

HIGHER EDUCATION FINANCING AND WOMEN'S OCCUPATIONAL SEGREGATION IN AGEING ECONOMIES: A CROSS-COUNTRY PANEL ANALYSIS OF GENDER WAGE GAPS AND CARE SECTOR EMPLOYMENT

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Abstract:

Population ageing and persistent gender inequality in employment are two defining structural forces in contemporary labour markets. This cross-sectional, cross-country study examines whether higher education financing is associated with three dimensions of women's employment outcomes, namely the gender wage gap, women's representation in managerial positions, and care-sector employment, across 40 economies, and whether population ageing moderates these relationships. Secondary data were drawn from OECD, ILOSTAT, World Bank, and United Nations sources. Descriptive statistics, Pearson correlations, multiple regression, and moderation analyses were conducted. Tertiary expenditure per student was unrelated to the gender wage gap ($n = 16$) and was unexpectedly negatively associated with women's managerial representation ($n = 34$). However, tertiary expenditure showed a strong positive relationship with care-sector employment ($n = 37$), and population ageing significantly moderated this relationship under both continuous and categorical operationalisations. The positive association between tertiary expenditure and care-sector employment also remained significant in the OECD-only sample. Findings indicate that higher education financing does not advance every dimension of gender equality uniformly but is closely linked to expanding care-related labour demand in ageing societies. Aligning education financing with care-workforce needs, alongside targeted gender-equality measures, is recommended.

Keyword: *higher education financing, women's employment, population ageing, gender wage gap, care-sector employment*

1. Introduction:

Higher education is thought to be an important pillar to human-capital formation and labor market participation. However, despite the progress in female education outcomes relative to males, gender gaps in earnings, managerial representation and in occupations remain (Goldin, 2014; OECD, 2023b). Population ageing is at the same time changing the nature of labour demand, such as by growing health and social-care services (OECD, 2023a). This means whether there is a positive relationship between higher education spending and women's employment outcomes could be either contingent upon the demographic structure of the economy in which the financing takes place. A widely used measure for investment in tertiary education (OECD, 2025a), expenditure per student can, in principle, increase women's skills and their employability, their occupational mobility and access to leadership (Chang et al., 2019). But, the impact of financing does not necessarily have to be uniform on all outcomes, such as wages, seniority or industry placement, because general labour-market participation is analytically independent of these outcomes. (Cortes & Pan, 2018).

In this study, women's employment outcomes are broken down into three dimensions: gender wage gap (measured as the ratio of women's to men's earnings, Blau & Kahn, 2016); access to employment in management (measured as the share of women in management in the overall employment, McKie & Jyrkinen, 2021); and access to employment in the care sector (measured as employment in human health and social work as a share of total employment, Addati et al., 2018). Demand for healthcare, long-term care and social services (OECD, 2020) could be further enhanced, for instance, in a context of ageing populations, and this could lead to a stronger linkage between the financing of education and employment in the care sector. The concept of ageing economy used here is based on the internationally accepted demographic definition of an ageing economy as any economy in which the population aged 65 and over makes up at least 18% of the total. The literature on education finance tends to focus on its link with enrolment and economic growth; the literature on gender wage gaps, women's leadership and care jobs are typically studied separately (Charles, 2011; Olivetti & Petrongolo, 2016).

There is little research integrating the three factors of tertiary expenditure, employment outcomes (gendered outcomes) and population ageing in a single setting and less research has been conducted on the role that ageing plays as a moderator in the financing-to-care-employment pathway (Corbett & Johnston, 2023). Institutional and sectoral policies and frameworks around the process of skill translation into employment opportunities also influence the linkages between education financing and women's employment. Increased spending can help increase the number of qualified female graduates available but will only positively impact on employment if there is a supply of equitable access to jobs, promotional opportunities and good working conditions. Women's advancement can still be hampered by institutional discrimination in highly educated societies and the demographic ageing can at the same time grow the demand for personnel in health services, nursing and care work and social work. Therefore, funding for tertiary education may be more closely linked to an increase in the number of jobs in the care sector than to the decrease in wage inequality and the increase in managerial representation. This difference reinforces the fact that it is important to review some employment outcomes separately and not as a unified whole as it concerns the employment progress of women (OECD, 2023b, 2023c).

Objectives of the study:

- to investigate the link between higher education financing and women's employment outcomes across countries
- to investigate the impact of population ageing on these outcomes controlling for women's labour-force participation and institutional gender inequality
- to test whether population ageing has a moderating effect on the relationship between higher education financing and care-sector employment outcomes, and to examine the robustness of this effect when varying ageing classifications and OECD membership

Hypotheses of the study:

H1: higher tertiary expenditure per student is associated with a narrower gender wage gap.

