

Who should we ask? Employer-Employee perceptions of skill gaps within firms

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and Firm Dynamics*

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Rationale for the study

- Skill-gaps refer to the phenomenon whereby the skill competencies of existing employees are insufficient to meet the requirements of employers.
- Skill-gaps are an obvious concern for policy as they are a key determinant of training investments by both firms and workers.
- Despite this, the area is heavily under-researched when compared to extensive literatures on other forms of skills mismatch such as overeducation, overskilling, undereducation and skill shortages.

Who knows best?

- Both employees and employers may perceive skill requirements and existing competencies in different ways.
- A genuine skills gap can be considered to exist when the skill deficiency is recognised by both the employee and the employer.
- However, asymmetries are likely to exist.

Why might asymmetries exist ?

- Skill gaps perceived by employees only:
 - The gap is genuine but has little implications for productivity, so not such a concern for the firm.
 - Employers may be failing to recognise productivity related deficiencies among staff – poor management or insufficient HRM structures?
 - Employee responses may be more heavily related to future career aspirations.
 - Employers putting too much faith in formal education system.

Why might asymmetries exist?

- Skill gaps perceived by employers only:
 - Employees tend to over-estimate their own competency levels.
 - Employers are under-estimating the competency levels of their workers.
 - Employees fail to recognise instances where skill deficiencies have important implications for productivity.

Objectives of the study

- To assess the level of internal consistency between employee and employers perceptions of skill-gaps.
- To determine the factors driving both agreement and asymmetries
- To assess the extent to which the measurement approach adopted is likely to lead to distorted policy conclusions.

Data I

- Comes from the 2006 Irish National Employment Survey (NES).
- The NES is a linked employer-employee survey containing information on over 58,000 employees located across both public and private sector employers.
- We restrict our analysis to the private sector and reduce our data to the level of the firm.
- We have information on over 4,000 firms employing 38,000 individuals.

Data II

- Survey asks both employers and employees to report skill-gaps in 10 areas which we group into 6 categories.
- In the study, employer skill-gaps are assessed on the basis of the survey responses alone.
- An employee based skill-gap is assumed to exist if the gap is reported by more than 20 per cent of the firms employees.

Percentage of Firms Reporting Employee based Skill Gaps

	Incidence	% Also Reporting Employer Based Gaps
Any	80	70.9
technical	44.4	34.8
IT	47.3	45
Management	43.2	34.1
Languages	26.2	26.7
Communication	54.3	38.1
Numeracy / Lit	29	9.3
Sample	4035	100

Percentage of Firms Reporting Employer based Skill Gaps

	Incidence	% Also Reporting Employee Based Gaps
Any	68	83.3
technical	28.5	54
IT	35.1	60.7
Management	27.9	52.9
Languages	18.3	38.3
Communication	32.1	64.5
Numeracy / Lit	8.1	33.6
Sample	4035	100

Factors Influencing Agreement on Skill Gaps - I

	Gap Both	Tech	IT	Manage	Language	Comm	Num \ lit
Average Experience	-0.001	-0.001	0.003***	0.001	-0.001**	-0.002	0.001
% Male emp	0.089**	0.119***	-0.016	0.033	0.003	-0.008	-0.001
% PT emp	0.086*	-0.021	-0.027	-0.039	0.006	0.019	-0.006
% High School	0.116*	-0.012	0.225***	0.073	0.012	0.082	-0.013
% Post-Secondary	0.149**	0.045	0.212***	0.037	0.042	0.053	-0.001
% Sub Degree	0.163**	0.030	0.330***	0.177***	0.015	0.105*	-0.014
% Graduate	0.175**	0.021	0.303***	0.181***	0.038	0.051	0.007
Individual Bargain	0.000	0.000	0.000*	0.000	-0.000	0.000	0.000
Business Bargain	0.000	0.000	0.001**	0.000	0.000	0.000	0.000
Industry Bargain	0.001***	0.000	0.000	0.000**	0.000***	0.000	0.000
National Wage Agreement	0.000	-0.000	0.000	0.000	0.000	0.000	0.000
Other Bargain Agreement	-0.001	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000

