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What Determines Social Service Workers' Wages: A Cross-Country Analysis Using a Luxembourg Income Study

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Abstract

The study is aimed at exploring the influencing factor of wages among social service workers (SSWs) through a cross-country analysis. Using Luxembourg Income Study data, two aspects are emphasised: first, the trends and patterns of wage levels among SSWs. Second, the determining factors that influence their low wages at a cross-national level and how those factors are intersectionally intertwined to exacerbate the wage level. Three significant findings are confirmed: a universal gendered wage gap; a more significant wage gap for those on part-time and/or fractured contracts and employed in the private sector; and a substantial association between a higher education and higher wages. Two policy concerns are raised for discussion: first, tackling the gendered wage gap and ensuring more secure employment, and a guaranteed living wage for those employed in the private sector. Second, enhancing the professionalism for empowering their effective choices in the labour market is essential.

Keywords: cross-country analysis; gender; Luxembourg Income Study; marketisation of care; social service workers; wage level

Introduction

The global response to the Covid-19 crisis has exposed the vital function of social service work in ways not seen before, both paid and unpaid. As Covid-19 spread, increasing numbers of people became sick and needed care. The demand for social service work rose dramatically, not only in home-based, but also, facility-based care (Bahn *et al.*, 2020; Thomason & Macias-Alonso, 2020). Among the consequences of this is that social service work in our society has become more highly valued and appreciated than ever before. The Covid-19 crisis has also spotlighted the gendered nature of the informal service sector (Bahn *et al.*, 2020; Collins *et al.*, 2020) as well as social service workers' employment conditions. In particular, care workers, who account for a sizable proportion of social service workers, tend to be female- and ethnic- minority-dominated as well as on precarious employment contracts (Sayer, 2005; Himmelstein & Venkataramani, 2019; Bahn *et al.*, 2020; Thomason & Macias-Alonso, 2020). Care workers working on the front line have no choice to telecommute, for they must attend even when they are afraid of contracting the virus or feel unwell (Bahn *et al.*, 2020). Moreover, the remuneration for care work remains poor (Thomason & Macias-Alonso, 2020), despite their lower wages having become more visible when compared with other public service sectors, such as teaching, counselling, and other health services (England *et al.*, 2002; Dowling, 2021).

While taking the social service and care workers' lower compensation during the pandemic into consideration in this study, due to the shortcomings of available data covering care workers' wages

during the Covid-19 pandemic, the article is aimed at investigating the salient factors, generally leading social service workers (hereafter ‘SSWs’) into lower wages. In order to do so, first, we consider the extant theories that explain why SSWs tend to face a lower wage compared to other industry workers, such as public administration and education. In particular, we bring attention to lower wages by analysing individual demographic characteristics, including age, gender, marital status, education level, employment arrangement, employment sector (private or public), number of paid jobs, and immigration status. We also recognise that the lower wage could be improved through state intervention and social policy, as the evidence shows that in social democratic countries, such as Sweden and Denmark, this wage gap is smaller than that in neoliberal welfare states, such as the United Kingdom and United States (Blau & Kahn, 2003; Budig & Misra, 2010; Kroos & Gottschall, 2012; Lightman, 2018, 2019, 2021). Drawing upon existing findings, we investigate the intersectional barriers to understand the lower wage level, which could be already embedded in the institutional settings in the focal countries.

The article is divided into four parts. It begins by offering a theoretical rationale for the SSWs’ lower wages and introducing hypotheses. We interrogate the intersectional and structural barriers that have led to the penalties for SSWs. Then, the research questions are posed, the methodological approaches undertaken for this study are explained and the results are presented. The final section concludes with discussion of the key implications of the findings.

Theoretical reasoning behind lower wages for SSWs and the hypotheses

What leads to social service workers having lower wages?

No single factor can explain SSWs’ lower wages compared to other industries. England *et al.*, (2002) examined the lower pay of occupations involving care, such as teaching, counselling, providing health services, or caring for children. They demonstrated that care work pays less than other occupations when the education and employment experiences are equally considered. Moreover, they clearly elicited that women get paid less than men for care work.

