

‘How’ are we unequal?

The adjusted gender pay gap in Northern Ireland

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- Based on working paper Wilson, L. and O’Gorman, C. (2023) *‘How’ are we unequal? The adjusted gender pay gap in Northern Ireland*, NERI working paper no 73, Belfast: NERI.
 - Follows on from previous paper Wilson, L. (2020) *‘How unequal? The unadjusted gender pay gap in Northern Ireland and the Republic of Ireland’*, NERI working paper no 69, Belfast: NERI.
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Context

- An issue of continuing concern within policy and academic circles.
- Limited number of empirical studies have been concerned with understanding the GPG in Northern Ireland.
- UK versus NI gender pay gap.
- NI policy context
 - Gender pay transparency legislation.
 - Gender equality strategy.
 - Integrated early years and childcare strategy.

Aims

Study aims to:

- (a) explain the nature of the GPG in Northern Ireland and;
- (b) Assess the extent to which different personal/family and job-related characteristics *both* **drive** and **reduce** differences in the earnings of males and females.



How we measure the gender pay gap matters...

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- The GPG is a metric that tells us about the difference in the earnings of males & females in the labour market and is one of the main mechanisms used to assess the extent of gender inequalities in the labour market.
 - The GPG captures the differential economic returns from paid work rewarded to females as compared to males.
 - Different ways of measuring the GPG, and the methodology used to estimate the GPG has a significant impact on the estimated magnitude of the GPG.
 - There is however often little critical appraisal across the literature about how we should measure the GPG.
 - In broad terms, when comparing the earnings of males and females there are two overarching ways in which we can estimate the size of the GPG which include *unadjusted* and *adjusted* forms.
 - So, which is best: an unadjusted or an adjusted measure?



What is the unadjusted gender pay gap...



Working Paper Series

How Unequal?

The unadjusted gender pay gap in earnings in
Northern Ireland & the Republic of Ireland

Lisa Wilson

*NERI Working Paper Series No. 69
November 2020*

https://www.nerinstitute.net/sites/default/files/research/2020/Unadjusted%20gender%20pay%20gap%20in%20Northern%20Ireland%20and%20the%20Republic%20of%20Ireland%202020%20_1.pdf



Understanding the gender pay gap: **A toolkit**

Dr Lisa Wilson



<https://www.nerinstitute.net/sites/default/files/understanding-our-economy/downloads/2021/Understanding%20the%20gender%20pay%20gap%20A%20toolkit.pdf>



The Gender Pay Gap in Northern Ireland

NERI Report Series, No.4

Dr Lisa Wilson



<https://www.nerinstitute.net/sites/default/files/research/2021/The%20Gender%20pay%20gap%20in%20Northern%20Ireland%20report%20series%204.pdf>



What is the adjusted gender pay gap...

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- The adjusted GPG seeks to estimate how much of the gap in earnings remain after we account for differences in characteristics of males and females.
 - The adjusted GPG allows us to determine how much of the GPG can be 'explained' by differences in characteristics and how much of the gap remains 'unexplained' by differences in returns to same characteristics.
 - It also allows us to see how different characteristics drive & reduce differences in male and female earnings.
 - The adjusted GPG allows us to get closer to an estimate of how much of the GPG is owing to 'unequal pay for equal work'.
 - While discrimination may well be a factor, its relative weight remains unknown.



**What factors does the literature
identify as determinants of the gender
pay gap?**

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- Human capital
 - Occupational and sectoral segregation
 - Part-time penalty and part-time pay penalty
 - Motherhood penalty
 - Discrimination
 - Labour market participation and employment rates



Data and methods used in this study

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- Using data from the Understanding Society survey established bivariate, regression and decomposition methods are used to explore the determinants of the GPG in Northern Ireland.
 - Three stages to the analysis:
 - Run OLS regression to estimate the size of the adjusted gap in earnings between males & females once a range of different individual/family and job-related characteristics have been controlled.
 - Apply what is termed an Oaxaca-Blinder decomposition in order to:
 - Examine the role of differences in male and female characteristics in determining male and female earnings. [Explained gap]
 - Examine the extent to which we cannot explain differences in earnings between males and females. [Unexplained]

An overview of characteristics used to study the extent and nature of the gender pay gap

Worker characteristics	
Gender	Gender of respondent
Age	Age category of respondent
Education	Highest educational qualification attained
Labour market history/Time out of the labour market	
Children (Proxy)	Number of dependent children in household under 16
Job characteristics	
Industry	Current industrial sector
Occupation	Current occupation (SOC 2000 classification)
Sector of employment	Public/private sector
Employment type	Current job: permanent or temporary
Working arrangements	Full-time or part-time
Number employed at workplace	Number at workplace (employees)