Factors Influencing Agreement on Skill Gaps - II

	Gap Both	Tech	IT	Manage	Language	Comm	Num \ lit
% Shift work	0.131***	0.018	-0.021	0.016	0.050***	0.081**	0.022**
% in Professional Bodies	0.120**	0.087***	0.007	0.047	-0.018	0.013	0.005
Firm size (logged)	0.069***	0.035***	0.027***	0.033***	0.002	0.063***	0.002
T U density	-0.001	-0.000	0.000	-0.000	-0.000	-0.001	-0.000
% Migrants	0.075	-0.004	-0.133***	-0.024	0.125***	0.050	0.017*
% Performance Review	0.001***	0.001***	0.000*	0.000	-0.000	0.000***	0.000
% Job Description	0.001***	-0.000	0.001***	0.001***	0.000**	0.000*	0.000
% Consult Change	0.121***	0.068***	0.066**	0.114***	0.002	0.077***	0.018**
Manufacturing	0.086	0.051	0.181*	0.032	0.022	0.030	0.014
Utilities	0.058	0.148	0.054	0.500	0.000	-0.025	0.000
Construction	-0.029	0.037	0.043	0.009	-0.006	-0.003	0.016
Retail	0.052	-0.036	0.166**	0.062	0.003	0.223**	0.014
Hotels	-0.113	-0.114***	-0.007	0.019	0.007	0.161	-0.005
Transport	0.019	-0.042	0.196*	0.051	0.022	0.216	-0.016
Distribution	0.109	-0.020	0.227**	0.057	0.001	0.223	0.010
Bus services	0.045	0.023	0.181**	0.058	0.020	0.125	0.011
Education	-0.031	-0.055	0.120	0.015		0.179	
Health	0.049	0.045	0.181*	0.055	-0.007	0.164	0.032
Other services	0.065	0.058	0.134	0.080	0.011	0.186	0.026

Factors Influencing Perceived Gaps Among Employees Only - I

	Gap both	Tech	IT	Manage	Language	Commun	Num \ lit
Average Experience	0.003**	0.002	0.004***	0.003**	-0.000	0.005***	0.001
% Male emp	-0.052*	0.135***	-0.013	0.060*	0.013	-0.035	0.034
% PT emp	-0.043	0.020	-0.054	-0.015	-0.019	0.070	0.031
% basic edu	0.111*	0.272***	-0.010	0.027	0.063	0.164**	0.163**
% High School	0.035	0.192***	0.058	0.091	0.072	0.088	0.220***
% Post-Secondary	0.085	0.303***	0.095	0.084	0.058	0.068	0.177***
% Sub Degree	0.147**	0.323***	0.235***	0.196***	0.129**	0.196***	0.302***
% Graduate	0.124**	0.297***	0.235***	0.218***	0.171***	0.243***	0.313***
Individual Bargain	-0.000	-0.000	0.000	-0.000	0.000	-0.000	-0.000
Business Bargain	0.000	0.000	-0.000	0.000	0.001**	0.000	0.000
Industry Bargain	-0.000	0.000	0.000	-0.000	0.000	-0.000	0.000
National Wage Agreement	-0.000*	-0.000*	-0.000	-0.000	-0.000	-0.001**	-0.000**
Other Bargain Agreement	-0.000	-0.001	-0.001	0.000	0.000	-0.000	0.000
% Shift work	0.001	0.024	0.064*	0.132***	0.058*	0.090**	0.122***
% in Professional Bodies	-0.022	0.130***	0.088*	0.044	0.093**	0.051	0.105**

Factors Influencing Perceived Gaps Among Employees Only - II

	Gap both	Tech	IT	Manage	Language	Commun	Num \ lit
Firm size (logged)	-0.008	0.017**	0.020***	-0.001	-0.008	0.005	-0.004
TU density	0.001**	0.000	-0.000	-0.000	0.000	0.001*	0.000
% Migrants	-0.077*	-0.044	-0.039	-0.033	0.108***	-0.101**	-0.119***
% Performance Review	-0.001***	-0.000	0.000	-0.000	-0.000	-0.000	-0.000
% Job Description	-0.000**	0.000	-0.000	0.000	-0.000	-0.000	0.001***
% Consult Change	0.037	0.064**	0.066**	0.118***	0.008	0.070**	0.032
Manufacturing	0.033	0.149	0.192*	0.107	-0.066	0.338***	-0.061
Utilities	0.106	0.208	0.068	0.033	-0.019	0.367	
Construction	0.076	0.107	0.132	0.096	-0.077	0.303**	-0.064
Retail	0.072	0.105	0.188*	0.156	-0.025	0.350***	-0.009
Hotels	0.117	-0.004	0.080	0.173	-0.070	0.379***	-0.075
Transport	0.011	0.039	0.178	0.119	-0.002	0.304**	-0.021
Distribution	0.102	0.038	0.349***	0.168	-0.012	0.514***	0.156*
Bus services	0.065	0.089	0.225**	0.163	-0.025	0.391***	0.041
Education	0.093	0.087	0.154	0.209	0.045	0.348***	
Health	0.057	0.156	0.137	0.097	-0.021	0.359***	-0.104**
Other Services	0.055	0.201*	0.177	0.119	-0.011	0.392***	