In this study, we explore the influencing factor of wages among SSWs, which can be attributed to intersectional mechanisms, such as ghettoised labour forces mainly made up of (aged) women and/or ethnic minorities (Duffy, 2011; Shutes, 2012; Ravenswood & Harris, 2016; Lee, 2018; Beham *et al.*, 2019). Further, recent policy trends towards the marketisation of care with minimal state regulations along with increasing numbers of (im)migrant SSWs in the market (Abbasian & Hellgren, 2012; Shutes & Chiatti, 2012; Williams, 2012) could be salient. In the context of migrant SSWs, Yamane (2021) has argued that the marketisation of care services renders them a vulnerable group, particularly when working in care. In this section, we present the theoretical reasoning that leads us to contend that there is a wage penalty for doing care work.

What leads to SSWs being lowly paid? The first reason is that low-wage care workers account for a large proportion in the social service industry. In general, people need care most when they are least able to work to pay for it: the ‘dependency’ of childhood, old age, and illness (England *et al.*, 2002). When those with few resources need care, it is provided by paid workers, family members, or the state (Meyer & Storbakken, 2000). The economic dependency of those who need care services leads to them being less able to purchase care in the market to meet their needs. Moreover, if they need long-term care or have a chronic illness, they may not be considered as being as ‘productive’ as other consumers in the labour market. Unlike other social service area consumers, such as public administration and education, the service users in the care market may be considered neither ‘productive’ (a future resource for investment) nor ‘competitive’ (an affordable consumer). This is because, particularly in neoclassical economics, the value of human capital can be decided by the stock of skills, knowledge as well as experiences possessed by an individual (Becker, 1971; Mincer, 1974). Under this lens, the economic dependency and low productivity of those who need care may explain why care workers are low paid, in that they have fewer skills than any other service sector. Those who need care pay less because their resources are

limited. Care workers are, therefore, not motivated to gain further skills when they will not be paid more for doing so.

Yet, this relation between economic dependency and human capital still does not explain the significant lower wages applied to women and ethnic minority care workers. Social service work often encompasses those duties that women are expected to provide their family members, unpaid, out of love and obligation, such as looking after children or nursing sick relatives. Indeed, paid care work involves undertaking those functions of care for dependents historically carried out mostly by women in the family. Cultural feminism sees that the undervaluing of women and care workers are associated with one another, being important factors in the lower wage situation. Cultural values affect what jobs are valued by employers, and such valuations include a bias against any job or skill associated with women. Regarding which, Kilbourne *et al.* (1994) study demonstrates the role of both human capital theory and the cultural theory of gendered valuation in explaining between-occupation wage differences and the sex gap in pay. For example, female-dominated jobs, such as administrative work, are still better paid than those of care workers. This suggests that care work is undervalued not only because it is carried out mainly by women, but also, because the skills associated with 'mothering' are more likely to be seen as 'natural' or inherent to women and thus, not worthy of recognition or fair remuneration (Steinberg, 1990; Barron & West, 2013; Hebson *et al.*, 2015; Pietrykowski, 2017a).

Social service industry and marketisation of care

While care work has continued to be undervalued, social care service industries have absorbed a continuously increasing share of the labour force in modern economies. This has become a prominent feature of the economic growth process in many OECD countries during the last century as many societies have increasingly aged (Messina, 2005). However, while governments and economic actors have tried to adopt new strategies to bring service productivity more closely in line with that of manufacturing, the trilemma of equality, employment growth and budgetary restraint has been challenged by increasing productivity in the services sector (Iversen & Wren, 1998). What has emerged in many countries is a shift away from the state providing care (or in some countries, especially in Southern Europe, from relying on family care) towards marketised care provision, cash payment to individuals and/or subsidising private profit-making centres (Rhodes, 1996; Guillén & Matsaganist, 2000; Williams, 2012).