Breakdown of the labour market by gender

	Male	Female
Age		
16-29	22.5	18.4
30-39	17.6	20.9
40-49	22.5	26.5
50-59	27.3	24.5
60+	10.2	9.7
Educational Qualifications		
Degree or above	26.5	41.7
Below degree	45.6	36.8
No qualifications	27.9	21.5
How Many children		
No children	68.1	61.3
One child	10.3	16
2+ children	21.6	22.7
Children		
Does not have children	68.5	61
Has children	31.5	39

	Male	Female
Sector of Employment		
Private	69.7	49.4
Public	30.3	50.6
Number of employees		
0-24	36.1	39.5
25-99	22.6	29.6
100+	41.4	30.9
Occupation		
Managerial/Directors/ Senior Officials	9.7	8.7
Professional	14.8	16
Associate Professional & Technical	10.3	18.7
Administrative & Secretarial	8.4	16.7
Skilled trades	22.6	0.7
Caring, Leisure, Other Services	1.3	13.3
Sales & Customer Service	6.5	11.3
Process Plant & Machine	12.3	3.3
Elementary	14.2	11.3
Industry		
Agriculture, forestry, fishing, electricity	6.9	0.6
Manufacturing	14.5	4.1
Construction	14.5	0.6
Wholesale, retail & transportation	17.6	14.5
Accommodation & Food	1.3	5.8
Information, Communication, Financial, Insurance, Real Estate	6.3	5.2
Professional, Technical, Scientific, Admin	8.8	6.4
Public Admin, Health & Education	23.3	56.4
Arts, Entertainment	5	3.5
Other Service	1.9	2.9
Full-time/Part-time		
Full-time	90.7	65.1
Part-time	9.3	34.9

Breakdown of mean earnings by job/ personal characteristics

	All	Male	Female	
	Mean hourly earnings	Mean hourly earning	Mean hourly earnings	GPG mean hourly pay
Age				
16-29	9.37	9.68	9.01	-7.44%
30-39	12.92	13.78	12.29	-12.12%
40-49	14.05	15.71	12.79	-22.83%
50-59	14.35	14.71	14.07	-4.55%
60+	13.45	15.88	11.94	-33.00%
Educational Qualifications				
Degree or above	16.07	17.59	15.07	-14.27
Below degree	10.3	11.07	9.28	-16.16
No qualifications	11.94	13.32	10.75	-24.58
How Many children				
No children	12.33	12.94	11.81	-9.57%
One child	12.38	13.12	11.99	-9.42%
2+ children	14.62	15.45	10.93	-41.35%
Children				
Does not have children	12.33	12.94	11.81	-9.57%
Has children	13.74	14.7	13.02	-12.90%