H2: higher tertiary expenditure is associated with greater representation of women in management.

H3: higher tertiary expenditure is positively associated with the share of employment in care-related activities.

H4: population ageing positively moderates the relationship between tertiary expenditure and care-sector employment, such that the relationship is stronger in more highly aged economies.

2. Materials and Methods

A quantitative explanatory cross sectional cross country study, with the country as unit of analysis, was utilized (no individual level respondents sampled) for this study. The analytical sample was made up of 40 countries (24 ageing and 16 non-ageing, including 36 OECD countries and 4 non-OECD economies, Table 1). Data was harmonised using harmonised definitions and purchasing-power-parity adjustments for comparability from the OECD Data Explorer and OECD education-finance indicators and OECD gender indicators (OECD, 2025a, 2025b, 2026), ILOSTAT employment statistics (International Labour Organization, 2026), World Bank Development Indicators (World Bank, 2026), UN World Population Prospects (United Nations, 2024) and the Social Institutions and Gender Index (OECD, 2025c). Higher education financing was defined as the amount of funding spent on tertiary education per student (in PPP adjusted U.S. dollars). The following dependent variables were analysed: gender wage gap (% , n = 16), women as share of managerial employment (% , n = 37, listwise n ≈ 34) and employment in human health and social work as share of total employment (% , n = 40, listwise n ≈ 37). The large missingness of the wage-gap indicator is explicitly reported, Volume-12 | Issue-2 | July 2026

and has a significant impact on the statistical power of that model. Demographic structure was captured by population aged 65 and over in percentage and a dummy variable was created for the ageing economy ($1 = \geq 18\%$).

The participation of women in the labour force (aged 15-64 years) and the OECD Social Institutions and Gender Index score were used as control variables and OECD membership as the robustness variable (OECD, 2023c). Before creating two interaction terms, tertiary expenditure $\times$ population aged 65+ and tertiary expenditure $\times$ ageing-economy status, the continuous variables were mean centred. They were analysed in four steps: (a) descriptive statistics and frequencies; (b) Pearson correlations with pairwise deletion; (c) three ordinary least squares (OLS) regressions of financing and controls on each outcome (Equation 1) and (d) moderation models testing whether ageing moderated the financing–care-employment relationship (Equation 2). The robustness was evaluated by OECD-only regression models, continuous and categorical operationalisations of population ageing as well as independent-samples t-tests and Durbin–Watson statistics. The relationship between higher education financing and each employment outcome was estimated using the following main-effects regression specification (Equation 1):

$$Y_i = \beta_0 + \beta_1 HEF_i + \beta_2 AGE_i + \beta_3 FLFPR_i + \beta_4 SIGI_i + \epsilon_i \#(1)$$

Moderation was tested by adding a financing $\times$ ageing interaction term (Equation 2):

$$Y_i = \beta_0 + \beta_1 HEF_i + \beta_2 AGE_i + \beta_3 HEF_i \times AGE_i + \text{Controls} + \epsilon_i \#2$$

where Y_i denotes the gender wage gap, women in management, or care-sector employment; HEF_i is tertiary expenditure per student; AGE_i is population aged 65+ (or the ageing-economy dummy); $FLFPR_i$ is female labour-force participation; and $SIGI_i$ is the institutional gender-inequality score.

Table 1. Sample Characteristics and Variable Coverage (N = 40 Countries)

Sample characteristic or outcome	Frequency (n)	Percentage
Ageing-economy classification		
Non-ageing economies	16	40.0
Ageing economies	24	60.0
OECD membership		
Non-OECD countries	4	10.0
OECD member countries	36	90.0
Dependent-variable coverage		
Gender wage gap	16	40.0
Women in managerial positions	37	92.5
Care-sector employment	40	100.0
Effective regression sample		
Model A: Gender wage gap	16	40.0
Model B: Women in management	34	85.0
Model C: Care-sector employment	37	92.5

Note. Listwise N reflects the effective regression sample after applying the full set of controls, including SIGI (n = 37 available).

3. Results

3.1 Sample Characteristics

The analytical sample consisted of 40 countries, 24 (60.0%) of which were ageing economies, 16 (40.0%) non-ageing economies, 36 (90.0%) OECD and four non-OECD. Depending on the variables, there were between 16 and 40 valid observations for the different variables (Table 1).

3.2 Descriptive Statistics

Mean tertiary expenditure per student was \$13,350 (SD = 6,432), ranging from \$2,500 to \$28,000. The gender wage gap averaged 9.62% (SD = 3.84, $n = 16$). The average number of women in management was 34.55%, (SD 7.89) and number of jobs in care sectors was 11.64% of total employment (SD 4.10) ($n = 37$). The percentage of the population aged 65+ was on average 17.94% (SD 4.83), the female labour-force participation rate 67.12% (SD 10.26), and SIGI (lower is less institutional gender discrimination) 16.06 (SD 7.82, $n = 37$). Complete statistics are given in Table 2.

