Beyond the Apprenticeship: Early Career Outcomes of Degree Apprentices

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Abstract

Purpose

The purpose of this study was to explore how degree apprentices' career outcomes vary across their apprenticeship and beyond their degree award, both in economic terms and with respect to job satisfaction, looking specifically at outcomes based on gender and socio-economic status.

Design/methodology/approach

We surveyed former, now graduated, apprentices across engineering and computing in seven universities in Scotland (n=113). Survey questions were designed to ascertain career success across demographic groups and included wage uplift during and after their apprenticeship, and job satisfaction.

Findings

We found the majority of apprentices had moved into post-apprenticeship graduate-level roles with their apprenticeship employer, had enjoyed a considerable uplift in pay and reported high levels of job satisfaction. However, a concerning gender pay gap was found for women starting their new graduate careers. We also found significant pay differences based on socio-economic status (SES) with those with higher SES starting their apprenticeship on lower apprenticeship wages but then accelerating through pay scales more quickly after graduating.

Originality

This study provides a first exploration of career trajectories of those graduating from computing, engineering and built environment programmes looking at job mobility, pay and job satisfaction with a particular focus on gender and socio-economic status.
This study fills an important gap in our understanding of the value of the degree apprenticeship in terms of career outcomes including salary uplift and job satisfaction.

Keywords
Degree apprenticeship; career outcomes; salaries; job satisfaction; gender; socio-economic status

Introduction

Degree apprenticeships are a relatively recent innovation in the UK, with cohorts graduating since 2021 in Scotland (the location for this study). The implementation in the UK draws on earlier apprenticeship models in Germany, Switzerland, Netherlands and elsewhere. Apprentices 'earn while they learn' and are primarily employees while studying towards a degree. It is implemented differently across the four nations of the UK (England, Scotland, Wales and Northern Ireland), however shared features include: funding for tuition fees, employer support including about 20% of paid work time set-aside for study, academic credit for work-based learning, and agreed frameworks/ curricula that reflect skills needs. In Scotland, the first full cohorts of degree apprentices (termed *graduate apprentices*) started in 2017 (SDS, 2025). Scotland-wide degree apprenticeship frameworks were published in areas where employers reported unfilled roles, including across IT and engineering sectors. This study is based on undergraduate IT (including software development, cyber security and data science), engineering and built environment frameworks which were the first to be introduced. To meet demand for employees, degree apprenticeships were available for both school leavers (and re-skillers of any age) recruited to do the apprenticeship and existing employees (upskillers) with varying prior experience and/or qualifications. The framework model in Scotland allows for apprentices to move to new employers during their apprenticeship.
Early concerns included suggestions that this type of degree would be viewed as 'lesser' by peers, parents and graduate employers when compared to a more traditional undergraduate degree (Ryan and Lőrinc, 2018); there is little evidence to verify this claim within the

Scottish context. It should also be noted that one of the stated aims of apprenticeships was to improve social mobility (Smith et al., 2021), however although there are recommendations for measuring social mobility (Anderson & Crawford-Lee, 2020), data relating to socio-economic status on entry (Lillis & Bravenboer, 2022) and single case reporting (McKnight et al. 2019), we could not find evidence examining post-apprenticeship career trajectories in the UK in relation to prior socio-economic status. This study was designed to understand career outcomes, including which apprentice groups are benefitting most (and least) as they complete their degrees and transition to post-apprenticeship careers.

Literature Review

How are we to understand the worth of a degree apprenticeship? Demand by individuals for apprenticeships is high and growing, resulting in an increasingly competitive selection process. Indeed, the University and Colleges Admissions Service in the UK (UCAS) report that 35% students who had been interested in studying an apprenticeship applied for a traditional degree instead, citing a lack of advertised roles (UCAS 2023). Previously, motivation to study towards a degree award has primarily been linked to expected wage returns (commencing with Becker, 1975) and this is also the case for degree apprentices (Leonard et al., 2018; Smith et al., 2023). The human capital model linking education to future wages lacks explanatory power when applied to degree apprenticeships which are taken up by both experienced employees seeking an upskilling opportunity and school leavers starting their careers on an apprentice wage. Human capital incorporates symbolic dominance (for example, attendance at 'elite' schools, qualification types) that confers 'worth' and differentiates the value placed on credentials and skills (Tholen, 2017). There is little evidence to date of the symbolic strength of a degree apprenticeship in comparison with a traditional undergraduate degree (Mulkeen et al., 2019). Previously, vocational qualifications have been hypothesised to signal *less* value to potential employers, based on a notion of being 'less demanding and selective' (Cedefop, 2018, p. 13), however this is not based on credential-equivalent apprenticeship degrees where competition for apprenticeships is high and little is, as yet, known of the comparative value. Further context is provided by the unique nature of the employer-led apprenticeships which are designed to reduce skills gaps identified by industry: i.e. apprenticeship degrees should be closely aligned to hard-to-fill job vacancies, rather than based on vacancies enjoying a large pool of differently-qualified graduates.

Recent studies have revealed wage uplift for sub-degree apprentices. In comparison with starting the apprenticeship, McIntosh & Morris (2018) found apprentices enjoyed a 'significant increase in earnings' (p20) on completion of their apprenticeship. This is unsurprising as apprenticeship wages can be paid at the minimum wage (less than the living wage). While percentage increases varied by level of apprenticeship, age and gender, all enjoyed an uplift of over 17% between commencing and completing. In England, a recent report at a single institution found a median salary increase of 44% between commencing and completing the degree apprenticeship (Force for Impact, 2024). As an illustration of the 'worth' of degree apprenticeships, a brief comparison of graduate earnings shows median salaries on completion of a degree apprenticeship to be almost identical to a first graduate salary (approx. £32,500) (IDR, 2021). By the age of 25, Dickerson et al. (2023) found former apprentices enjoying higher wage outcomes in comparison with graduates from traditional degrees. The UK government reports a median salary figure of £34,620 for degree apprentices one year after graduation (GOV.UK, 2024), compared with Higher Education graduate outcome data for 2021/2022 (reported in 2024) showing the highest proportion of UK graduates earning between £27,000-£29,999 (17%), while 16% of graduates earned between £24,000-£26,000) (HESA, 2024).) In Scotland, Longitudinal Educational Outcomes (SLEO, 2025) data reports median earnings of graduates from traditional degrees in subjects typical of degree apprenticeship programmes (including engineering, computing, built environment) ranging from £34,300 to £39,400 five years after graduating (based on data from the 22/23 tax year). These snapshot figures do not show debt accumulated by students on traditional degrees, nor the wages of each while studying. The dual degree in Germany has been around for longer. In a study comparing German dual degree and traditional degree outcomes, those completing the dual degree initially earned more than those with a traditional undergraduate degree (Ordemann, 2023). Ordermann argued that this was subject-related as a higher proportion of dual-degree graduates had studied subjects that commanded higher salaries.