In parallel, Shutes (2012) study shows how far the employment of migrant workers in the care sector has become gradually increased across Western welfare states. As the proportion of migrant workers has been rising in the social service industry, different, but interconnected, dimensions of the marketised care have emerged across Western welfare states (Daly & Lewis, 2000). These processes include, first, reforms to the public provision of care services, including their contracting out to private and/or non-profit providers (Glendinning, 2010). The private sector now accounts for the majority of residential and home care providers in England, for example (Eborall *et al.*, 2010). Second, public responsibility for the purchasing of services has been shifted onto individuals and their families. That is, this form of contracting out service delivery is underpinned by the notion that service users purchase services according to their individual choices in the care market. For example, this is pursued through the use of cash-for-care services, such as vouchers or direct payments (Brennan *et al.*, 2012; Rodrigues, 2020). Further, this contracting out to private and/or non-profit providers has the effect of creating a commodified relationship between care buyers (or receivers) and sellers (either service agencies or workers). From this perspective of care as a commodity, the role of the state is relatively minimal, with respect to service forms, service quality and costs, which is the third prominent aspect of marketised care (Lloyd & Penn, 2010). The progress of this privatisation of social care service is not an exception for many East Asian countries either, such as in China, Japan, and South Korea (Holliday, 2000; Kim, 2005; Aspalter, 2006; Choi, 2012; Broadbent, 2014; Yip & Hsiao, 2014; Lee, 2017; Jia *et al.*, 2018). In fact, the industry of social care,

including health care, has become more privatised and market oriented, especially since the Asian economic crisis of the late 1990s. Kim's (2005) study explored how the private health care sector in South Korea has further strengthened its dominance, especially with the neoliberalism ideology promoted in late 1990s, while the public sector has been weakened through the deregulation of occupational safety and/or the reduction in the number of work-environment assessments. Broadbent's (2014) study also examined the impact of privatising home care services in Japan since the government privatised long-term care for the elderly in 2006. It was concluded that, the privatisation of home care services has not only intensified the workers' working processes, but also deteriorated the employment conditions, thus contributing to the high turnover rates and chronic labour shortages in the labour market.

In relation to this article, the question here is how can we ensure SSWs' pay will be both secure and decent when the state's role has been curtailed and social services still need to be provided to those in need?

Despite existing evidence-based studies having addressed what brings about the lower wages among SSWs, there is still a lack of recent country-based analysis to tackle the intersectional and structural barriers that lead to this circumstance among care workers. In this study, we address the importance of employing a cross-national comparative study: first, by comparing the trends and patterns of lower wages among SSWs, followed by their social demographics. This helps to identify the prevailing social and demographic features of SSWs' lower wages at a cross-country level. Within the data availability, the study includes the social demographic features, such as age, gender, marital status, education level, employment arrangements, employment sector (private or public), number of jobs, and immigration status. While having them as our primary independent variables, the main features of the cross-sectional trend and patterns of the lower wages among SSWs constitute our primary dependent variables. We then hypothesise that those social demographic features tend to be intertwined in terms of exacerbating the lower wages among SSWs. While taking SSWs' income as a primary dependent variable in our study, we seek to find the intersectional explanations as to what leads to the variation at a cross-country level, if any. By doing so, the study sheds lights on how to tackle this cross-national prevalence of lower wages among SSWs. We argue that it is important that the employment of SSWs should be recognised as a pillar of the labour market and thus, attractive, which can be achieved by tackling the cultural stereotype of such work being 'low-skilled'.

Research questions and data

Drawing upon the existing theoretical discussions and deduced hypotheses, and at the same time the demands of comparative cross-country analysis, the research questions are set out as:

1. *What are the cross-national trends and patterns of lower wages among SSWs?*
2. *What are the determining factors that influence the SSWs' lower wages at the cross-national level? Specifically, what brings about significant differentiation at the cross-country level? And how are these significant factors intertwined in exacerbating the lower wages?*

Our primary data source is the Luxembourg Income Study (hereafter 'LIS'), which is the latest and most widely available income survey for Europe, North America, Latin America, Africa, Asia, and Australasia, spanning five decades. It contains fifty different countries' micro level data, providing information at both 'household' (called '*H file*') and 'individual people's' (called '*P file*') levels (see www.lisdatacenter.org for documentation). The data includes information, such as their labour income, capital income, pensions, public social benefits, and private transfers, as well as taxes and contributions, demography, employment, and expenditure, although some data may not include both the abovementioned two levels. For example, data related to the labour market can be

only found at the individual level, which specifies an individual's main job in terms of industry, weekly hours worked, gross hourly wage, net hourly wage, and so on.

One key omission of the LIS data, however, is consistent data on the industrial category of 'social service'. For this study, we were eager to have consistent and comparable data in order to analyse SSWs' working conditions, including their individual characteristics along with wages, employment arrangements (fulltime or part-time), employment sector (public or private), and the number of employment contracts held. Unfortunately, there was neither consistent nor comparable data that would allow us to be able to analyse SSWs' working conditions at the cross-level.

