



# The returns to mature-age education in Australia



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## ABSTRACT

Using 15 years of Australian panel data and fixed-effect panel regression models, we examine the prevalence of and labour market returns to different types of qualification upgrading between ages 25–63, paying attention to differences by gender, time since attainment and age at attainment. Mature-age educational upgrading is associated with increases in earnings and occupational status, with substantial heterogeneity across different types of educational transitions and only weak evidence of gender differences. In some cases, qualifications obtained at younger ages yield better pay offs, and time since qualification attainment is associated with faster wage growth.

## 1. Background

As advanced economies restructured from industrial to post-industrial, the associated contraction of the manufacturing sector, growth in the service sector and rapid technological change encouraged many adults to return to education to improve their skills and upgrade their qualifications. Additionally, socio-economic and demographic processes which have become more prevalent in recent years also served as push factors for mature-age workers to return to education, including changes in family circumstances (e.g. separation or divorce), residential relocation and retrenchment (Blanden, Buscha, Sturgis, & Urwin, 2012). As a result, in countries such as Australia education is becoming a lifelong endeavour, with a sizeable proportion of adults being enrolled in an educational course. Australian men and women return to education to upgrade their skills to change employers, strengthen their claims for a promotion within their current employer, or move from inactivity or unemployment into paid employment (Coelli, Tabasso, & Zakirova, 2012). According to the Australian Bureau of Statistics (ABS), over one million people aged 25 to 64 years were enrolled in a formal programme of study in 2016 (ABS, 2016). In 2014, Australia had the second highest rate of participation in tertiary education among OECD countries for individuals aged 30–64, and the highest rate of participation in post-secondary non-tertiary education for individuals aged 25–64 (OECD, 2016).

Given this, it is important to understand whether and how returning to education to upgrade one's qualifications is associated with social and economic mobility, with Australia constituting an interesting case study given its large share of mature-age learners. Nevertheless, while there is growing evidence of rising rates of individuals returning to education late in life (ABS, 2016; OECD, 2016) and emerging research on the reasons behind this decision (Boudard and Rubenson, 2003; Jenkins, Vignoles, Wolf, & Galindo-Rueda, 2003; Jamieson, 2007; Ronnie, 2015), we know relatively little about how obtaining a new qualification during mature age enhances labour market outcomes. A growing body of international studies points to gains in labour market outcomes for mature-age graduates – including better employment prospects and higher wages or occupational status (see e.g. Blanden et al., 2012; Blossfeld, Kilpi-Jakonen, Vono de Vilhena, & Buchholz, 2014; Chesters, 2015; Dorsett, Lui, & Weale, 2016). In this paper, we examine how

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educational upgrading during mature age (defined as gaining a new, higher-order qualification between the ages of 25 and 63) is associated with changes in hourly wages and occupational status in contemporary Australia using 15 years of panel data from the Household Income and Labour Dynamics in Australia (HILDA) Survey and fixed-effect panel regression models.<sup>1</sup>

## 2. The labour market returns to mature-age education

As posed by human capital theory (Becker, 1993), education and training are important investments and enable the acquisition of skills and abilities that improve workers' productivity in the labour market. This translates into better labour market outcomes, including lower unemployment rates, better jobs and higher wages, for those with the highest qualifications. In addition, educational qualifications also serve as a marker of more general individual attributes that are sought after by employers, such as motivation, perseverance and commitment, as suggested by signalling theory (Spence, 1973). The process of hiring employees is risky for employers due to the inherent difficulty in observing ability, and educational qualifications are taken as a signal of unobserved competencies (Brown, 2001). Consistent with these theoretical propositions, a long-standing body of evidence documents important labour market returns to education (see Harmon, Oosterbeek, & Walker, 2003; Machin, 2006; or Dickson & Harmon, 2011).

Studies focusing more specifically on the returns to education amongst mature-age students are scarcer. Until recently, the bulk of the available evidence came from the UK. In a seminal study, Jenkins et al. (2003) examined the labour market effects of lifelong learning between the ages of 33 and 42 using first-difference models. Their findings indicated that participating in lifelong learning increases men's and women's likelihood of being employed, but not their wages. Using data covering the period 1991–2006 and fixed-effect models, Blanden et al. (2012) found evidence of wage increases following from adult education (at age 30 years or later). For women, the effect was found to be causal, but for men it was found to emerge due to selection into adult learning. Using data stretching from 1991 to 2007 and focusing on men age 25 to 60 years, Dorsett et al. (2016) found that gaining a higher-order qualification (but not a same-level qualification) leads to wage increases.