Factors Influencing Perceived Gaps Among Employers Only - I

	Gap both	Tech	IT	Manage	Language	Commun	Num \ lit
Average Experience	-0.001	-0.001	0.001	-0.001	-0.001	-0.001	-0.000
% Male emp	-0.040*	-0.080***	-0.015	-0.049**	-0.011	-0.005	0.014
% PT emp	0.001	-0.021	0.006	0.025	-0.024	0.000	-0.016
% basic edu	-0.041	-0.124**	-0.044	-0.036	-0.040	-0.006	-0.044
% High School	-0.043	-0.038	-0.038	-0.002	-0.030	0.048	0.003
% Post-Secondary	-0.085**	-0.100**	-0.013	0.014	-0.014	0.043	-0.006
% Sub Degree	-0.104**	-0.078	-0.073	-0.047	-0.039	0.055	-0.023
% Graduate	-0.107**	-0.086*	-0.062	-0.035	-0.144***	0.020	-0.024
Individual Bargain	-0.000	0.000	-0.000	0.000	0.000*	-0.000	-0.000
Business Bargain	0.000	-0.000	0.000	0.000	-0.000	-0.000	-0.000
Industry Bargain	-0.000	0.000	0.000	-0.000	-0.000	0.000	-0.000
National Wage Agreement	0.000	0.000	0.000	0.000	0.000	0.000*	0.000*
Other Bargain Agreement	0.000	-0.000	0.000	0.000	-0.000	0.000	0.000
% Shift work	-0.050*	0.000	0.029	0.028	0.003	-0.029	0.014
% in Professional Bodies	-0.087**	-0.089**	-0.057	-0.059	0.005	0.014	0.037*

Factors Influencing Perceived Gaps Among Employers Only - II

	Gap both	Tech	IT	Manage	Language	Commun	Num \ lit
Firm size (logged)	-0.028***	-0.007	0.017***	0.028***	0.021***	-0.005	0.009***
TU density	-0.000	-0.000	-0.000	-0.000	-0.000	0.000	0.000
% Migrants	-0.046	0.001	0.014	-0.091***	0.041	0.007	-0.032
% Performance Review	0.000	-0.000	0.000	0.000	-0.000	0.000	-0.000**
% Job Description	-0.000**	-0.000	-0.000	-0.000	0.000	-0.000	0.000*
% Consult Change	-0.064***	-0.054**	-0.052**	-0.009	-0.003	-0.038*	-0.019
Manufacturing	0.026	0.138	-0.045	0.084	0.026	0.092	-0.015
Utilities			0.203		0.028	0.476	
Construction	0.037	0.111	-0.071*	0.070	-0.002	0.035	-0.004
Retail	-0.005	0.065	-0.062	0.049	0.002	0.032	0.001
Hotels	0.069	0.073	-0.071*	0.022	0.070	0.077	0.019
Transport	0.052	0.107	-0.046	0.038	0.056	0.101	0.000
Distribution	-0.068**	0.149	-0.128***	0.085	-0.016	-0.053	0.008
Bus services	-0.021	0.100	-0.085**	0.061	-0.039	0.015	0.017
Education			-0.072*		0.032	0.006	
Health	0.009	0.102	-0.056	0.048	0.012	0.054	-0.008
Other Services	0.015	0.079	-0.084**	0.059	-0.010	0.024	-0.002

Factors Influencing Agreement: Gaps By Occupation

	Tech	IT	Manage	Language	Commun	Num \ lit
Managerial	0.141***	0.302***	0.445***	0.138***	0.219***	0.224***
	(0.044)	(0.029)	(0.028)	(0.052)	(0.046)	(0.077)
Professional	0.239***	0.209***	0.141***	0.254***	0.337***	0.078
	(0.056)	(0.049)	(0.038)	(0.079)	(0.065)	(0.067)
Technical	0.416***	0.174***	0.123**	0.100*	0.203***	0.116
	(0.058)	(0.065)	(0.050)	(0.061)	(0.078)	(0.094)
Clerical	0.259***	0.421***	0.262***	0.019	0.397***	0.159***
	(0.057)	(0.032)	(0.064)	(0.025)	(0.049)	(0.057)
Craft	0.429***	0.196**	0.243*	0.160**	0.223**	0.036
	(0.066)	(0.092)	(0.133)	(0.065)	(0.090)	(0.049)
Plant	0.308***	0.357***	0.036	0.084*	0.318***	0.022
	(0.079)	(0.127)	(0.112)	(0.049)	(0.106)	(0.031)
Skilled Manual	0.280***	0.173**	0.231**	0.192***	0.417***	0.149**
	(0.054)	(0.077)	(0.105)	(0.036)	(0.049)	(0.063)