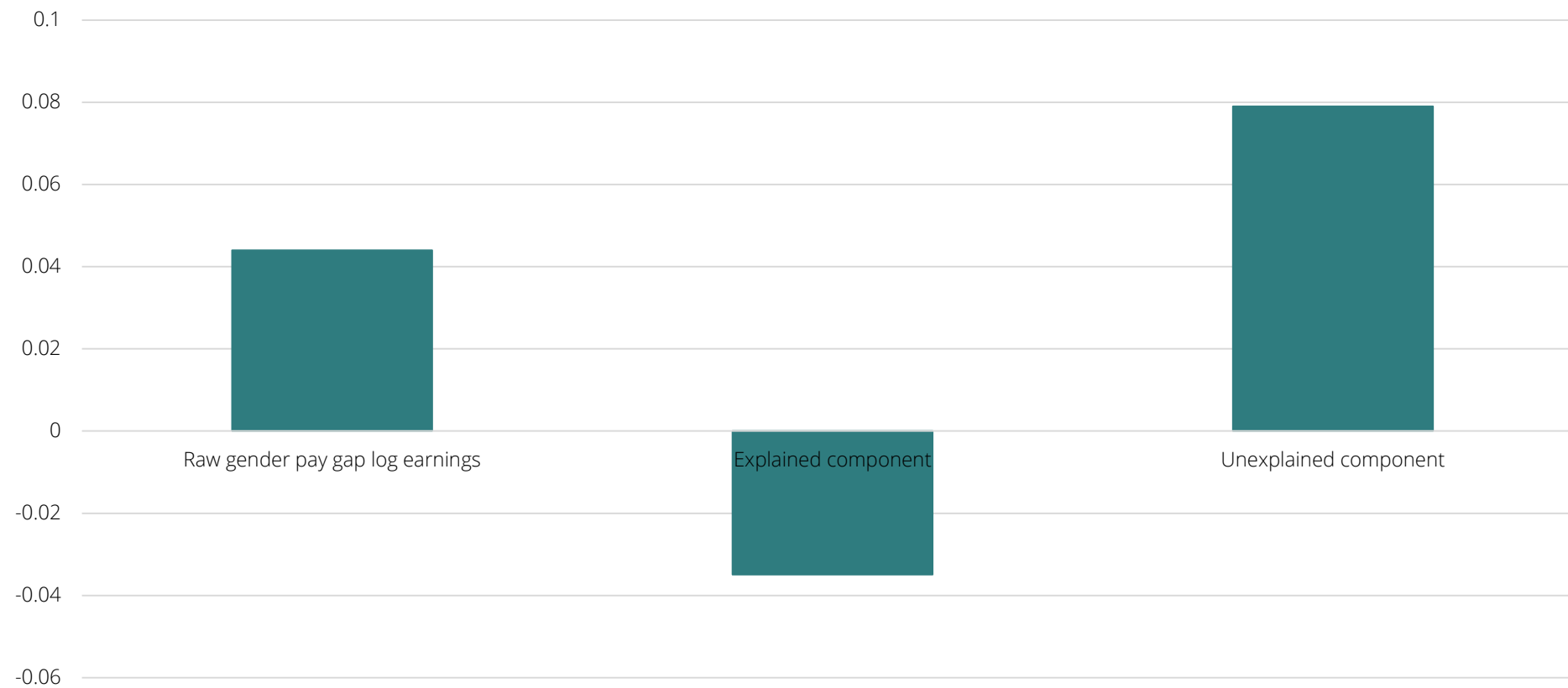
	All	Male	Female	
	Mean hourly earnings	Mean hourly earning	Mean hourly earnings	GPG mean hourly pay
Sector of Employment				
Private	11.98	12.91	10.92	-18.22%
Public	14.09	15.06	13.61	-10.65%
Number of employees				
0-24	11.44	12.02	11.01	-9.17%
25-99	13.49	13.97	13.2	-5.83%
100+	13.84	14.64	12.95	-13.05%
Occupation				
Managerial/Directors/ Senior Officials	19.24	22.63	15.69	-44.23%
Professional	17.69	18.99	16.4	-15.79%
Associate Professional & Technical	16.82	14.82	17.89	17.16%
Administration & Secretarial	11	11.5	10.74	-7.08%
Skilled trades	12.75	13.08	7.41	-76.52%
Caring, Leisure, Other Services	9.66	9.26	9.71	4.63%
Sales & Customer Service	8.81	9.05	8.67	-4.38%
Process Plant & Machine	10.35	10.74	9.16	-17.25%
Elementary	8.71	8.35	9.13	8.54%
Industry				
Agriculture, forestry, fishing, electricity	11.59	11.02	13.01	15.30%
Manufacturing	12.44	12.75	11.45	-11.35%
Construction	11.55	11.78	9.16	-28.60%
Wholesale, retail & transportation	9.86	10.85	8.81	-23.16%
Accommodation & Food	7.72	6.92	7.89	12.29%
Information, Communication, Financial, Insurance, Real Estate	16.96	20.19	13.52	-49.33%
Professional, Technical, Scientific, Admin	13.1	14.25	11.68	-22.00%
Public Admin, Health & Education	14.06	15.03	13.67	-9.95%
Arts, Entertainment	11.9	13.28	10.19	-30.32%
Other Service	12.75	15.09	11.24	-34.25%
Full-time/Part-time				
Full-time	12.81	13.25	12.29	
Part-time	12.95	17.36	12.2	