For example, Lightman (2018) employed the International Standard Classification of Occupations (ISCO-08), which included doctors, nurses, and teachers (in High Status Care Work) and sales jobs in health and education, such as teachers' aides and personal support workers (in Low Status Care Work). However, we believe that the professional and education (especially secondary) sectors should be excluded in order to be closer to the care worker classification. Budig & Misra (2010) can be also another example, but the definition of social service workers in their study is somewhat broader by including teachers, nurses, personal service workers, clergy, physicians, police officers, and private care workers.

However, we found that Razavi & Staab (2010) defined social service workers more specifically by including nurses, elementary school teachers, childcare, aged services workers, social workers, home care workers, and domestic workers. Similarly, Bahle (2003) defined the concept of social services as face-to-face, life support services and excluded the education sector.

By drawing upon Razavi & Staab (2010) and Bahle's (2005) concepts of social service workers, in this study, we employed the industry classification in health and social work, number fourteen of seventeen categories in the ILO's international standard industrial classification (hereafter ISIC) 3.1. We considered this to be the closest equivalent to care worker. The reason is that when it comes to the classification of the 'health and social work' industries, the social service industry includes about 1-4 per cent of medical professionals. Whilst this can be seen as a limitation of the currently available data in the LIS, there has been a widely accepted assumption in academia that the industrial category of 'health and social work' typically covers social service workers, including care workers (Leira, 1994; Alber, 1995; Bahle, 2003).

We consider demographic characteristics as determinants of wages for workers in the social service industry. First, we include an age variable as well as an age-squared one, which follows the general wage determination model in which wages lag behind or even decline after a certain age, rather than increasing continuously with age (Becker, 1971; Mincer, 1974; Kilbourne *et al.*, 1994; Ng & Feldman, 2008; Lloyd & Penn, 2010). We also include marital status and immigrant status as demographic variables, because women are more likely to be employed in the social services industry and they are more likely to accept lower wages. We can expect that immigrants are more likely to work in unskilled social service jobs and are, therefore, willing to accept lower wages. As a human capital variable, we added one for the worker's education level. As for job characteristics that affect wages, we treat the employment contract variable as a dummy variable that equals one, if the job is a public one in the local/central government and zero, if it is in the private sector. It has been argued that workers with more than one job can afford to accept relatively lower wages (Shutes & Chiatti, 2012; Steinberg, 1990; Williams, 2012; Yamane, 2021).

With regard to wages, we applied purchasing power parity and the inflation rate, then logged the annual wage to increase statistical normality by reducing the deviation between the data. Both the dependent and independent variables as well as the operational definitions for the data analysis are included in Table 1 below.

For the cross-country data analysis, eighteen countries were selected, for which such data were available: Australia, Austria, China, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Switzerland, South Korea, Luxembourg, the Netherlands, Spain, Taiwan, the UK, and the USA. Table 2 lists the countries with the year in which the data were collected, the total number of

Table 1. Data variables and operationalisation

Variables		Operational definition
Dependent variable	Annual wage income	Logged
Independent variables	Age	Squared age
	Gender	Male = 0, Female = 1
	Marital status	Married and/or cohabiting = 1
		Single = 2
		Divorced and/or separated = 3
	Level of education	Elementary = 1
		Middle = 2
		High = 3
		Above university = 4
Employment arrangement	Fulltime = 0	
	Hourly paid = 1	
Employment sector	Private = 0	
	Public = 1	
Number of employment contract	One contract = 0, More than 2 = 1	
Immigrant status	Non-immigrant = 0, Immigrant = 1	

Table 2. Sample of countries

Country ¹	Year	Total number of respondents	Number of health and social work respondents
Australia	2013	28,547	652
Austria	2014	13,043	1,622
China	2013	61,742	2,361
Denmark	2013	177,269	11,869
Finland	2013	29,112	2,570
France	2010	25,364	432
Germany	2014	26,824	4,648
Greece	2013	14,897	836
Iceland	2010	8,840	1,468
Ireland	2010	15,539	1,029
Switzerland	2013	6,479	934
South Korea	2013	44,882	375
Luxembourg	2013	9,661	1,446
Netherlands	2013	23,756	2,061
Spain	2013	37,491	1,251
Taiwan	2013	46,386	772
UK	2013	65,232	6,242
USA	2013	210,128	19,462

¹Alphabetically listed.

respondents as well as the number of health and social work respondents in the survey. With regard to the total number of respondents and the number of health and social work respondents, the variation across countries was larger than expected. This is because the LIS dataset refers to harmonised microdata for one country and one year, rather than a collective data set covering different countries and years.