Average Labour Cost Models

	Base	Firm	Employee
Average Experience	0.013***	0.014***	0.012***
% Male emp	0.111***	0.116***	0.133***
% PT emp	-0.179***	-0.185***	-0.171***
% basic edu	0.056	0.089	0.093
% High School	0.123*	0.147**	0.210***
% Post-Secondary	0.083	0.129*	0.197**
% Sub Degree	0.180**	0.224***	0.313***
% Graduate	0.405***	0.448***	0.524***
Individual Bargain	0.000	0.000	0.000**
Business Bargain	0.000	0.000	0.000
Industry Bargain	-0.001*	-0.001**	-0.000
National Wage Agreement	-0.001***	-0.001***	-0.000*
Other Bargain Agreement	-0.000	-0.000	-0.000
% Shift work	-0.105**	-0.096**	-0.066
% in Professional Bodies	0.076	0.092*	0.124**
Firm size (logged)	0.034***	0.037***	0.057***
TU density	0.001	0.001	0.000
% Migrants	-0.175***	-0.170***	-0.167***
% Consult Change	0.074*	0.087**	0.139***
Gap Both	0.252*		
Lamda Gap Both	-0.158*		
Firm Gap		0.340**	
Lamda Firm Gap		-0.224**	
Employee Gap			-0.197
Lamda Employee Gap			0.132
Constant	2 387***	2 258***	2 452***

Impact on Average Labour Cost of Individual Skill Gap Effects (Selection Adjusted)

	Base	Base	Base
technical	0.080	-0.022	-0.039
	(0.134)	(0.019)	(0.204)
IT	0.356*	0.555	0.276
	(0.212)	(0.425)	(0.270)
Management	0.171	-0.040	0.012
	(0.158)	(0.332)	(0.304)
Languages	-0.373**	-0.228	-0.058
	(0.182)	(0.238)	(0.296)
Communication	-0.038	-0.025	-0.079
	(0.178)	(0.356)	(0.301)
Numeracy / Lit	-0.604	-0.613	0.133
	(0.380)	(0.437)	(0.327)
Constant	2.356***	2.249***	2.471***
	(0.130)	(0.157)	(0.232)

Findings – Descriptives I

- Employers are less likely to report skill-gaps relative to employees.
- Biggest issues for both parties relate to gaps in the areas of communications, IT, technology and management.
- Relatively low correlation between the two measures – less than 50 per cent of firms also recognise gaps when reported by employees.

Findings – Descriptives II

- Some variation with respect to competency areas – agreement relatively high for skill-gaps in areas such as technical, IT and communication skills but much lower for language and numeracy / literacy deficiencies.

Factors influencing agreement I

- More likely to be a consensus regarding IT and management deficiencies within firms with a highly educated workforce.
- Wage bargaining factors are largely unimportant – somewhat surprisingly we only see impacts in cases where collective bargaining is used.
- No correlation with individual level bargaining, suggesting that such negotiations tend to ignore the training requirements of employees.

Factors influencing agreement II

- Formal HRM structures such as annual performance reviews, provision of job description and formal mechanism for consultation in the implementation of new processes \ technologies are extremely important channel of communicating skill problems between employers and staff. Also likely to be correlated with the firm size effect that we observe.

Employees more likely to report gaps in isolation when firms do not



- In firms with higher proportions of educated labour – may be picking up some desire for career orientated training here.
- In firms operating shift working – likely to be involve more repetitive type tasks
- Also more common where there is a high level of consultation on the implementation of change – even with formalised structures employers' not always listening – perhaps selective hearing

Employers more likely to report gaps in isolation when workers do not



- technical gaps – more likely among firms with higher proportions of workers without formal qualifications.
- Also more likely to occur within larger firms and those that tend not to consult staff on issues related to change.

Differing outcomes depending on measurement approach?

- Multiple skill gaps were found to increase average labour costs using both a combined measure and one based on employer perceptions only – these measures appear to pick up broadly the same thing.
- No evidence of an impact using employee based measure – seems to confirm the view that a proportion of difficulties reported by employees are not directly related to their current job.

Differing outcomes depending on measurement approach?

- Little evidence of gaps in any individual area impacting wage costs – however, this is not to say that we would not observe productivity effects.
- Evidence suggests that probably best to rely on employer responses?

Thank you