Table 2. Descriptive Statistics of Study Variables

Variable	N	M	SD	Min	Max
Tertiary expenditure (PPP US\$)	40	13,350	6,432	2,500	28,000
Gender wage gap (%)	16	9.62	3.84	3.34	15.83
Women in management (%)	37	34.55	7.89	11.92	46.21
Care-sector employment (%)	40	11.64	4.10	3.50	21.00
Population aged 65+ (%)	40	17.94	4.83	7.00	29.10
Female LFPR, 15–64 (%)	40	67.12	10.26	36.40	82.00
SIGI score	37	16.06	7.82	6.70	43.00

Note. LFPR = labour-force participation rate; SIGI = Social Institutions and Gender Index (higher = more institutional discrimination).

3.3 Correlation Analysis

Tertiary expenditure had a high correlation with employment in the care sector ($r = .845$, $p < .001$), but did not correlate with either the gender wage gap ($r = -.016$, $p = .953$), or managerial representation ($r = -.005$, $p = .978$). There was a positive correlation between population ageing and care employment ($r = .534$, $p < .001$) and a strong positive correlation between labour-force participation and care employment ($r = .764$, $p < .001$), and a moderate positive correlation with management ($r = .384$, $p = .019$). SIGI was negatively correlated with financing, management and care employment (Table 3), which suggests that the greater the negative outcomes, the less the institutionalised gender discrimination.

Table 3. Pearson Correlations Among Study Variables

Variable	1	2	3	4	5	6	7
Tertiary education expenditure per student	1.000						
Gender wage gap	−0.016	1.000					
Women in managerial positions	−0.005	0.145	1.000				
Care-sector employment share	0.845**	−0.178	0.021	1.000			
Population aged 65	0.389*	−0.091	−0.053	0.534**	1.000		

years and above							
Female labour-force participation	0.676**	0.112	0.384*	0.764**	0.582* *	1.000	
SIGI score	-0.404*	0.069	-0.504* *	-0.559* *	-0.466 **	-0.673* *	1.000

Note. Pairwise deletion; two-tailed tests. * $p < .05$. ** $p < .01$. *** $p < .001$.

3.4 Higher Education Financing and the Gender Wage Gap

Model A was non-significant, $R^2 = .044$, adjusted $R^2 = -.304$, $F(4, 11) = 0.13$, $p = .970$ (Table 4). This was not a significant predictor ($b = -0.0001$, $p = .725$) and tertiary expenditure was not a significant predictor. The small number of subjects in the effective sample ($n = 16$) reduces the power of the study and the interpretation of the results was limited as a result of this.

$$\begin{aligned} \text{Gender Wage Gap}_i &= 2.292 \\ &- 0.00009706(\text{ Tertiary Expenditure }_i) \\ &- 0.165(\text{ Population Aged } 65+_i) \\ &+ 0.164(\text{FemaleLFPR}_i) \\ &+ 0.035(\text{SIGI}_i) \end{aligned}$$

The model was not statistically significant:

$R^2 = .044$, Adjusted $R^2 = -.304$, $F(4,11) = 0.127$, $p=.970$, $N=16$

Thus, after controlling for population ageing, female labour-force participation, and institutional gender inequality, tertiary education expenditure did not significantly predict the gender wage gap.

3.5 Higher Education Financing and Women in Management

Model B was statistically significant, $R^2=.517$, adjusted $R^2=.450$, $F(4,29)=7.76$, $p<.001$. Tertiary expenditure per student was a significant negative predictor of women's representation in managerial positions, $B=-0.001$, $\beta=-.429$, $t=-2.38$, $p=.024$, 95% CI $-0.001, 0.000$, which was contrary to the hypothesised positive direction. Population ageing was also negatively associated with women's managerial representation, $B=-0.884$, $\beta=-.549$, $t=-3.28$, $p=.003$, 95% CI $-1.435, -0.333$. Female labour-force participation was positively associated with managerial representation, $B=0.582$, $\beta=.754$, $t=3.02$, $p=.005$, 95% CI $0.188, 0.975$, whereas SIGI was negatively associated with the outcome, $B=-0.422$, $\beta=-.424$, $t=-2.37$, $p=.024$, 95% CI $-0.785, -0.058$. Therefore, H2 was not supported in the proposed direction.