Results

1. Comparing the cross-national trends and patterns of wage differentiation among SSWs

(In Table 3) Wage differentiation across these eighteen countries has been analysed based on the *respondents'* gender, employment arrangement (*either part-time, fulltime or hourly paid*), and employment sector (*either public or private*). With regard to the wage ratio between male and female workers, in most countries, the latter tend to get paid less than the former, except for Luxembourg, where wages are slightly higher among female SSWs than their male counterparts, at 107 per cent. While no significant patterns exist between different countries, women's wages are typically less than 80 per cent of male *workers'* wages in Germany, Ireland, Iceland, the USA, Finland, and all East Asian countries, including China, Japan, Korea, and Taiwan. Interestingly, China shows a relatively equal gender wage gap between female and male *workers* (57 per cent and 43 per cent, respectively).

In terms of employment arrangements (fulltime or hourly paid), more female workers are employed part-time, and this gendered employment pattern is more visible in countries, such as Australia, Ireland, Iceland, Luxembourg, the UK, and the USA. However, the gender ratio in terms of employment arrangements appears almost equal in Denmark, Finland, and Greece, while there is a slightly higher number of men employed part-time in France, China, and Taiwan. This gendered employment arrangement may be directly related to the wage differentiation between fulltime employed SSWs and hourly paid ones. The fulltime workers tend to get paid more in social democratic countries compared to other liberal, East Asian, and Southern European countries, while no such regular patterns of wages exist within the selected countries. There are also some outliers, such as in Ireland, Luxembourg, and the USA, showing higher wages for the fulltime workers than any Nordic countries, such as Denmark and Finland. Having said this, common features of wage differentiation among the selected countries are found; for SSWs these being female-dominated, low-paid, and likely to employ staff part-time.

We proceed to analyse data with regard to the division of employment sectors (public or private). Rather than showing any regular pattern across countries, the SSWs employed by the public sector are overwhelmingly greater in Austria, Finland, and Luxembourg than those in the private sector in all East Asian countries, France, Germany, Greece, Ireland, and the UK. Notably, in Austria and Luxembourg, this greater number of SSWs employed in the public sector opens a discussion as to whether it can be related to the relatively higher wages among those fulltime employed workers.

Despite the dissimilarities across countries, it is obvious that, in East Asian countries, there are more female workers employed on a part-time basis (except China), and the wages are lower than those of male workers. Further, the total wage level, including that of hourly paid workers, is lower than in other countries. This prompts a discussion as to whether lower wages among workers in East Asia might be contributed to by the predominance of the private sector.

Determining factors that influence the lower wages in and/or outside the welfare regime (regression)

In this section, we proceed to analyse the determining factors that impact on the SSWs' wages across the selected countries. We considered their age, gender, marital status, level of education, employment arrangement, employment sector, and immigration status to be independent

Table 3. Wage differentiation among the sample countries

Country	Wage ratio between men and women	Female workers' ratio	Male part-time workers' ratio	Female part-time workers' ratio	Fulltime	Hourly paid	Public	Private
Australia	80	79	10	23	39,156	19,977	–	–
Austria	90	79	11	26	38,820	18,732	63	37
China	79	57	31	27	9,246	5,137	22	78
Denmark	88	83	21	21	39,040	20,184	–	–
Finland	79	87	19	20	32,321	18,545	51	14
France	89 ¹	75	20	15	24,966	20,385	20	41
Germany	73	80	12	31	37,565	17,054	37	63
Greece	83	65	11	12	20,224	7,351	19	81
Iceland	68	84	11	18	30,939	19,545	–	–
Ireland	74	81	14	21	46,192	16,861	30	69
South Korea	72	82	2	7	21,396	5,296	10	76
Swiss	88	65	35	30	42,550	20,320	–	–
Luxembourg	107	78	7	22	43,666	26,970	67	33
Netherlands	85	82	19	33	39,577	24,446	–	–
Spain	82	76	10	16	28,533	10,783	–	–
Taiwan	76	76	5	3	27,690	12,999	6	91
UK	85	82	6	18	26,950	12,111	34	66
USA	70	80	13	18	40,554	16,415	6	63