Research on the labour market returns to lifelong learning for other countries has historically been scarce. In the US, Taniguchi (2005) examined the wage returns to tertiary education for older college graduates using data spanning from 1979 to 2000 and fixed-effect models. Students who were 25 years or older when they graduated received significantly lower wage premiums than younger graduates, and this penalty was more marked amongst male than female graduates. In Sweden, Hällsten (2012) used matched register data for the 1981–2007 period and fixed-effect models to investigate the economic returns to higher education qualifications obtained by mature-age students (age 30 or older). He found that degrees obtained in later life help increase both employment and earnings, particularly amongst women.

More recently, a landmark volume edited by Blossfeld and colleagues provided systematic evidence on the extent, predictors and consequences of adult learning across 13 developed countries (Blossfeld et al., 2014). Concerning occupational outcomes, the volume presents evidence of associations between adult education and higher occupational status and/or upwards occupational mobility in the US (Elman and Weiss: Ch. 4), Australia (Buchler, Chesters, Higginson, and Haynes: Ch. 5), the UK (McMullin and Kilpi-Jakonen: Ch. 6), Russia (Kosyakova: Ch. 7), Estonia (Saar, Unt and Roosmaa: Ch. 8), Denmark (Wahler, Buchholz, Jensen, and Unfried: Ch. 11), Germany (Buchholz, Jensen and Unfried: Ch. 12), Hungary (Csanádi, Csizmadly, and Róbert: Ch. 13), the Czech Republic (Hamplová and Simonová: Ch. 14), Spain (Vono de Vilhena and Miret-Gamundi: Ch. 15) and Italy (Barbieri, Cutuli, Lugo, and Scherer: Ch. 16). There is also some evidence of adult learning leading onto higher wages, income or earnings in the US, Finland (Kilpi-Jakonen, Sirniö, and Martikainen: Ch. 10) and Sweden (Kilpi-Jakonen and Stenberg: Ch. 9).<sup>2</sup>

The literature also suggests that age at graduation is a determinant of subsequent earnings, with some UK studies finding that older graduates earn less than younger graduates after graduation (Egerton and Parry 2001; Egerton, 2000; Purcell et al., 2007). In the US, however, Elman and Weiss (2014) find only weak evidence that the timing of mature-age education (between ages 25 and 44) affects individuals' wages by age 45. There is also emerging evidence that the labour market returns to lifelong learning are cumulative and realise with time since qualification attainment (Blanden et al., 2012; Dorsett et al., 2016; Hällsten, 2012; Taniguchi, 2005). For example, McMullin and Kilpi-Jakonen (2014) identify upwards trends in occupational prestige after the attainment of formal qualifications (particularly University degrees) during mature age in Great Britain. Kilpi-Jakonen, Sirniö, and Martikainen (2014) report that tertiary-level (but not secondary-level) adult learning improves income trajectories in Finland, while Kilpi-Jakonen and Stenberg (2014) estimate that the positive earning effects of mature-age education in Sweden realise only after at least 5 years post enrolment.

In Australia, there is robust evidence on the overall returns to education, which are –as in other countries– quite marked. For example, Leigh and Ryan (2008) estimated that earnings of workers in Australia increase by 8–12% with each additional year of education. Leigh (2008) showed that the hourly wages of workers with no post-school qualifications are 13% lower than those of workers holding a diploma, 30% lower than those of workers with undergraduate degrees, and 40% lower than those of workers with postgraduate degrees.

Australian research on the returns to education focusing specifically on mature-age students is comparatively underdeveloped. Findings by Coelli et al. (2012) suggest that achieving a higher-order qualification during mature age is associated with increased job

<sup>1</sup> While we acknowledge that the concept of lifelong/adult learning is broader than the attainment of new qualifications during mature age (e.g. it includes non-certifiable knowledge and skills) (Field, 2006), for ease of narrative in this paper we use the terms interchangeably.

<sup>2</sup> While occupational and wage outcomes are most common in studies of adult education, recent research has also examined other labour market outcomes. For example, Kilpi-Jakonen, Vono de Vilhena, Kosyakova, Stenberg, and Blossfeld (2012) and Vono de Vilhena, Kosyakova, Kilpi-Jakonen, and McMullin (2015) report that mature-age education increases the chances of being employed and securing non-precarious employment in the UK, Spain, Sweden and Russia.

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