now available.

Even if post-Leitch policy and structures, such as the UK Commission for Skills which replaces the system of employer-led Sector Skills Councils – to which the Scottish Government subscribes – succeed in convincing firms of the efficacy of training, the consequential impact upon labour productivity will be negligible if management continues to fail to make effective and efficient use of the labour they employ.

It is not that the policy of continuing to improve the education and skills profiles of the Scottish workforce – and potential entrants to it – is unnecessary. Rather, this policy agenda on its own is insufficient. Supplementary policies are required, which focus upon what the Scottish Government (2007a) itself has identified as the "economic pull" factors (p5). In essence, policies are required which are designed to increase organisations' demand for skilled labour, for example by

changing the economic parameters within which managers think about their business models and the relative opportunity costs of the resources they have at their disposal. To paraphrase Keep (2007, p6), the trick is to ensure that the 'economic development horse' precedes the 'skills cart'.

References

Felstead, A. and Green, F. (2008) *Work Skills in Scotland: The Workers' View*. Glasgow: Futureskills Scotland.

Futureskills Scotland (2007) *Skills in Scotland 2006*. Glasgow: Futureskills Scotland.

Keep, E. (2007) *Key Future Labour Market and Skills Issues in Scotland (and Beyond)*. Glasgow: Futureskills Scotland.

Keep, E., Mayhew, K. and Payne, J. (2006) *From Skills Revolution to Productivity Miracle- Not as Easy as it Sounds*. *Oxford Review of Economic Policy*, Vol. 22, No. 4, pp 539 -559.

Kersley, B., Alpin, C., Forth, J., Bryson, A., Bewley, H., Dix, G. and Oxenbridge, S. (2006) *Inside the Workplace: Findings from the 2004 Workplace Employment Relations Survey*. London: Routledge.

Leitch Review of Skills (2007) *Prosperity for All in the Global Economy: World Class Skills. Final Report*. London: HM Treasury.

Scottish Government (2007a) *The Government Economic Strategy*. Edinburgh, The Scottish Government.

Scottish Government (2007b) *Skills for Scotland: A Lifelong Skills Strategy*. Edinburgh, The Scottish Government.

Stata (2005) *Stata Survey Data Reference Manual, Release 9*. College Station, Texas, USA: Stata Press.

Sutherland, J. (2008) *Training and Skills in Scotland: Further Evidence*. Centre for Public Policy for Regions Discussion Paper No. XX: Glasgow: University of Glasgow.

Wolf, A. (2004) *Education and Economic Policy: Simplistic Theories and their Policy Consequences*. *Oxford Review of Economic Policy*, Vol. 20, NO. 2, pp 315 -333

Endnotes:

¹ The author acknowledges the (former) Department of Trade and Industry, the Economic and Social Research Council, the Advisory, Conciliation and Arbitration Service and the Policy Studies Institute as the originators of the 2004 Workplace Employment Relations Survey data, and the Data Archive at the University of Essex as the distributor of the data. The National Centre for Social Research was commissioned to conduct the field work on behalf of the sponsors.

None of these organisations bears any responsibility for the author's analysis and interpretations of the data.

²This observation reflects similar sentiments appearing previously in "Skills for Scotland: A Lifelong Skills Strategy" : "...Scottish investment in education, for at least the last 30 years, has been higher than in the rest of the United Kingdom (UK) and this has resulted in a well qualified population ... Scotland's skills profile has also been improving faster than that of the UK.... Scotland has not, however, matched the UK economic growth rate despite its positive skills profile" (p. 6).

³ The author acknowledges the (former) Department of Trade and Industry, the Economic and Social Research Council, the Advisory, Conciliation and Arbitration Service and the Policy Studies Institute as the originators of the 2004 Workplace Employment Relations Survey data, and the Data Archive at the University of Essex as the distributor of the data. The National Centre for Social Research was commissioned to conduct the field work on behalf of the sponsors. None of these organisations bears any responsibility for the author's analysis and interpretations of the data.

⁴ This observation reflects similar sentiments appearing previously in "Skills for Scotland: A Lifelong Skills Strategy" : "...Scottish investment in education, for at least the last 30 years, has been higher than in the rest of the United Kingdom (UK) and this has resulted in a well qualified population ... Scotland's skills profile has also been improving faster than that of the UK.... Scotland has not, however, matched the UK economic growth rate despite its positive skills profile" (p. 6).

⁵Workplace human resource management policies and practices (such as whether or not there is an equal opportunities policy in operation, the workplace is Investor of People accredited etc.) were not included, because of a problem of multicollinearity. The workplace size variable made use of a series of dummy variables. Hence, dummy variable depicting human resource management policies such as these illustrated, invariably present in larger workplaces, proved collinear with the dummy variables of the larger workplace size categories. That said two dummy variables of this type were included, successfully. A dummy variable relating to whether the workplace stated that it offers 'long term employment' on recruitment – a policy assumed to be central to the other workplace recruitment and training policies in operation. And a dummy variable relating to whether the workplace experienced 'change' over the last two years (such as a change in its pay systems, computerisation, working time arrangements, the organisation of work etc.), factors which may prompt the implementation of 'change-related' training policies on the part of management, indicators of what Keep (2007, p. 5) refers to as possible "drivers of training". Often, similarly high degrees of collinearity were found between the dummy variables reflecting the corporate status of the workplace and its SIC e.g. between a workplace in the public sector and the Health SIC. On this occasion, however, it was decided to retain both.

⁶There was little variation in the incidence of skills gaps by workplace size. The variation of the incidence by SIC was greater, with skills gaps

being more evident in Electricity, Gas and Water; Hotels and Restaurants; Financial Services; and Public Administration – perhaps because of the nature of job specificity within these sectors. However, these results were not statistically significant in the micro-econometric analysis undertaken. Again, see Sutherland (2008) for details.

⁷The sign on the corresponding highest academic qualification was also positive, although this coefficient was not statistically significant.