

# Isolating the Determinants of Temporary Agency Worker Use by Firms: An Analysis of Temporary Agency Workers in Australian Aged Care

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## Abstract

*Despite a reasonable amount of literature on firms' reasons for using agency workers we contend that the firms which are users of agency workers are not well understood. Temporary agency work is interesting in the context of understanding the functioning of labour markets. Temporary agency work is of particular interest in Australia which already has a high level of casual employment offering employers considerable flexibility in managing their workforce by other means. We use a unique Australian employer survey in an industry with a higher than usual share of agency workers in the constrained worker supply context, to highlight and explore the differentiating features between those firms that do and do not use agency workers. The analysis enables better identification of the economic conditions under which firms use agency workers. We gain insight into aspects of the aged care sector that encourage temporary agency worker usage by firms.*

Keywords: Temporary agency workers; Labour demand; Forms of employment

JEL classification: J01, J23, J40

## 1. Introduction

This paper considers the use of temporary agency workers by firms in the Australian residential aged care sector. The purpose is to characterise firms and their usage of temporary agency workers within the Australian residential aged care sector. The value of this is two-fold. Firstly, research interest in non-traditional employment relationships continues as traditional forms of employment are being replaced by more temporary forms of employment, often with less direct relationships between organisations and the people who undertake work on their behalf. Secondly, the aim

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of this research is to better identify the economic and institutional reasons for why firms might want this more temporary relationship. The empirical focus on residential aged care is valuable to this aim because as the Australian population ages there is increasing demand for aged care services with pressure placed on the provision of care services. Of central interest to this research is the attendant problem for the firms of sourcing a sustainable workforce, as this gives a specific lens to understanding how temporary agency workers fit within the range of firms' solutions for their workforce problems. The further value of the Australian aged care sector for our research is that not only does Australia have a high use of temporary workers, including temporary agency workers, but within the aged care sector the scale of agency worker use is quite high, compared to internationally. The research question we address is what sorts of firms adopt this workforce solution, as this can be of benefit to better comprehend this component of the modern labour market. As well, this research provides some insight into what conditions of the aged care sector encourage temporary worker usage by firms. Consequently, in joining together these two areas, this paper provides a useful empirical contribution to a better understanding of both the nature of temporary agency worker use in the Australian aged care workforce and also of the drivers of this component of non-traditional employment.

We organise the paper as follows. We initially present a background to the research. In doing so, we clarify some of the special aspects of temporary agency work. This is followed by a brief overview of existing literature on temporary agency work. This review has a separate subsection specifically representing the firms' motivations for temporary agency worker use which we focus upon in our later empirical sections. This subsection explores in detail what is known about firm motivations for the use of temporary agency workers. We reflect that the evidence is thin and overly generalised about the reasons for employers' use of temporary agency workers.

We then present arguments as to why empirical analysis of Australian agency worker use in aged care reveals a compelling story. Subsequent sections present the empirical analysis of the features of Australian aged care firms using agency workers. Finally, we discuss the findings in the context of the literature to date and draw some conclusions.

## **2. Background**

### ***What is Interesting about Temporary Agency Work?***

Temporary agency work is interesting. It is part of the framework of the functioning of labour markets where it is often seen as a segment of the construct of 'employment flexibility' and non-traditional forms of employment.

There is a distinctive aspect of temporary agency work which is often misunderstood. Temporary agency work can be particularly curious amongst the variety of temporary work forms because of the triangular contractual relationship that exists. Agencies supply temporary workers on a contract basis to other 'host firms'. The agency workers remain on the payroll of the supply firm (the 'agency') but work for and are under the supervision of the client 'host' firm. The agency receives a fee for its services above the wage paid to the agency worker. These bilateral contractual arrangements between the agency and the host firms and between the agency and the agency workers allow for easy adjustment at short notice. Agency workers are

external employees because they are hired by one organisation (the temporary work agency) in order to work in another organisation (client organisation) at a profit. While administrative control is with the agency, the client organisation supervises and directs the immediate work carried out by the agency worker.

### **Literature**

There are several key strands which we identify in the literature on temporary agency workers to date. We define four strands to the literature on temporary agency workers which focus: (1) on defining this form as non-traditional employment, (2) the agency worker perspective, (3) the cross-over between the workers and firm outcomes, and finally (4) the firms' reasons for agency worker use.