$$\begin{aligned} \text{Women in Management}_i &= 25.719 \\ &- 0.001(\text{ Tertiary Expenditure }_i) \\ &- 0.884(\text{ Population Aged } 65+_i) \\ &+ 0.582(\text{ Female LFPR }_i) \\ &- 0.422(\text{ SIGI }_i) \end{aligned}$$

The standardized coefficients were:

$$\begin{aligned} R^2 &= 0.517 \\ \text{Adjusted } R^2 &= 0.450 \\ F(4,29) &= 7.757, \quad p < 0.001, N = 34 \\ \beta_{\text{HEF}} &= -0.429, \\ \beta_{\text{AGE}} &= -0.549, \\ \beta_{\text{FLFPR}} &= 0.754, \\ \beta_{\text{SIGI}} &= -0.424 \end{aligned}$$

The equation indicates that higher tertiary expenditure and greater population ageing were associated with lower women's managerial representation, whereas female labour-force participation was positively associated with women's representation in management.

3.6 Higher Education Financing and Care-Sector Employment

Model C was strongly significant, $R^2 = .808$, adjusted $R^2 = .784$, $F(4, 32) = 33.62$, $p < .001$. Once financing was entered into the model, only tertiary expenditure was significant ($b = 0.0004$, $p < .001$) with ageing, labour-force participation and SIGI non-significant. H3 was strongly supported.

Table 4. Main-Effects OLS Regression Models Predicting Women's Employment Outcomes

Predictor	Model A: Gender wage gap	Model B: Women in management	Model C: Care-sector employment
Constant	2.292	25.719*	1.144
Tertiary expenditure per student	-9.706×10^{-5} (-.144)	-.001* (-.429)	.000*** (.641)
Population aged 65+ (%)	-.165 (-.106)	-.884** (-.549)	.095 (.110)
Female labour-force participation	.164 (.259)	.582** (.754)	.066 (.162)
SIGI score	.035 (.042)	-.422* (-.424)	-.075 (-.140)
Model statistics			
N	16	34	37
(R)	.210	.719	.899
(R ²)	.044	.517	.808
Adjusted (R ²)	-.304	.450	.784
(F)	0.127	7.757***	33.617***
Model p-value	.970	<.001	<.001

Note. Values are unstandardised regression coefficients (B); standardised coefficients (β) are reported in parentheses. SIGI = Social Institutions and Gender Index. The coefficient for tertiary expenditure represents the change in the dependent variable associated with a one-dollar increase in PPP-adjusted tertiary expenditure per student.

* $p < .05$. ** $p < .01$. *** $p < .001$.

$$\begin{aligned} \text{Care-Sector Employment}_i &= 1.144 \\ &+ 0.0004(\text{ Tertiary Expenditure}_i) \\ &+ 0.095(\text{ Population Aged } 65+_i) \\ &+ 0.066(\text{FemaleLFPR}_i) \\ &- 0.075(\text{SIGI}_i) \end{aligned}$$

The model was statistically significant and the standardized coefficients were:

$$\begin{aligned}
 R^2 &= 0.808 \\
 \text{Adjusted } R^2 &= 0.784 \\
 F(4,32) &= 33.617, p < 0.001, N = 37 \\
 \beta_{\text{HEF}} &= 0.641, \\
 \beta_{\text{AGE}} &= 0.110, \\
 \beta_{\text{FLFPR}} &= 0.162, \\
 \beta_{\text{SIGI}} &= -0.140
 \end{aligned}$$

The tertiary-expenditure coefficient indicates that an additional \$1,000 in PPP-adjusted expenditure per tertiary student was associated with an estimated:

$$0.0004 \times 1,000 = 0.40$$

percentage-point increase in care-sector employment, holding the other predictors constant.

There was no statistical significance for model A and tertiary expenditure had no relation to the gender wage gap. Although the results for model B were significant, results for tertiary expenditure were significantly negative whereas H2 predicts positive association between tertiary expenditure and managerial representation of women. Model C was the best model accounting for 80.8% of the variance in care-sector jobs, and the greatest standardised regression coefficient, $\beta = .641$, was for tertiary expenditure.

3.7 Moderating Role of Population Ageing

Adding the interaction between tertiary expenditure and the continuous population-ageing measure increased the explained variance from $R^2 = .808$ to $R^2 = .850$, corresponding to $\Delta R^2 = .042$. The interaction was positive and statistically significant, $B = 4.358 \times 10^{-5}$, $\beta = .321$, $t = 2.94$, $p = .006$. In the categorical specification, adding the interaction between tertiary expenditure and ageing-economy status increased the explained variance from $R^2 = .827$ to $R^2 = .879$, corresponding to $\Delta R^2 = .052$. This interaction was also positive and statistically significant, $\beta = .370$, $t = 3.66$, $p = .001$. These findings indicate that the positive association between tertiary education expenditure and care-sector employment became stronger as population ageing increased. Therefore, H4 was supported under both continuous and categorical operationalisations of ageing.