While earnings are one aspect of career success, an increased wage is not the only motivation for undertaking an apprenticeship and an appraisal of the worth of apprenticeship degrees should extend beyond improved wages to other aspects of career success. Additional motivations include the status and future potential of a degree certificate (Leonard et al., 2018), improved professional status and increased job satisfaction (Smith et al., 2023). There is evidence that increasingly employees are looking for work that they find interesting, that

holds value for them, that provides a supportive work environment, and reasonable working hours and conditions (Waworuntu et al., 2022). As such, career success is generally measured both objectively through salary levels/ promotions/ hierarchy and subjectively through perceived job satisfaction (Cocchiara et al., 2010; Ng et al., 2005).

Looking beyond wages, job satisfaction has generally been described as a positive emotional state that follows an appraisal of one's work experiences (Locke, 1969). In simple terms, it is the extent to which a person feels satisfied by their job, and factors include wages, relationships at work and personal fulfilment (García-Bernal et al., 2005). In a systematic review of career success (which they defined as objective and subjective measures of career outcomes), Ng et al. (2005) found pay rises and promotions did not necessarily influence subjective career success. Remaining with an employer can be one indication of job satisfaction, although it can also be due to a lack of mobility such as wanting to stay in a particular region for access to affordable housing or family support for childcare. Factors increasing intentions to remain with the employer organisation after an apprenticeship include 'post apprenticeship pay, career progression and challenging and interesting work' (Smyth and Zimba 2019, p. 89).

Under-represented groups based on ethnicity, age and gender can face discrimination in accessing apprenticeships (Battiston, 2020). If an apprenticeship *is* secured, very little is known yet about how post-apprenticeship career paths might vary. In a review of general career success studies, Ng et al. (2005) found career success varying significantly depending on gender, ethnicity, age and marital status.

How gender and socio-economic status affect career outcomes

A gender earnings gap persists in most industrialised countries (World Bank, 2024), obstructing women's ability to advance in their careers (Reshi and Sudha, 2023). Among sub-degree apprentices, Alexander (2024) found a gender gap in earnings of 3% within the first five years of entering the labour market. For apprentices in the US, a gender pay gap of 35.7% was found, largely (but not entirely) attributable to occupational segregation whereby different occupations offer different wages, with men dominating better paid apprenticeships (Hegewisch, 2024). For UK graduates, women's median earnings outstrip non-graduate earnings (a rise of £5K between the ages of 30 and 40, compared with no growth for non-graduate women), more modest than for men who enjoy a £15K premium (Britton et al., 2020).

In terms of subjective career success, women report higher levels of job satisfaction than men, despite lower pay (Nappo, 2025). Perugini and Vladisavljević (2019) suggest that this 'gender-gap paradox' may be explained by women's lower expectations for work, driven by exposure to gender inequality from an early age. Ng et al. (2005) found that level of education had a stronger influence on career satisfaction for women than for men, arguing that this might be due to women's lower career expectations, thus women might derive more satisfaction from investing in the skills towards improving their careers. More recently, Brooks et al. (2024) observed that despite high educational attainment, women often enter the labour market with significantly lower career expectations than their male peers, arguing that this 'expectations gap' leads women to derive greater satisfaction from career outcomes that might otherwise seem inequitable.

In terms of access to education (including apprenticeships), socio-economic status (SES) reflects the social and economic circumstances of an individual's family (or carers) growing up. SES impacts on individuals' chances of securing an apprenticeship. Studies have found individuals with low SES were under-represented at all levels of apprenticeship, increasingly so at higher levels (Cavaglia et al., 2017, Alexander, 2024). Andreson and Stapf's (2023) systematic review of career success studies found that almost all papers they reviewed demonstrated that individuals with higher SES 'derive substantially greater financial benefits' over their careers (p. 1060). Alexander (2024) found an earnings gap of 11% related to lower SES, positing that 'even at the start of working lives socioeconomic position may have an association with earnings that could entrench existing inequalities' (p. 107).

In terms of job satisfaction, although there is some limited evidence from South Africa that graduates from more disadvantaged backgrounds report lower levels of job satisfaction (Mfeketho, 2021), Andreson and Strapf's (2023) review found conflicting studies relating to SES and job satisfaction, with most recent studies failing to find 'noteworthy direct origin effects' on job satisfaction (p.1061); they concluded that the relationship between social origin and subjective measures of career satisfaction has not been researched consistently and no clear findings have been uncovered.

Age, ethnicity and disability status are also factors affecting career outcomes (Ng et al. 2005). In 2022/23 12.8% of DA entrants in Scotland self-declared a disability, 5.9% self-identified

as minority ethnic (SFC, 2025). These characteristics of apprentices are beyond the scope of the current study as the sample size precludes meaningful analysis.
Furthermore, age is complicated by participants' prior life/ work/ lack of work/ study experiences so we instead focused on apprenticeship and post-apprenticeship contexts. This study was designed to address the gap in our understanding of both post-apprenticeship wages and job satisfaction, in particular for women and those with low SES.