### **Non-traditional Employment**

One key initial strand of the temporary agency worker research to date stems from the contrast between this form of employment and the traditional regular employment relationship. The traditional employment contract, including that for part-time work, is an agreement between the employee and the employer which involves an expectation of an ongoing relationship, even though either party might terminate the relationship at any time. In contrast, temporary agency workers expect and are expected to be temporary. Much literature has been devoted to identification and acknowledgement of the existence of this non-traditional form of employment, pointing out the existence, size or growth of temporary agency worker numbers, see for an example Purcell (1998). The terminology in the earlier literature about temporary agency work encompasses terms such as externalisation, outsourcing and contracting out, as outside contractors in market-mediated work arrangements were included together with temporary workers in the contracting out of business support services and subcontracting, Abraham *et al.* (1993); Abraham *et al.* (1996). The terms were linked because they involved the use of external workers (outsiders) to perform tasks that in principle could have been done by the firm's regular employees. Temporary agency work has also been referred to as 'temporary help employment' and grouped early on with part-time work under the term 'contingent work'.<sup>1</sup> Labour hire and on-hire have also been used to refer to temporary agency work, and Hall (2000, p.24) points out that it falls into the context of non-standard employment forms (atypical employment). Some literature further links temporary agency work to the 'casualisation' of work, Lumley *et al.* (2004).

### **Agency Worker Perspective and the Worker Outcomes**

A second strand of temporary agency work literature focuses on the agency worker perspective and the worker outcomes for this variation from the traditional employment nature. In their extensive review, Connelly and Gallagher (2004, p.963) reflect that temporary agency worker areas of research cover exploration across the range of agency worker commitment, job satisfaction, role conflict/ambiguity, volition, perceived organisational support, justice/unfair treatment, organisational/citizenship behaviours, wellbeing, work-family conflict, performance, psychological contracts,

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<sup>1</sup> Belous (1989) cited in Abraham *et al.* (1993, p.1).

integration/trust and knowledge-sharing. In this agency worker perspective strand, human capital theory and labour market segmentation are variously used to address why workers undertake temporary agency work under certain conditions. Some argue that agency workers have either selected this from a range of job options or have been matched to it by the sorting of skills in the labour market. Workers with marginal commitments to the labour market, generally identified in this literature as being mainly married women with children, young people and older people, select temporary agency work over other employment options, motivated by a need or desire for the flexibility accorded by this form of work, Coe *et al.* (2010, p.1,060). However, this view is contested and in contrast the labour market segmentation literature focuses on constrained choices and that these same groups of women, young people and older workers cannot access regular work, Purcell *et al.* (2004); Forde *et al.* (2005); Stanworth *et al.* (2006); Drago *et al.* (2009). This aspect further links to the flexibility-hours mismatch literature which suggests that identifying mismatch empirically for those workers that are the most likely to be in a mismatched job reflects the constraint rather than the choice, Altonji *et al.* (1985); Golden (2001); Boheim *et al.* (2003); Reynolds *et al.* (2006).

The issues of constraint and choice from the worker perspective also demonstrate that worker preferences must be examined in order to understand individual workers and agency work. Bernasek *et al.* (1999) provided some early survey information from a US contingent worker supplement to the general Current Population survey (the contingent worker category is broader than just agency workers), which were split into those preferring this type of work and those not. They found strong variation by this split, with those preferring this type of work differing clearly in personal and job characteristics from those not preferring contingent work. This split between constraint and choice or preference, and what this means, is found again in Brennan *et al.* (2003, p.91) where it was found that 64 per cent of Australian temporary agency workers surveyed felt they had a choice about temporary agency work but also that 60 per cent would prefer to be employed directly.

In the more recent literature for this strand, it is concluded that preference, volition or intent plays a key role in influencing the outcomes for workers Krausz (2000); Isaakson *et al.* (2002); Parker *et al.* (2002); Rodriguez (2002); Cuyper *et al.* (2007)<sup>2</sup>. Individuals preferring temporary employment (voluntary temporaries) are likely to respond in a more favourable way, and so the self-reported attitudes, wellbeing and behavioural outcomes are a function less of the status (temporary agency worker or regular employee) and more of the preference for the status or not. However, when constrained choice of contract occurs as in many labour markets, volition is unlikely to fully explain outcomes. The motives for accepting temporary agency employment then need to be investigated more than just contract preference and this has limited the evidence about volition, Cuyper *et al.* (2007).