$$\begin{aligned}
 \text{Care-Sector Employment}_i &= b_0 \\
 &+ 0.0004(\text{HEF}_{c,i}) \\
 &+ 0.23(\text{AGE}_{c,i}) \\
 &+ b_3(\text{HEF}_{c,i} \times \text{AGE}_{c,i}) \\
 &+ 0.12(\text{Female}^- \text{LFPR}_i) \\
 &- 0.10(\text{SIGI}_i) \\
 R^2 &= 0.850 \\
 \Delta R^2 &= 0.042
 \end{aligned}$$

Figure 1 shows graphically the positive correlation between an increase in expenditure on tertiary education and the increase in population ageing on the prediction of employment in care sector. At higher levels of population ageing the slope of the financing–care–employment relationship increases.

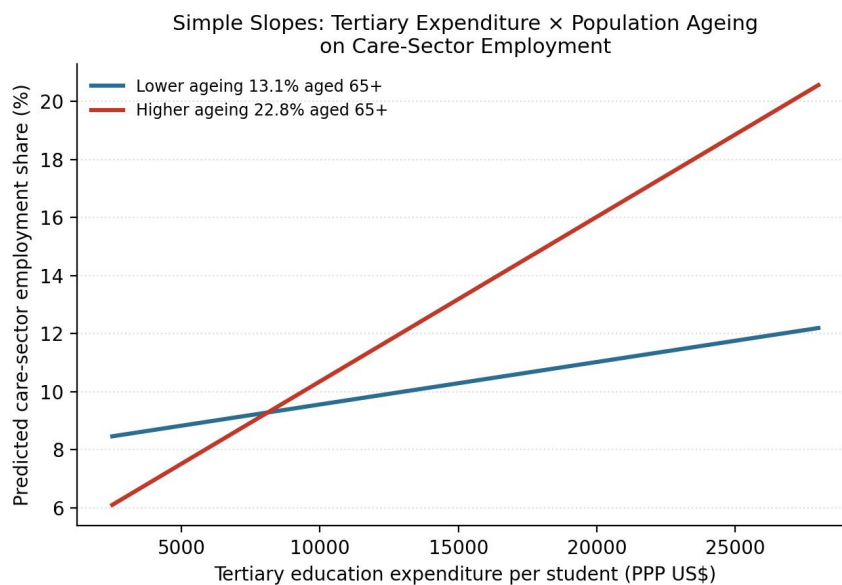


Figure 1. Simple slopes of tertiary education expenditure predicting care-sector employment share at ± 1 SD of population aged 65 and above.

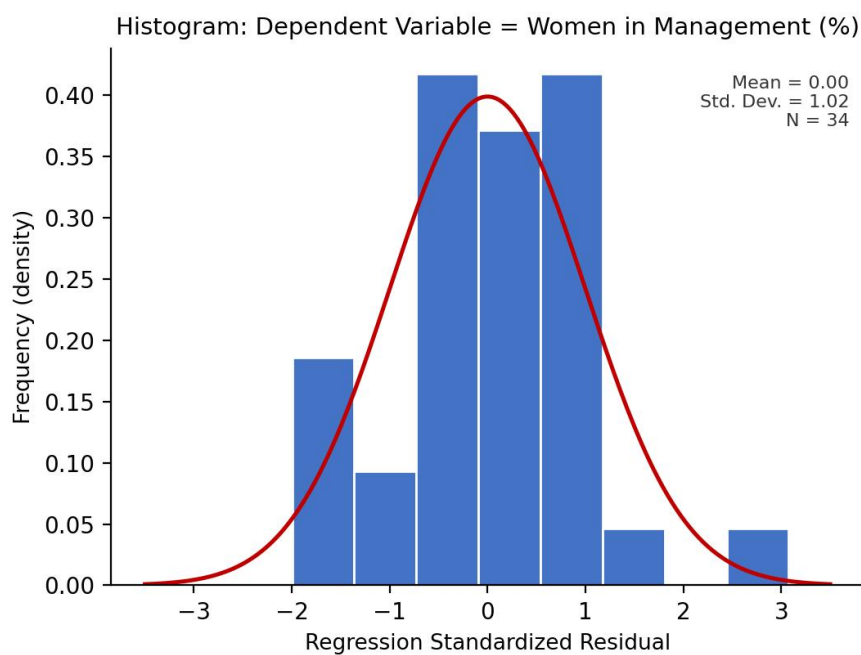


Figure 2. Histogram of regression standardized residuals, dependent variable: women in management (%).