Methodology

Participants and procedure

To understand career trajectories of apprentices and how these trajectories vary with gender and SES, an online survey was distributed to graduates of degree apprenticeship programmes through alumni offices and direct contacts at seven Scottish Universities. The participating universities collaborate on pedagogy and represent 78% of Scottish universities running degree apprenticeships in IT and engineering. The study completed the ethical process approval at the host university (Education Research Integrity Committee reference 3707935). The data was collected between November 2024 and January 2025. The participants were incentivised by a prize draw of vouchers. A total of 113 valid responses were collected from participants who completed their degree apprenticeship between 2021 and 2024, representing a participation rate of approximately 11.6%[1]. Three universities directly emailed the survey link using alumni contacts, while four posted the link on external platforms. The open access combined with the offer of a free prize draw led to a relatively high level of invalid responses of 35% following careful screening (Curran, 2016). Participant demographics are shown in Table 1, together with their associated framework and their employment status at the start of the apprenticeship. Over half of the graduate sample for this survey (58.4%, n=66) were recruited into the degree apprenticeship as existing employees already working with their apprenticeship employers before they started the degree apprenticeship programme and are referred to as *upskillers*. A smaller proportion started as degree apprentices (41.6%, n=47), termed *new-starts*.

Table 1. Participant demographics

[1] Total population approximated from SFC (2025)

Variable	Group	Engineering (n=59)	IT (n=54)	Up-skiller (n=66)	New Start (n=47)	Male (n=79)	Female (n=30)	Low SES (SIMD) n=30	High SES (SIMD) n=63
Gender	Female	25.4%	27.8%	22.7%	31.9%	-	-	83.3%	71.4%
	Male	74.6%	64.8%	72.7%	66.0%	-	-	13.3%	25.4%
	Missing	0.0%	7.4%	4.5%	2.1%		-	3.3%	3.2%
Age	Under 25	28.8%	25.9%	7.6%	55.3%	25.3%	36.7%	20.0%	31.7%
	25-34	59.3%	37.0%	54.5%	40.4%	46.8%	53.3%	50.0%	44.4%
	35-44	6.8%	27.8%	25.8%	4.3%	19.0%	6.7%	23.3%	15.9%
	45-54	5.1%	9.3%	12.1%	0.0%	8.9%	3.3%	6.7%	7.9%
SIMD Quintile*	1	15.3%	13.0%	19.7%	6.4%	15.2%	10.0%	53.3%	-
	2	15.3%	9.3%	10.6%	14.9%	16.5%	3.3%	46.7%	-
	3	18.6%	11.1%	13.6%	17.0%	15.2%	16.7%	-	27.0%
	4	18.6%	18.5%	18.2%	19.1%	20.3%	13.3%	-	33.3%
	5	20.3%	24.1%	22.7%	21.3%	21.5%	23.3%	-	39.7%
	Missing	11.9%	24.1%	15.2%	21.3%	11.4%	33.3%	-	-
Ethnicity	White	94.9%	87.0%	89.4%	93.6%	92.4%	93.3%	90%	95.2%
	Minority Ethnic	5.1%	11.1%	10.6%	4.3%	7.6%	6.7%	10%	3.2%
	Missing	0.0%	1.9%	0.0%	2.1%	-	-	0	1.6%
Dis-ability	No	96.6%	83.3%	89.4%	91.5%	92.4%	90.0%	86.7%	92.1%
	Yes	3.4%	13.0%	9.1%	6.4%	6.3%	6.7%	13.3%	6.3%
	Prefer not to say	0.0%	3.7%	1.5%	2.1%	1.3%	3.3%	-	1.6%
Pro-motion during apprentic eship	No	44.1%	44.4%	43.9%	44.7%	43.0%	40.0%	43.3%	49.2%
	Yes	55.9%	55.6%	56.1%	55.3%	57.0%	60.0%	56.7%	50.8%

* Scottish Index of Multiple Deprivation (SIMD) in quintiles (Quintile 1 SIMD20 is most deprived 20% to Quintile 5 SIMD80 least deprived 80% https://www.gov.scot/collections/scottish-index-of-multiple-deprivation-2020/)

Instrument

Alongside participant demographic questions, new questions were developed in collaboration with all universities participating in the study, based largely on previous studies (Table 2). To limit the time taken to complete the survey we requested salary data based on salary bands. Job satisfaction was measured using the conceptualisation in Baruch et al. (2005) and Cocchiara et al.'s (2009) with the items *I am satisfied with my job, I enjoy my work, I am generally satisfied with the kind of work I do in my job*. We also added the item *I intend to remain in this job for the foreseeable future*, as this item relates to job satisfaction (Table 2). These items were measured on a five-point Likert scale ranging from strongly disagree to strongly agree. The Cronbach alpha for the satisfaction scale is .890 which indicates a good reliability. The satisfaction score is derived by getting the mean of the four items.

Moving job roles may be based on some level of dissatisfaction (for example with pay, prospects or job satisfaction), so participants were also asked about their career trajectories in terms of moving to new roles. To understand whether salary gains and reported levels of job satisfaction were due to their apprenticeship, we also asked the graduates about their aims in doing the apprenticeship and to rate the extent to which their aims have been met with the options being not at all, a few aims met, most aims met and aims fully met.

Table 2. Survey questions and source

Question/ statement	**Source**
Did you receive a promotion during your apprenticeship?	Ng et al. 2005
Did you move to a new employer while you were an apprentice?	Ng et al. 2005
If so, did you move for better pay/ to move to a new location/ better prospects/ promotion/ lack of support/ made redundant/ was offered a permanent role/ other	Ng et al. 2005
Are you currently in employment? If not, please select a reason: Looking for a new role/ taking a career break/ studying/ health reasons/ personal reasons/ retired	Ng et al. 2005
How long have you been working with your current/ most recent employer	N/A Introduced to understand job mobility

If you have moved please select reasons: for better pay/ to move to a new location/ better prospects/ promotion/ made redundant/ apprenticeship contract ended/ other	N/A Introduced to better understand motivations for apprentices
What is your current job title? And grade? How many grades are there in your organisation?	Cocchiara et al. 2009
What is your salary band?	Cocchiara et al. 2009
I am generally satisfied with the kind of work I do in my job	Cocchiara et al. 2009
I enjoy my work	Cocchiara et al. 2009
I am satisfied with my job	Cocchiara et al. 2009
I intend to remain in this job for the foreseeable future	N/A Introduced as a measure of current job satisfaction and mobility intention
What were your main aims in completing the apprenticeship?	Smith et al. 2023
To what extent do you believe you achieved your aims?	Locke 1970

The survey ended on three open text questions, where participants were asked about 1) advantages, 2) barriers and 3) an optional text field for any additional comments. The findings are presented below grouped by career trajectories, salary outcomes and job satisfaction. Illustrative quotes from the open text responses are included.