¹Due to the small size of the respondents for women in wave 9, we have employed wave 6 for this case.

variables, while deploying their wages as the dependent one. Via regression analysis, we investigate the factors that influence the SSWs' lower wages at a cross-national level. That is, what brings about significant differentiation at a cross-country level and how are these significant factors intertwined in exacerbating their wage penalty?

The results of regression analysis are given in Table 4. To begin with, the variable of gender is found to be significant in terms of determining the wage penalty: in most countries, female workers are paid less than male workers. The influence of age is interesting, whereby in most countries it can have a positive impact in increasing the level of wages, but it also shows that the level of wages can be reduced after a certain age. For instance, in Australia, Austria, Denmark, Germany, Ireland, the Netherlands, Switzerland, and the UK, where the age variable was positive and significant for wages, the age squared variable was significantly negative, which means that the wages decrease when reaching a certain age range. Whilst in South Korea age would appear to be positive in terms of older SSWs being paid more, this was not statistically significant in other East Asian and Southern European countries. This requires further interrogation, in light of the fact that many SSWs start their career in their middle age.

Regarding marital status, marriage is found to be statistically insignificant: it hardly influences wages at all, except in Germany, where there is a positive impact for those who are single. In Australia and Denmark single SSWs tend to be paid less than non-single ones. Education is found to be statistically significant, especially among those with a high school certificate and a university degree. In most countries, this has a positive impact on wages, regardless of the type of welfare regime. In particular, for those with education beyond a university degree, wages are higher than for those without this qualification in all the selected countries. Except for Iceland, Ireland, and Korea, the high school graduation variable is statistically significant, whilst the university variable is so in all the focal countries.

With regard to employment type, this is statistically significant in all the selected countries and part-time workers are paid less in most. Employment in the public sector is found to be significant, especially in Finland, France, Germany, Ireland, Taiwan, and the UK. With regard to the number of jobs, in the UK, those with more than two tend to get paid more, whereas such people tend to be paid less in Switzerland and Greece.

Interestingly, the variable of immigration status was found to be statistically insignificant (except in Luxembourg), which is in contrast to the findings of other studies, such as that of Lightman (2018). This contrast seems to be due to the different industrial sectors focused upon in each study. Regarding which, in our study we selected immigration status as a variable and used the ISIC category to process SSWs' data, whereas Lightman (2018) conducted her analysis based on the variable of immigration status taken from the International Standard Classification of Occupations (ISCO-08), including education in health and social work. As mentioned earlier, Lightman's (2018) study includes high-status care workers, such as doctors, nurses, and (secondary) teachers. However, our research includes low-status care workers who are likely to be employed mostly as immigrant workers. The variable of immigration, therefore, turns out as being less influential here as it focuses on those immigrant low-status care workers.

Discussion and conclusion

In this article, we have asked what leads to SSWs being lowly paid and investigated how those factors are intertwined in exacerbating a lower wage among SSWs at a cross-country level. Despite the shortcomings of data, this cross-country comparative study has benefitted from using the LIS data, in terms of being able to analyse SSWs' working conditions at the micro level. That means the data was able to illuminate individual SSWs' specific working conditions, such as wage, age, gender, marital status, level of education, employment arrangement, employment sector, number of employment contracts, and immigrant status.