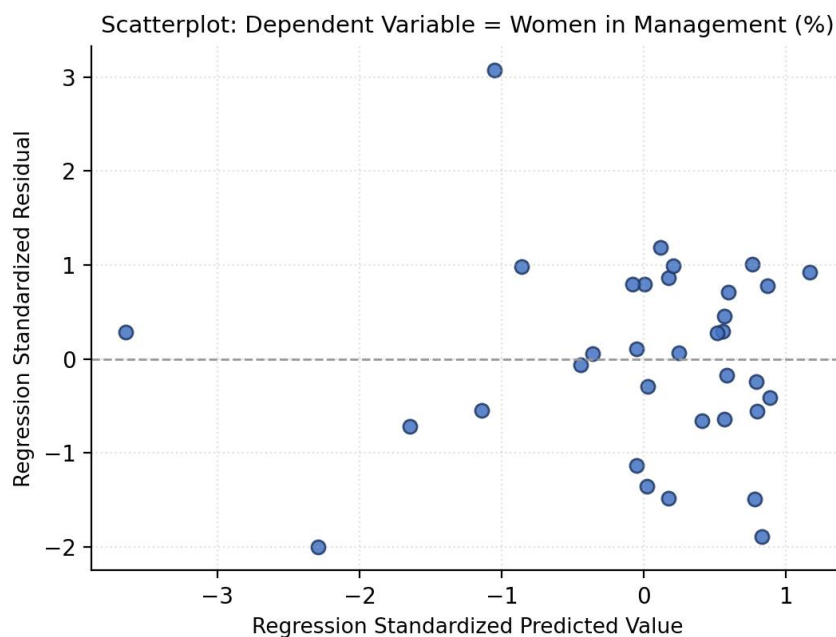


Figure 3. Scatterplot of regression standardized residuals against standardized predicted values, dependent variable: women in management (%).

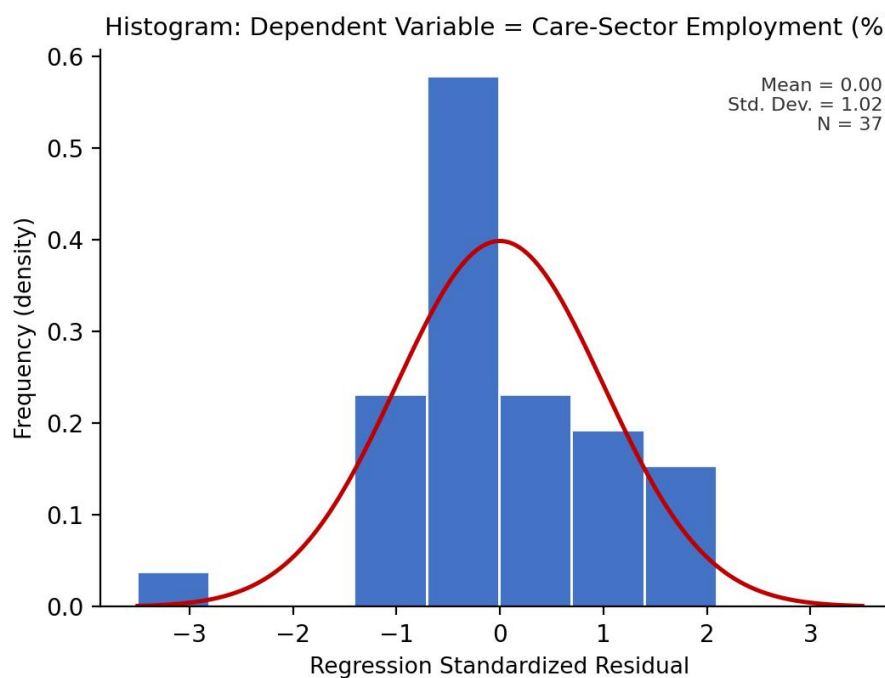


Figure 4. Histogram of regression standardized residuals, dependent variable: care-sector employment (%).