Findings

Table 3 shows the apprenticeship and current employment profile of the graduate sample in this survey by framework category. Over half (55.8%) of the sample received a promotion during the period of their apprenticeship. Most of the graduates at the time of survey completion were in employment (97.3%), working in the private sector (70.7%) in large scale enterprises (71.7%). The median salary for both Engineering and IT framework graduates was reported to be £40,000-£49,999.

Table 3. Apprenticeship and employment related information by framework category

Variable	Group	Engineering (n = 59)	IT (n = 54)
Pathway	Started as a degree apprentice	35.6%	48.1%
	Existing employee	64.4%	51.9%
Apprenticeship Employer Type	Private	74.6%	55.6%
	Public or third	25.4%	44.4%
Apprenticeship Employer Size	Small or micro	10.2%	11.1%
	Medium	20.3%	20.4%
	Large	69.5%	68.5%
Apprenticeship Salary	Under £16,000	16.9%	11.1%

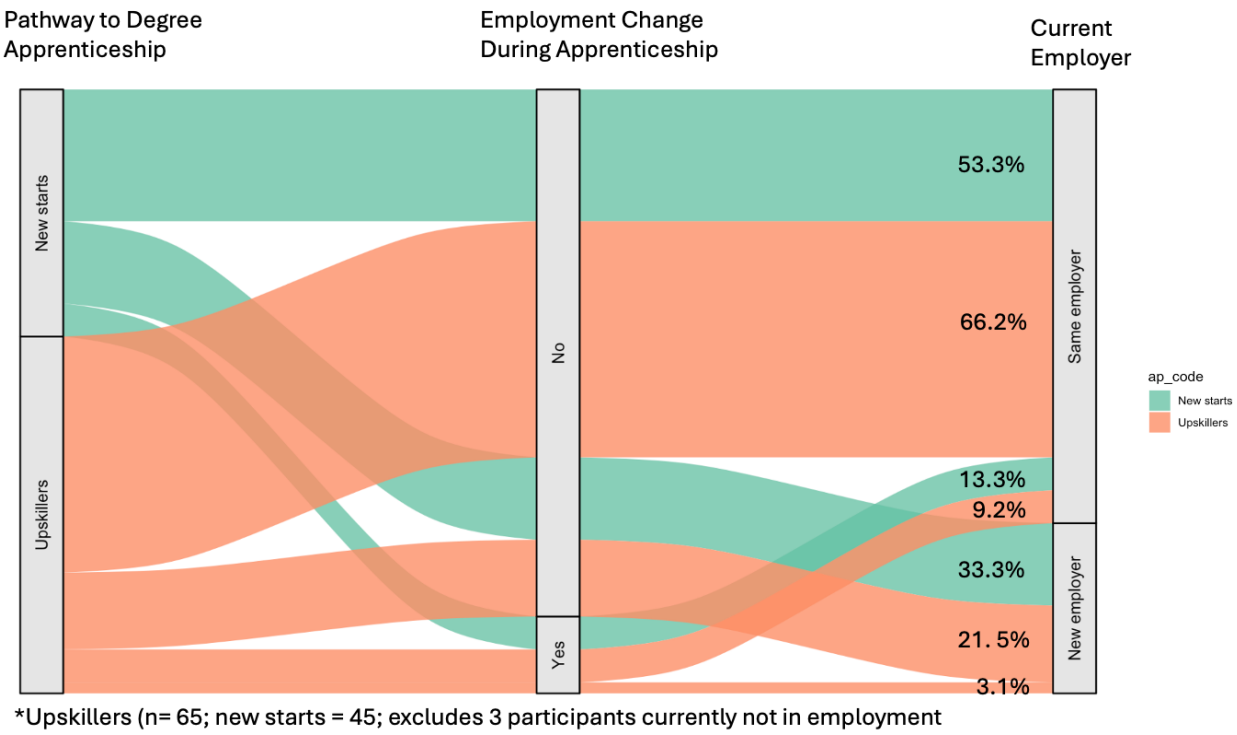
	£16,000 - £17,999	18.6%	16.7%
	£18,000 - £19,999	22.0%	25.9%
	£20,000 - £21,999	8.5%	7.4%
	£22,000 - £23,999	1.7%	5.6%
	£24,000- £29,999	3.4%	9.3%
	£30,000 - £39,999	22.0%	13.0%
	Over £40,000	6.8%	9.3%
	Prefer not to say	0.0%	1.9%
Promotion during apprenticeship	No	44.1%	44.4%
	Yes	55.9%	55.6%
Current Employer Type	Private	78.0%	63.0%
	Public or third sector	20.3%	33.3%
	Unemployed	1.7%	3.7%
Current Employer Size	Small or micro (<50 employees)	8.5%	9.3%
	Medium (50-250 employees)	13.6%	16.7%
	Large (>250 employees)	74.6%	68.5%
	Unemployed	1.7%	3.7%
	Missing	1.7%	1.9%
Current Salary	Under £20,000	5.1%	5.6%
	£20,000 - £23,999	1.7%	1.9%
	£24,000- £29,999	3.4%	9.3%
	£30,000 - £39,999	27.1%	22.2%
	£40,000-£49,999	40.7%	33.3%
	£50,000 -£59,999	10.2%	7.4%
	£60,000 - £69,999	6.8%	13.0%
	£70,000 or over	1.7%	1.9%
	Prefer not to say	1.7%	1.9%
	Unemployed	1.7%	3.7%
Time with current employer	Less than 12 months	16.9%	16.7%
	12 months – 24 months	13.6%	14.8%
	2-5 years	25.4%	22.2%
	5-10 years	25.4%	25.9%
	10-20 years	16.9%	11.1%
	Over 20 years	-	5.6%

Career trajectories to current positions

To gain an understanding of career trajectories through the apprenticeship and post-graduation, Figure 1 illustrates the graduate employment pathways. On the left-hand side the cohort is split according to whether they were an upskiller (i.e. an existing employee) or were

a new start. The central yes/no column relates to whether they moved during their apprenticeship. The right-hand side (new/ same employer) shows whether they stayed with their employer after they completed the apprenticeship. Note the percentage shown on the right-hand side of the figure refers to the percentage of the newstart or upskiller sample.