Table 4. Wage factor differences among the countries

Variables	Australia	Austria	China	Denmark	Finland	France	Germany	Greece	Iceland	Ireland	South Korea	Luxembourg	Netherlands	Switzerland	Spain	Taiwan	UK
Age	0.0716***	0.0772**	0.0492	0.0821***	0.018	0.0182	0.0929***	0.0308	0.0329	0.1126***	0.1108***	0.0231	0.0668	0.1074***	0.0587**	0.019	0.0674***
Age*	-0.0007***	-0.007*	-0.0005	-0.0009***	-0.0001	-0.0001	-0.0010***	-0.0002	-0.0002	-0.0012***	0.0011***	-0.0001	-0.0006***	-0.0010***	-0.0005*	-0.0001	-0.0007***
Gender	-0.1093***	-0.0909	-0.1752*	0.0321*	-0.1338**	-0.4773***	-0.2130***	-0.0422	-0.1957*	-0.1524	-0.5057***	-0.0388	-0.2035***	-0.2706***	-0.2613***	-0.2201***	-0.1545***
Single	-0.0927**	0.0026	-0.1296	-0.0448**	-0.1016*	0.1205	0.1475**	-0.1332	-0.049	-0.138	0.1554	-0.1011	0.0934	0.1154	-0.0886	-0.0936*	-0.0553
Divorced or Separated	-	-0.0442	-0.6118*	0.0346	-0.0185	0.3385*	0.0417	-0.174	0.2279*	-0.2729*	-0.2388*	-0.0134	0.0385	0.1476	-0.0214	0.0621	-0.0478
Middle school	0.1681***	0.3428**	0.5535	0.3161***	0.3295***	0.2831*	0.2912***	0.2123	-	-0.0868	-	-	0.4076***		0.2378**	0.2535***	0.0944
High school	0.3008***	0.5919**	0.7302***	0.4120***	0.4268***	0.8621***	0.4397***	0.3310**	0.0942	0.1652	0.1204	0.4020***	0.7252***	0.5441***	0.4274***	0.5167***	0.4201***
Beyond university	0.6586***	0.6418***	0.9486***	0.4991***	0.8015***	1.1591***	0.7161***	0.6398***	0.5758***	0.3740***	0.4479***	0.7571***	0.7351***	0.8882***	0.8427***	0.7315***	0.5831***
Part-time	-0.7074***	-0.8766***	-0.5215***	-0.8657***	-0.7675***	-0.5596***	-0.7863***	-0.8680***	-0.5041***	-0.8600***	-1.0866***	-0.6488***	-0.5845***	-0.5126***	-0.9124***	-0.5837***	-0.7042***
Public	-	0.1392	0.0983	-	0.3610***	0.5740**	0.2433***	-0.0155		0.3617***	0.0091	0.0509	-			0.5080***	0.3048**
Second job	0.0238	0.1207	-1.5757*	-	-0.001	-	0.0897	-0.3595**	0.1593	-	-	-0.1178	-0.1066	-0.4077***	-0.0555	-	0.1482**
Immigration status	-0.0173	-0.1898*	-	0.0052	-	0.0705	0.0099	-0.1582	-0.1134	-0.1432*	-	-0.1756**	0.0248	0.0796	-0.1797*	-	-
Cons	8.7506***	8.2711***	7.3631***	8.4002***	9.3460***	8.9965***	7.9824***	8.7374***	9.1597***	8.0439***	7.5195***	9.7458***	8.6061***	7.6150***	8.3310***	9.4110***	8.3673***
R squared	0.4427	0.3637	0.3513	0.3858	0.3558	0.3706	0.3781	0.4555	0.3956	0.5704	0.4466	0.3827	0.2973	0.3147	0.4726	0.3967	0.4506
Sample	2055	558	404	16101	1816	404	2093	318	398	377	422	500	1120	927	851	691	2596

*p<0.01.

**p<0.05.

***p<0.001.

With the benefit of the availability of the LIS, we firstly, were able to compare the trends and common patterns appearing among SSWs' wage penalties across eighteen different countries. We then analysed the main factors to determine the wage penalty across countries. With scant typical patterns and/or trends emerging amongst countries, we turned to what brings about these substantial differences across the countries. This empirical analysis confirms three significant conclusions, as follows.

First, several common features of SSWs' wages across the selected countries have been revealed, including the predominance of female workers in the social service sector, who are mostly paid less than male workers and likely to be employed part-time. This gendered wage gap appears universally, yet, it is still noticeable that the gender wage gap appears more visible in the East Asian (China, South Korea, and Taiwan) and Southern European countries (Greece and Spain) compared to Nordic and Western European ones, such as Denmark, Finland, the Netherlands, Austria, France, and Germany. In terms of fulltime and part-time (or fractured) employment, the gender ratio is likely to be closer to equal in Nordic countries, such as Denmark and Finland, while the male fulltime employment rate is greater in Western European and East Asian countries. This might explain why female SSWs' wages are even lower in East Asian countries, where the private sector is more dominant.