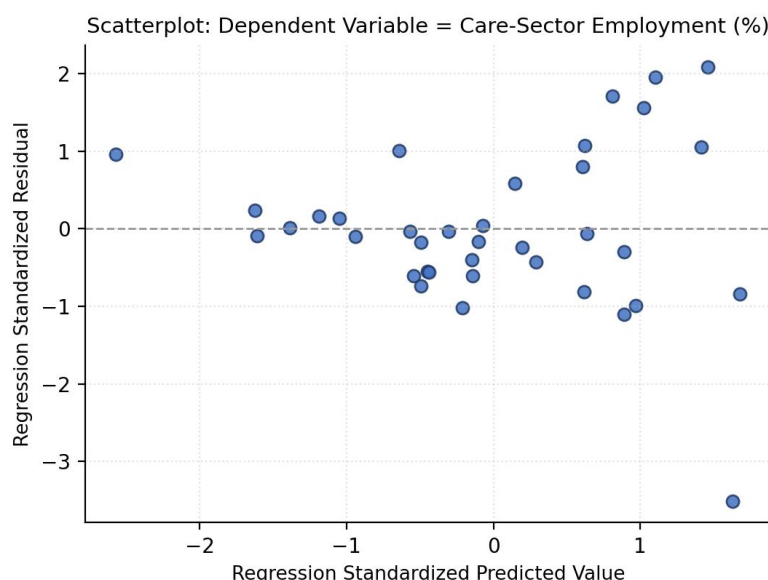


Figure 5. Scatterplot of regression standardized residuals against standardized predicted values, dependent variable: care-sector employment (%).

3.8 Robustness Analysis

Restricting Model C to OECD members produced a statistically significant model, $R^2=.769$, adjusted $R^2=.737$, $F(4,29)=24.07$, $p<.001$. Tertiary expenditure remained a significant positive predictor of care-sector employment, $\beta=.649$, $t=5.61$, $p<.001$, whereas population ageing, female labour-force participation, and SIGI were not statistically significant. This finding indicates that the principal positive association between higher education financing and care-sector employment remained robust in the OECD-only sample. Ageing economies also had significantly greater care-sector employment than non-ageing economies, $M=13.27\%$ versus $M=9.19\%$, Welch's $t(37.22)=-3.70$, $p=.001$. In contrast, women's managerial representation did not differ significantly between ageing and non-ageing economies, $M=34.47\%$ versus $M=34.67\%$, Welch's $t(22.19)=0.07$, $p=.947$. The gender wage-gap comparison was statistically significant under the unequal-variance estimate, Welch's $t(13.83)=2.54$, $p=.024$, but this result was based on only two non-ageing countries and should not be interpreted substantively. Durbin-Watson statistics for the three principal regression models ranged from 1.73 to 2.06, indicating no evident residual autocorrelation.

Table 5. Moderation and Robustness Models Predicting Care-Sector Employment

Predictor/model statistic	Continuous-ageing interaction	Ageing-dummy interaction	OECD-only Model C
Tertiary expenditure per student	0.0004***	0.0002*	0.0004***
Population ageing measure	0.23*	1.71*	0.12
Financing $\times$ population ageing	$4.358 \times 10^{-5**}$	$\beta = .370^{***}$	—
Female labour-force participation	0.12*	0.11*	0.07
SIGI score	-0.10	-0.05	-0.09
N	37	37	34
R^2	.850	.879	.769
ΔR^2 due to interaction	.042	.052	—

Note. Unstandardised regression coefficients (B) are reported except for the financing $\times$ ageing-economy dummy interaction, for which the standardised coefficient (β) is presented because its unstandardised coefficient was rounded to 0.000 in the SPSS output. In the continuous model, population ageing refers to the percentage of the population aged 65 years and above. In the dummy model, ageing status was coded 1 for ageing economies and 0 for non-ageing economies. Continuous predictors used in the interaction models were mean-centred. SIGI = Social Institutions and Gender Index.

* $p < .05$. ** $p < .01$. *** $p < .001$.

$$\begin{aligned} \text{Care-Sector Employment}_i &= b_0 \\ &+ 0.0002(\text{HEF}_{c,i}) \\ &+ 1.71(\text{Ageing}^{\text{Economy}}_i) \\ &+ b_3(\text{HEF}_{c,i} \times \text{Ageing Economy}_i) \\ &+ 0.11(\text{Female-LFPR}_i) \\ &- 0.05(\text{SIGI}_i) \end{aligned}$$

where:

Ageing Economy = 0, & population aged 65+ below 18% & 1, & population aged 65+ equal to or above 18%

The categorical interaction model accounted for:

$R^2 = .879$

and the interaction contributed:

$\Delta R^2 = .052$

or 5.2% additional explained variance.

The manuscript states that the interaction was positive and statistically significant, but its exact unstandardized coefficient, standard error, t-value, and p-value are absent.

The continuous interaction model accounted for 85.0% of the variance in care-sector employment and the interaction itself accounted for an additional 4.2% variance. For the categorical interaction model 87.9% of the variance was explained with the interaction accounting for 5.2%. The positive and significant interaction coefficients suggest that the relationship of tertiary education expenditure on the one hand and care-sector employment on the other hand became more positive with greater population ageing. Additionally, the OECD-only model included a very positive tertiary expenditure coefficient that indicates the strength of the primary financing-care-employment relationship, but the interaction has not been tested in the OECD subsample.