Figure 1: Movement of apprentices based on upskiller (existing employee) or new start (new employee)



*Upskillers (n= 65; new starts = 45; excludes 3 participants currently not in employment

Figure 1 shows that the majority of graduated apprentices, regardless of their apprenticeship pathway, stayed with their apprenticeship employers after completing their degree. The proportion is higher for those who started their apprenticeships as existing employees (66.2%), in comparison to those who started their employment as apprentices (53.3%). While very few apprentices (13.2%) changed their apprenticeship employer during the apprenticeship, about 28% moved after the apprenticeship (68% of those moving within 6 months of completing the apprenticeship). For those who moved *during* the apprenticeship, the reasons indicated for moving were mostly for better pay (80%) or better prospects

(66.7%). Similar reasons were reported for moving *after* the apprenticeship was completed, with 90.3% of those that moved after the apprenticeship citing better prospects, 77.4% citing better pay. Some indicated they moved because their apprenticeship contract ended (12.9%) while others moved because of location (25.8%). A Chi-square test of independence was conducted to identify if job pathways were associated with SES and gender: job pathways were not associated with gender (p=.905) or SES (p=.146).

In the open text questions on the survey, improved career prospects were reported, for example, one respondent said:

"I would not be in my current job without the [degree] apprenticeship. It gives such a boost to your career prospects. Having experience of working for a number of years and still having the qualification makes you stand out and able to climb higher in organisations much more quickly than starting professional work only after completing a degree".

An existing employee with a family mentioned the benefits of continuing to earn (although initially on a lower salary as an apprentice), reporting that *"My career has changed exponentially in that I have managed to successfully complete a career change".*
Another had felt their employer did not recognise their contribution fully and had moved role: *"In the organisation I started with, I was still classed as an apprentice due to being enrolled in the GA programme, despite the work I was doing being above an apprentice's remit and was reflected in my salary not progressing. In my next role this wasn't a barrier."*

Finally, one participant observed: *"The course is seen as a degree qualification, which is great, but there is an uphill battle to show employers that while it is a degree, there is 4 years of actual employment sitting alongside the degree and not just the standard 'Work experience' traditional student's experience."*

Salary outcomes

Originally, the planned data analysis was to stratify the salary outcomes by year of graduation but due to the small sample sizes in the sub-group of interest (for example, gender) the original salary bandings provided in Table 3 are mapped to bigger salary bandings to adjust for the yearly increments in salaries. For gains in salary band, band changes were computed by subtracting the current salary band with the apprenticeship salary band, an approach

adopted by Cocchiara et al. (2009) to measure salary increases. A change of one band denotes an increase in salary band; for example, a graduate previously earning less than £20,000 during apprenticeship and currently reporting a salary band of £20,000 – £29,999 shows that they have moved one band up. A limitation of this approach is that it treats the band movement similarly whereas in practice, an employee moving one band up on the lower end of the scale versus moving one band up on the higher end of the scale may signal the latter moving on to a significantly different role (for example from technical to managerial). A check was conducted to see whether this affects the analysis by assigning double weight to changes in the higher banding, but this did not point to a different finding, so the unweighted band changes are reported for simplicity.

The median reported apprenticeship salary is under £20,000. The median salary for male graduated apprentices is £40,000-£49,999 and £30,000-£39,999 for females. Based on the mid-point of median bands, this approximates to a 125% increase for male apprentices, a 75% increase for females. SES was determined using postcodes of home locations before they started the degree apprenticeship which map to Scottish Index of Multiple Deprivation (SIMD) quintiles. The median salary based on SES is £40,000-£49,999 across SIMD quintiles.

Although not directly comparable (and provided solely for illustration), the current (2024) salary earnings reported by the post-apprenticeship graduates in this sample appear to be higher than graduates from similar *non-apprenticeship* degrees: the median salary band for the full cohort was £40,000-£49,000 up to three years after their apprenticeship (2021-2024), whereas the Scottish Longitudinal Educational Outcomes data shows median earnings of graduates from traditional degrees in similar subject areas ranging from £34,300 to £39,400 (five years after graduating, based on data from the 22/23 tax year) (SLEO, 2025). Adding the average annual UK pay award in 2024 (5.1%, ONS, 2024b) to this range brings it to £36,049 to £41,409: a lower range, and a longer elapsed time since graduation.

A comparison was conducted of the salary banding before and after the apprenticeship by gender and SIMD using a non-parametric Mann-Whitney U test for each variable to compare the outcomes between these groups. These tests revealed a statistically significant difference in current salary bandings for gender (noting that this difference was not significant based on their salary *during* the apprenticeship). The significant difference found for the apprenticeship salary based on SIMD (those from most-deprived areas had higher apprenticeship wages) did not hold when comparing their current post-apprenticeship salary. We also compared the before and after salaries for upskillers and new starts and found

significant difference in the apprenticeship salary for upskillers but no significant difference in the salaries post-apprenticeship. A summary of the findings is shown in Table 4.

Table 4. Salary band

Variable	Mean Ranks	Mann-Whitney U	Z value	P value	Effect Size $r = Z/\sqrt{N}$
Gender (Apprenticeship Salary)	Male: 56.38; Female: 49.60	1023.0	-1.121	0.262	.10
Gender (Current Salary)	Male: 56.18; Female: 42.98	811.5	-2.089	0.037*	.20
SIMD (Apprenticeship Salary)	Least Deprived: 43.04; Most Deprived: 53.65	715.50	-1.957	.050*	.20
SIMD (Current Salary)	Least Deprived: 46.27; Most Deprived: 43.95	853.5	-.417	0.677	.04
Apprenticeship Start (Apprenticeship Salary)	Upskiller: 65.12 New starts: 40.05	772.0	-4.508	<.001*	.43
Apprenticeship Start (Current Salary)	Upskiller: 58.47 New starts: 48.58	1147.50	-1.697	.090	.16

*significant at $p \leq .05$

For the band changes, an independent t-test was conducted to compare the gains between groups and revealed a significant difference based on SIMD with those residing in least deprived areas moving through salary bands more swiftly compared to those in more deprived areas. This was the same pattern for upskillers and new starts, with new starts moving more swiftly through salary bands than upskillers. Table 5 presents a summary of the findings with regards to band changes.