Second, in relation to the SSWs' gendered employment and the predominance of the private sector, there is a significant wage gap found between fulltime or part-time (or fractured) employees, and the employment sector (public or private). In particular, for employees on part-time and/or fractured contracts, the wage gap was found to be more extreme. The more staff are employed in the public sector, the more likely it is that wages will be higher than those in the private sector, especially in countries such as Austria, Luxembourg, and Finland. Notably, the reverse is true in all East Asian countries, where most care workers are likely to be employed in the private sector. This could also help explain the intertwined links between the lower wages of SSWs and predominance of the private sector in many of these countries.

Third, with regard to the determinants of the wage penalty, our regression analysis confirms that a higher level of education (especially holding a university degree) is associated with higher wages among SSWs, while the variable of age appears ambiguous. In general, older age brings more experience and training (Ng & Feldman, 2008). Yet, in this study, the variable of age does not necessarily lead to higher wages and might bring wages down at a certain age point. That is, it would appear to be the case that skilled and experienced care work acquired through years of practice is little recognised in the care labour market. Furthermore, this rather ambiguous contribution of age may counteract the positive influence of education. That is, when an SSW does not hold such a higher degree, they may not necessarily have a higher wage no matter how many years they have been in the labour market. We, therefore, argue that skills and working experience need to be emphasised along with education and training.

Fourth, this counteractive influence of age and education could also explain lower wages among migrant SSWs, especially those who have no higher qualifications and yet, relatively prolonged working experience in the labour market. This quantitative data analysis may not capture the true character of migrant workers' low wages and insecure employment relations (Moss & Tilly, 1996; Bagchi-Sen, 2001; Sherman, 2007; Cangiano *et al.*, 2009; Yeates, 2009; Anderson, 2010; Williams, 2012). For instance, as discussed in Shutes' (2012) study, quantitative statistical data have limitations in revealing the restrictions on the immigrant workers' employment contract due to their visa issues and the power relationship with the employer. Yet, our regression analysis proves that immigrant wages are lower than those of non-immigrant ones in most countries, with this being less so in Nordic countries.

Drawing upon these findings, we raise two policy concerns for discussion. First, the lower wage may neither be situated in specific types of countries nor welfare state typologies. Notably, Esping-Andersen's (1990), (1999) welfare regime theory is based on social insurance systems, and social services do not fit well into his regime theory. However, we argue that the wage gap could be

minimised by institutional regulation, especially where the wage gap is gendered and a decent wage is not guaranteed among care workers who provide hyperflexible labour, working under many types of arrangements (England *et al.*, 2002; Dwyer, 2013; Pietrykowski, 2017a, 2017b; Weeden, 2002; Shan, 2013).

Given that SSWs employed part-time in the private sector tend to get paid less, it might be necessary to tackle institutional constraints via more secure and stable employment, better working conditions and an ensured living wage (Rubery & Urwin, 2010). To date, the marketisation of social services has been increasingly adopted in many countries and promoting efficiency with a low-wage labour force is becoming a major policy discourse (Gilbert, 2002; Eborall *et al.*, 2010; Williams, 2010, 2011; Brennan *et al.*, 2012). This policy trend is not only problematic for low-income service users, but also, for low-paid SSWs with few skills and limited resources in the labour market. In the relation to this, our empirical analysis of the determining factors on SSWs' lower wages supports the notion that their education matters significantly in terms of their wages. That is, enhancing professionalism may increase the income of SSWs (Mahon, 2002; Cleveland *et al.*, 2003; Yamane, 2021). This finding is in line with theoretical insights suggesting that strengthening the professionalism of social service workers may improve the wage gap (Mahon, 2002; Cleveland *et al.*, 2003). We, therefore, argue that such regulations and institutional monitoring of securing SSWs' employment arrangements as well as strengthening qualifications should be considered policy priorities, especially when the social services are being globally challenged to increase service productivity with appropriate service delivery.

For future follow up, research could be continued in the following three main areas: first, as mentioned above, the determinants of wages among immigrants should be explored through qualitative data. Second, how social service occupations differ from country to country could be clarified through identifying a causal mechanism. Third, more detailed understanding of the level of social service skills and the wages gap compared to non-care work occupations should be explored.

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