4. Discussion

There was no relationship between higher education financing and the gender wage gap; and a negative relationship between higher education financing and the representation of women in management; and a strong positive relationship between higher education financing and employment in the care sector. Without doubt, population ageing had a strong impact on reinforcing the financing-care-employment link using both continuous and categorical specifications. These findings suggest that, however, not all aspects of gender equality in employment can be achieved in the same way through the financing of education. The small effective sample ($n = 16$) should be interpreted with caution as the relationship was not significant. It does, however, reflect evidence of a low ability of increasing education to close wage gaps, as wage gaps are determined by occupational sorting, working-time arrangements and wage-setting institutions, which are unrelated to the level of aggregate financing (Blau & Kahn, 2016; Olivetti & Petrongolo, 2016). Interestingly, this negative correlation might be due to the fact that countries that invest in tertiary education are not necessarily the countries that have the most open managerial pipelines for women; institutional norms and/or labour-force participation seem to have a stronger impact, which aligns with studies showing that the availability of resources is not the only determinant of women's leadership positions (Gregory, 2021; McKie & Jyrkinen, 2021).

The fact that the SIGI coefficient is quite high indicates that institutions rather than education expenditure itself are important determinants of access to leadership. This positive association is in line with the key role that investment in the tertiary and vocational education systems plays in training-heavy nursing, allied health and social-care occupations (OECD, 2023a). For care systems where education systems provide skilled workers to the sector, expenditure directly correlates to employment share in the sector, as opposed to participation effects with wage gaps and management. The financing care-employment relationship was very strong in both the continuous and categorical specifications and was greatly supported by population ageing. The positive main connection between tertiary expenditure and the number of employees in the care sector, however, was still statistically significant in the OECD-only sample, but the interaction effect was not re-estimated for the OECD-restricted sample. This aligns with the increased demand for the long-term care and health sector due to ageing populations (Addati et al., 2018; OECD, 2020), but seems to be specific to occupations in the care sector. This suggests that ageing does not have a generalised effect on gender equality but rather a specific one that is channelled through care employment, and the wages gap or management.

The results indicate that there are three key issues to prioritize: first, to ensure that tertiary financing supports the future health, nursing and long term-care workforce needs; second, to link tertiary financing with clear gender-equality and anti-discrimination policies and programs tertiary financing alone did not produce wage equity or managerial access; and third, to improve pay, conditions and career mobility in care occupations, so as to ensure that growth in the sector translates to quality employment for women (England, 2005; World Bank, 2024). The cross sectional nature of the design may not be able to reflect any causal relationship and country-level analysis could mask within-country and regional disparities. There are some differences in the reference years between indicators. The gender wage-gap model used only 16 countries and there were missing cases in the women-in-management and SIGI indicators. There was no sex disaggregation of care-sector employment and the sample was skewed towards OECD economies making generalisability difficult to non-OECD economies. Furthermore, expenditure per student fails to reflect how funding is distributed, how effective the funding is, and gender responsiveness of funding (Chang et al., 2019). Future research should draw up an actual country-year panel to allow for fixed-effects or multilevel modelling, disaggregate care-sector

employment by sex and distinguish between public and private funding of care-sector education. To better understand how the link between education financing and gendered employment outcomes works, childcare systems, parental-leave policies, unionisation and wage-setting institutions could also be included.

5. Conclusion

This study aimed to test this hypothesis, whether there is a positive relationship between higher education financing and women's employment outcomes, across 40 countries and whether population ageing moderates this relationship. The analysis, based on cross-sectional secondary data and multiple regression, showed that tertiary expenditure per student was not related to gender wage gap and, surprisingly, negatively related to women's representation in management, while it was strongly and positively related to employment in the care sector. The financing–care-employment relationship was strongly reinforced by population ageing, measured both continuously and categorically. Also, the positive main relationship between tertiary expenditure and care-sector employment was statistically significant with the analysis limited to OECD countries. Overall, the results show that the impact of increased funding of higher education on gender inequality in employment is not the same for all aspects of gender inequality. Financing seems to be strongly linked to the growth of the labour demand in the care sector in ageing societies, and wage equality and managerial leadership seems to be more influenced by institutional and labour market factors than by education expenditure. This separation has policy implications for policy design, since an expansion of tertiary financing is unlikely to bring us any closer to closing gender wage gaps or opening leadership opportunities, while it might seem to contribute to the emergence of the care economy related to population ageing. The following are cautious policy implications. To respond to ageing-related labour demands as well as reduce gender inequalities, governments should focus tertiary education financing on the expected demand for health and social care workers but also seek other institutional changes which funding, alone, cannot achieve such as anti-discrimination measures, pay-equity monitoring and leadership-development pathways. The design is cross-sectional and observational, and results are therefore cross country association and not causal effect.

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