Table 5. Band changes

Variable	Mean gains (SD)	t-value	p-value	Effect size Cohen's d
Gender	Male: 2.11 (1.13) Female: 1.79 (1.35)	1.199	.233	.26

SIMD	Least Deprived: 2.30 (1.24) Most Deprived: 1.67 (.92)	2.475	.015	.55
Apprenticeship Start	Upskillers: 1.77 (1.26) New starts: 2.28 (1.08)	2.175	.032	.43

To illustrate changes in salary bands by gender, Figure 2 shows the distribution of salaries during the apprenticeship, and flows to current salaries. While these band changes are not significant as indicated in Table 5, a visual inspection of Figure 2 shows that the male group had higher proportions of salaries on the higher end of the salary scales during and after the apprenticeship.

Figure 2. Changes in salary bands by gender

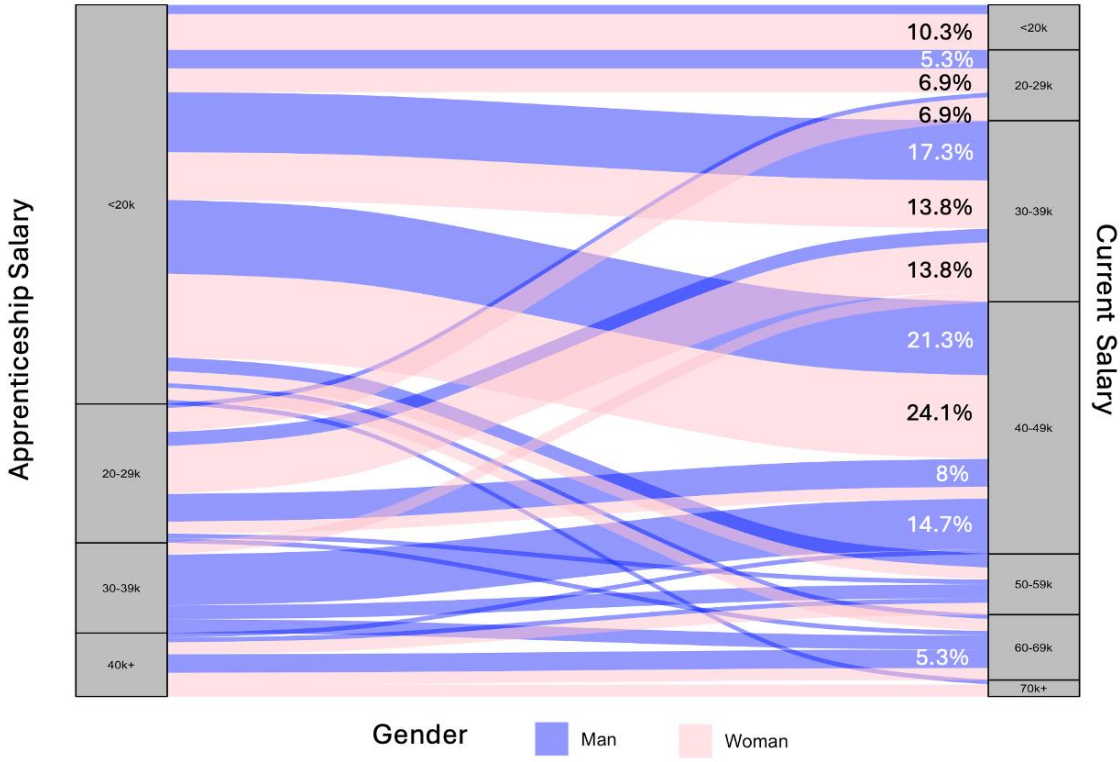
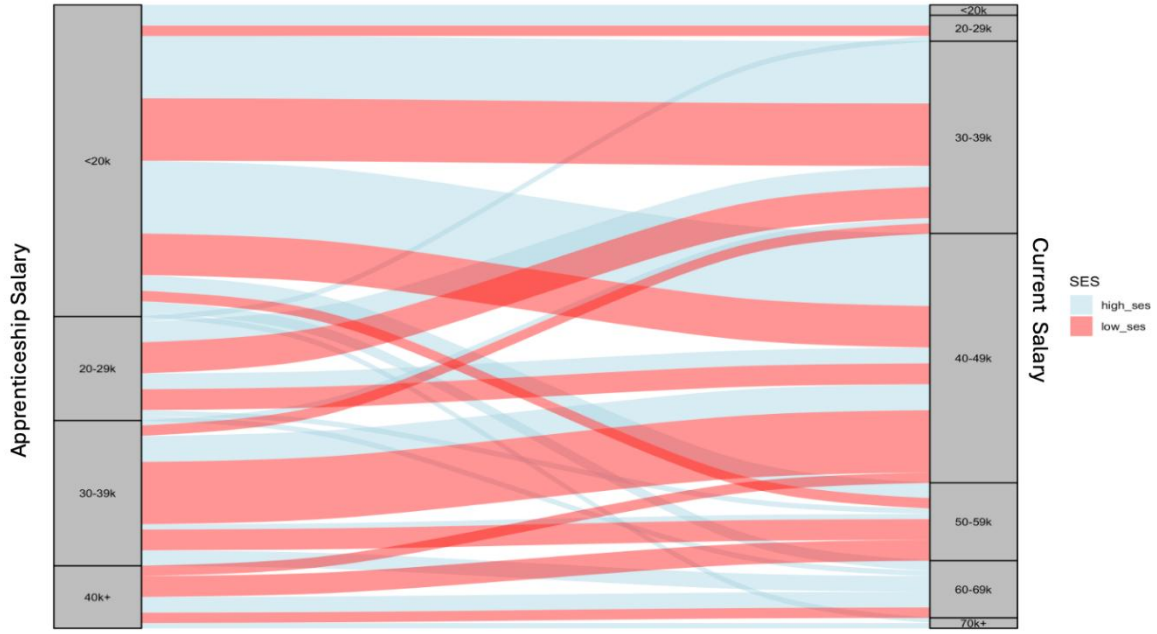


Table 4 shows the mean rank of the salaries based on SES. To consider the context for the significant finding that apprentices from more-disadvantaged areas earned more during their apprenticeship than those from least-deprived areas we looked at their route to the apprenticeship. For low deprivation areas (high SES) 43% commenced their apprenticeship as a new-start; in high deprivation areas (low SES) this figure was lower at 33%. Thus, a

higher percentage of apprentices from more disadvantaged areas were upskillers commencing the apprenticeship with an existing employer. Figure 3 shows the distribution of the salaries based on SIMD as a proxy measure for SES, showing lower SES on the higher end of the salary scale during the apprenticeship but with post-apprenticeship salaries more widely distributed across the different bands.