	Model 1		Model 2		Model 3		Model 4		Model 5	
Constant	1.129 (0.044)	***	1.162 (0.048)	***	1.126 (0.059)	***	1.126 (0.057)	***	1.269 (0.075)	***
Gender										
Reference category: Male										
Female	-0.044 (0.025)	ns	-0.073 (0.024)	**	-0.073 (0.024)	**	-0.076 (0.025)	*	-0.085 (0.025)	**
Educational qualifications										
Reference category: No qualifications										
Degree			0.166 (0.033)	***	0.166 (0.033)	***	0.169 (0.032)	***	0.096 (0.032)	**
Below degree			-0.009 (0.034)	ns	-0.008 (0.034)	ns	-0.008 (0.033)	ns	-0.032 (0.031)	ns
Age										
Reference category: 40-49										
18-29			-0.154 (0.035)	***	-0.134 (0.046)	**	-0.132 (0.046)	**	-0.120 (0.043)	**
30-39			-0.047 (0.036)	ns	-0.045 (0.037)	ns	-0.046 (0.037)	ns	-0.042 (0.035)	ns
50-59			0.009 (0.036)	ns	0.027 (0.041)	ns	0.029 (0.041)	ns	0.015 (0.038)	ns
60 +			0.026 (0.052)	ns	0.048 (0.057)	ns	0.044 (0.057)	ns	0.011 (0.054)	ns
Children										
Reference category: No children										
One child					0.019 (0.041)	ns	0.022 (0.041)	ns	0.004 (0.039)	ns
Two or more children					0.037 (0.039)	ns	0.033 (0.039)	ns	0.028 (0.038)	ns
Full-time/Part-time										
Reference Category: Full-time										
Part-time							0.015 (0.031)	ns	0.031 (0.030)	ns
Contract of employment										
Reference category: Permanent										
Temporary							-0.050 (0.051)	ns	-0.039 (0.048)	ns
Sector of employment										
Reference category: Public										
Private									0.002 (0.03)	ns
Industry										
Reference category: Information, Communication, Financial, Insurance, Real estate, Professional, Technical, Scientific, Administration										
Agriculture & Industry									-0.045 (0.04)	ns
Wholesale, retail, accommodation & food									-0.088 (0.039)	**
Public administration, Health & Education									-0.030 (0.037)	ns
Arts, Entertainment & Other services									-0.103 (0.055)	ns
Occupation										
Reference category: Managerial, Professional & Associate Professionals										
Clerical, sales & service									-0.126 (0.028)	***
Production, Transport, Craft & Other manual									-0.129 (0.032)	***
Adjusted R square		0.007		0.289		0.286		0.283		0.387

Decomposing the gender pay gap

	Log wages
Predicted male	1.084 (0.017)
Predicted female	1.040 (0.014)
Gender pay gap	0.044 (0.022)
Two-fold decomposition	
Explained	-0.0349 (0.188)
Unexplained	0.0790 (0.019)

Driving and protective components of the unadjusted gender pay gap



Detailed composition of the gender pay gap: the explained component

Explained	-0.0349 (0.018)
Education	
<i>Reference category: No qualifications</i>	
Below degree	-0.004 (0.003)
Degree	-0.011 (0.005)
Age	
<i>Reference category: 40-49</i>	
18-29	-0.006 (0.005)
30-39	0.001 (0.002)
50-59	-0.001 (0.001)
60+	-0.001 (0.001)
Number of children	
<i>Reference category: zero children</i>	
One child	0.001 (0.002)
Two plus children	-0.001 (0.001)
Full-time/Part-time	
<i>Reference category: Full-time</i>	
Part-time	-0.019 (0.008)
Permanency of employment	
<i>Reference category: Permanent</i>	
Temporary	0.001 (0.001)
Sector of employment	
<i>Reference category: Public</i>	
Private	0.001 (0.004)
Industry	
<i>Reference category: Information, Communication, Financial, Insurance, Real estate, Professional, Technical, Scientific, Administration</i>	
Agriculture & Industry	-0.012 (0.006)
Wholesale, retail, accommodation & food	0.004 (0.004)
Public administration, Health & Education	0.008 (0.007)
Arts, Entertainment & Other services	-0.001 (0.003)
Occupation	
<i>Reference category: Managerial, Professional & Associate Professionals</i>	
Clerical, sales & service	0.019 (0.009)
Production, Transport, Craft & Other manual	-0.319 (0.010)

Detailed composition of the gender pay gap: the unexplained component

Unexplained	0.079 (0.018)
<i>Reference category: No qualifications</i>	
Below degree	0.011 (0.018)
Degree	0.003 (0.016)
Age	
<i>Reference category: 40-49</i>	
18-29	-0.028 (0.017)
30-39	-0.003 (0.010)
50-59	-0.027 (0.011)
60+	0.001 (0.004)
Number of children	
<i>Reference category: zero children</i>	
One child	-0.009 (0.006)
Two plus children	-0.018 (0.011)
Full-time/Part-time	
<i>Reference category: Full-time</i>	
Part-time	0.202 (0.105)
Working hours	
<i>Reference category: 31+ hours</i>	
1-15	-0.002 (0.005)
16-30	-0.010 (0.011)
Permanency of employment	
<i>Reference category: Permanent</i>	
Temporary	0.002 (0.004)
Sector of employment	
<i>Reference category: Public</i>	
Private	0.009 (0.02)
Industry	
<i>Reference category: Information, Communication, Financial, Insurance, Real estate, Professional, Technical, Scientific, Administration</i>	
Agriculture & Industry	-0.006 (0.006)
Wholesale, retail, accommodation & food	-0.005 (0.008)
Public administration, Health & Education	-0.026 (0.020)
Arts, Entertainment & Other services	-0.004 (0.005)
Occupation	
<i>Reference category: Managerial, Professional & Associate Professionals</i>	
Clerical, sales & service	-0.008 (0.010)
Production, Transport, Craft & Other manual	-0.004 (0.010)
Constant	0.062 (0.116)

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