Figure 3. Changes in salary band by SES



In the open text, one apprentice reported that he had changed employer at the end of the apprenticeship as his role was not secure, but stated:

"I come from lower income background and I feel this apprenticeship benefitted me into getting a higher salaried job with much higher career aspirations".

Conversely, an upskiller respondent, remaining with their apprenticeship employer, was less positive about how the apprenticeship had benefited them at work:

"I get more work and am compensated exactly same as before. If anything, my job has become more complex as I am undertaking tasks that are normally the responsibility of people in higher job grades than I am. It seems my company is getting more out of me for the same compensation package".

Job satisfaction

Job satisfaction was computed as the mean of all relevant items (Table 6). Individual item scores for the graduate sample are reported in Table 6. The mid-point is 3.0, therefore scores higher than 3.0 are seen as representing medium to high levels of satisfaction. A comparison of the overall job satisfaction score by demographic factors such as gender, SES based on SIMD and apprenticeship start resulted in no significant difference between groups (Table 7).

Table 6. Job satisfaction items (mean and standard deviation)

	Mean	Std. Deviation
I am generally satisfied with the kind of work I do in my job	4.03	0.84
I enjoy my work	4.02	0.89
I am satisfied with my job	3.95	0.92
I intend to remain in this job for the foreseeable future	3.80	1.04
Overall Satisfaction Scale	**3.95**	**.80**

Table 7. Overall job satisfaction means and p-values

Variable	**Category**	**N**	**Mean**	**Std. Deviation**	**p-value**	**ES**
Gender	Male	77	3.92	0.77	.654	0.10
	Female	29	4.00	0.86		
SES (SIMD)	Least deprived	61	4.03	0.83	.233	0.27
	Most deprived	30	3.81	0.86		
Apprenticeship Start	Upskiller	65	3.84	0.89	.078	0.35
	New start	45	4.11	0.61		

Did the apprenticeship meet the aims of apprentices?

The aims of individuals in undertaking an apprenticeship vary. In this study we did not want to assume that the main goal of apprentices was to achieve the typical measures of career success such as increased salary, promotion or job satisfaction as previous studies had shown a wide range of motivations to do the apprenticeship (e.g. Smith et al., 2023). As an indication of whether their careers had developed in the way they hoped for, we asked about the extent to which their aims in undertaking the apprenticeship had been fulfilled, for example, to gain a degree qualification or improve career options (see Table 8 for a complete

list). Most graduates self-reported that these aims have been fully met (53.1%) and a further 35.4% indicated that most of these aims have been met, with the rest (11.5%) of the respondents indicating to some extent.

Table 8. Aims of doing a degree apprenticeship

Aims of doing a degree apprenticeship	**Count**	**N %**
to gain a degree qualification	98	86.70%
to improve career options and or achieve career goals	89	78.80%
to gain knowledge and skill	83	73.50%
for professional and or personal growth	78	69.00%
to gain experience while learning	68	60.20%
to earn while learning	65	57.50%
to benefit my employer organisation	25	22.10%

For some, their aims were fully met:

"Now that I am graduating, I have an Honours Degree and a full-time job. I couldn't have asked for a better outcome".

For some, the aim of good career prospects was met:

"Allowed me to implement my learning from university into my day job, and vice-versa. Made me focus and study more than I typically would have, because my career depended on it….Gave me a huge head-start on others who completed a full time degree".

Although there were many similar responses, this positive career trajectory was not the case for every respondent, one commented:

"My workplace treats apprentices a lot differently than graduates in terms of speed of progression when rolling off either scheme - grads tend to find promotion quicker".

Accelerated membership of professional bodies was mentioned:

"In engineering/ built environment, since graduating I feel like I am soon to be ready to complete my [chartered status] quicker than someone fresh out the full-time course as I have been gaining all my experience while learning and gaining my degree".

One respondent summed up their experience of the apprenticeship:

"Excellent opportunity for people who did not attend university straight from school and people from disadvantaged backgrounds, the programme has made a huge difference to my life and I can't thank those who introduced it and continue to work on it enough, thank you."

Discussion

This study represents an early exploration of the impact of the degree apprenticeship in terms of future career outcomes. In general terms, a transition to better-paid and satisfying careers followed the degree apprenticeship. For the majority, the 'earn while you learn' mantra fulfilled its promise: indeed, the earning aspect provided valuable work experience which benefitted graduated apprentices' salaries on completion. Insofar as a comparison was possible, the salary earnings reported by post-apprenticeship graduates in this sample were higher than the earnings for graduates from traditional degrees in similar subjects. Furthermore, work experience acquired during the degree could accelerate careers through graduate roles and chartered status, an important career progression requirement in many engineering and built environment jobs.

The majority (72%) of apprentices and graduate apprentices remained with their initial employing organisation: a positive result for employers who had also invested resources in the form of apprentice wages, paid time off to study, and mentoring support. Employers therefore benefitted from a degree of loyalty (of course, some employers may have actively discouraged mobility with retention bonuses or contract clauses). Similarly, Ordemann (2023) found limited job mobility following a comparable route to degree in their study of graduates from German dual degrees. Ordemann refers to a 'sticky bottom' (p.557) effect suggesting those that use a vocational route to a degree have less desire to move job roles to advance their careers, due to family or employer ties 'anchoring them in previous career trajectories' (p.565) and resulting in a form of employment inertia or reduced mobility. Some apprentices did move roles both during and after the apprenticeship and were asked for their reasons for moving: generally better prospects and/or pay. Although some employers would prefer a more bespoke apprenticeship, whereby specific skills required by their company be covered, such specialisation could impact these relatively low rates of job mobility to the detriment of apprentices' career choices. The nature of the jobs market (in the form of plentiful vacancies) has a profound effect on such job mobility, so similar research should be conducted in the future to allow for differing job market conditions.

Almost all graduated apprentices (including the majority who did not leave their employing organisation during the apprenticeship or after graduating) reported high levels of job satisfaction. For individuals, high levels of job satisfaction combined with reported achievement of aims paint a largely positive picture: and are indicative of the worth of

apprenticeship degrees. Less positive are the findings related to reported difference in salary between women and men; and some concern regarding the longer term outcomes for those with lower SES.

The gender pay gap

A gender pay gap was found for graduated apprentices from engineering and built environment apprenticeships: women earned less than men post-apprenticeship. Such a gender pay gap is well-known and has been observed elsewhere, for example, ONS data by occupation shows gender pay gap means ranging from 9% in IT, 9.7% in construction to 11% in engineering (2024). Andrews et al. (2024) show that the gender pay gap increases over time, so finding a gender pay gap at the outset of a post-apprenticeship career is concerning. It is unlikely that the impact of part-time working for women carers (cited as one cause of the gender pay gap by Andrews et al. (2024)) is the reason women earned less when graduating since apprentices are required to work full-time during their apprenticeship. Avram et al. (2024) found more women citing 'family reasons' (flexible working, a job closer to home, family friendly policies etc) as motivations to change job, but also that job changes for these reasons were more likely to lead to lower wages. These factors may have had an effect on post-apprenticeship women in this study. There is evidence elsewhere of gendered differences in advocating for higher salaries; women are both less likely to negotiate for a pay increase and make more modest requests when they do negotiate (Dreber et al., 2022). There are potentially two opportunities to re-negotiate salaries: during the apprenticeship (55% of apprentices reported being promoted); and on completion of their apprenticeship. A greater transparency of earnings might benefit women starting out in their post-apprenticeship careers seeking a basis for negotiating a higher salary. The findings from this study could act as a catalyst for women post-apprenticeship to request equivalent pay increases, and for employers to ensure equitable remuneration. It is recommended that a future study collects qualitative data to understand gendered approaches to seeking salary increases.

Salary differentials according to socio-economic status

The findings showed that those with higher SES had lower starting salaries as apprentices, however their salaries increased more (by salary band) than other groups once they graduated. One possible reason for this is that these high SES apprentices may have been able

to take a lower paid apprenticeship if they also enjoyed financial and other support from family members. The National Minimum Wage for apprentices is significantly lower than the National Living Wage. Apprentice wages offered often recognise (by a wage suppression) the development opportunity, with 20% of apprentices' time spent 'off-the-job' in education studying towards their degree. A low apprenticeship wage might deter applications from financially disadvantaged groups, especially those paying rent: echoing concerns about unpaid internships amongst students on traditional degrees (Wright and Mulvey, 2021). There is a danger degree apprenticeships become a new mechanism for gaining advantage. There is already emerging evidence that employers recruit based on school-based exam results (Fabian et al., 2023) which are heavily skewed towards higher socio-economic groups through access to fee-paying schools, expensive tutoring, support from parents etc. The effect of such selection processes combined with a growing awareness among middle class families of the value of degree apprenticeships could squeeze those with lower SES out of new-start degree apprenticeships, a concern also raised by Cavaglia et al. (2022).

Significant salary uplift on completion of an apprenticeship has been found elsewhere (for example, Force for Impact, 2024 and McIntosh & Morris, 2018)), however this has not been previously linked to SES. The finding of slower wage uplift on graduating for those with lower SES could reflect that upskillers (already working in an organisation before starting the apprenticeship) were more likely to come from a lower SES background than new-start apprentices; and may have left school and entered lower-skilled employment directly. With a few years of work experience, it is likely that they enjoyed higher salaries when starting the apprenticeship, compared with school leavers recruited as apprentices. Our findings suggest that the salary uplift experienced following graduation was lower for this group so the longer-term benefits for this group may be less positive. We recommend that those responsible for setting degree apprenticeship policy monitor apprentice demographic data to ensure equal access to apprenticeships from across socio-economic groups; to ensure those from lower socio-economic backgrounds are not under-represented among new-starts. Following up with a longer-term study will allow for a better understanding of lifetime earnings for both groups (and a longer-term comparison with graduates), and a larger data set would hopefully allow for analysis of characteristics including disability status and ethnicity.

Conclusion

Understanding more about apprentices' career success post-graduation is important for many reasons; not least the significant investment in time and effort by apprentices, and employer investment of wages and support. This study provided an opportunity to reflect on early careers following the degree apprenticeship. A largely positive picture of how apprentices' careers progressed during and after the apprenticeship has emerged, including benefits to employers from retention beyond graduation. While our findings show a 'rising tide lifting all boats', some apprenticeship salaries lift higher and faster than others. The findings have highlighted two discrepancies: a gender pay gap that is concerning but sadly unsurprising; and a difference in earnings among different socio-economic groups which was unexpected, as those with lower SES enjoyed higher apprenticeship salaries during their apprenticeships. However, this picture changed on graduation when those with higher SES enjoyed greater increases in salary. This study provides pay gap evidence for women leaving apprenticeships and starting their post-apprenticeship graduate career, which could serve to encourage them to negotiate for equivalent salaries to men. It can also alert employers to the effects of both gender and SES on apprentices' career trajectories. We recommend monitoring and action for policy makers, those implementing apprenticeships and employers.

Two further studies are recommended: one to provide qualitative data related to both gendered and SES -based career decision-making; a second to repeat a similar study in a few years time to provide a longer-term insight into career trajectories beyond the apprenticeship; as the pool of potential participants increases and job market conditions vary. A longer-term study should allow for an understanding of career outcomes for those from minority ethnic groups and those with a disability.

Limitations of the study

One limitation is that the participants were a self-selecting sample and were self-reporting salaries and levels of satisfaction. Graduates who were not currently in employment or had had a challenging time during their apprenticeship might have been less inclined to remain in contact with their university and participate in the study. Furthermore, the analysis was based on data from those who had completed the apprenticeship, so the study lacks career trajectory insight into those who did not complete their apprenticeship.

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