Taken together, these aspects of constrained choice and preferences of the workers suggest that firms and their motivations for using agency worker forms of employment may dominate the market supply and demand for each type of employment

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<sup>2</sup> Buddelmeyer *et al.* (2013) examine job satisfaction for contingent agency workers but the data and analysis do not reflect preference, volition or motives.

form in certain situations. This domination then leads to the workers having less discretion over their employment terms such as the form of employment contract. For this reason, we pursue the firm and the features of the firms using agency workers in our subsequent empirical analysis.

A further subdivision of agency worker perspective in the literature develops upon the concept of the interaction between the agency workers and the standard workers. The consequential outcomes derived from temporary agency worker use in this literature stem from the interaction between agency workers and standard workers, resulting in the standard workers outcomes being affected, Allan (2000); Ward *et al.* (2001); Davis-Blake *et al.* (2003); George (2003); Purcell *et al.* (2004); Hoque *et al.* (2008); Banerjee *et al.* (2012); Bryson (2013)<sup>3</sup>. The presence of agency workers can stir up negative emotions among internal standard employees, Allan (2000), and cause a deterioration in relations between co-workers and between management and co-workers, Chen *et al.* (2009); Davis-Blake *et al.* (2003). Given their temporary membership of client organisations, agency workers often lack the organisation-specific knowledge necessary to carry out the work as efficiently as standard employees, Allan (2000); Ward *et al.* (2001); Purcell *et al.* (2004); Hoque *et al.* (2008). There is some evidence standard employees adapt by taking on higher workloads thereby increasing their stress, Ward *et al.* (2001); Hoque and Kirkpatrick (2008), and are put in a position of being informal supervisors, Broschak *et al.* (2006); Hoque *et al.* (2008), which raises stress and workload for the standard employees Allan (2000); Ward, *et al.* (2001); Purcell *et al.* (2004); Hoque *et al.* (2008). In a recent meta-analysis of 72 studies, Wilkin (2013) concluded that workers in temporary positions such as casual and labour hire workers were slightly less satisfied with their jobs than permanent employees.

### ***The Overlap between the Worker Perspective and the Firm Outcomes***

In a third strand in the literature, this interaction between standard and non-standard workers is also seen as acting as the mechanism propagating the firm outcome – see, for example Pedulla (2013). Hence, there is a link between the agency worker, worker outcomes and firm outcomes. However, there are comparatively few empirical papers which directly examine temporary agency workers and firm outcomes as there are few data available which allow such analysis. Amongst those which do exist, the findings are varied with regard to the relationship between firm performance and use of temporary agency workers. This is likely to be partly due to the causal impact of agency workers on firm performance being potentially difficult to identify across all firms (as a result of reverse causation arising from the non-random use of agency workers by firms in differing contexts). Bryson (2013) uses British workplace panel data and finds that agency workers are associated positively with improved financial performance for firms, but only weakly associated with the firm outcome of higher sales per employee and not statistically associated with the firm outcome of value added per employee. They also find from the linked employee data that the presence of

<sup>3</sup> Results in outcomes for workers cover increasing job stress, Allan (2000); Ward *et al.* (2001); Purcell *et al.* (2004); Hoque *et al.* (2008), decreasing job satisfaction, Banerjee, *et al.* (2012); Bryson (2013) and increased intention to leave, Ward *et al.* (2001); Davis-Blake *et al.* (2003); Purcell *et al.* (2004); Hoque *et al.* (2008).

any temporary agency worker in the workplace (not just in the employee occupation) is negatively associated with (standard) employee wellbeing, Bryson (2013, p.137) which supports the earlier findings of the literature on the interaction between standard workers, agency workers, and the worker outcomes. Earlier work on the relationship between firm performance and use of temporary agency workers vary between countries, variation in the construction of the firm performance measures used, and sometimes different analytical techniques, so it is hard to identify if the difference in results for the relationship found are due to the differing national institutional context or these other variables. Nielsen *et al.* (2011) used panel data on German manufacturing firms and found a U-shaped relationship between the intensity of agency worker use (percentage of agency workers in the firm's total employment) and a measure of unit labour costs, which they interpreted as linking agency worker use to firm competitiveness. Beckman *et al.* (2009) used panel data for German firms and found an inverse U shaped relationship between the share of temporary workers in the firm's workforce and changes in sales.<sup>4</sup>

A somewhat earlier literature also linked worker employment terms to the firms' outcomes. This was specifically in the health care services sector. There is a subdivision within the health care literature which examines how staffing characteristics of the workforce in health care settings such as hospitals and aged care, in particular agency workers, can adversely affect the quality of care (an outcome of the firm). Allen (2000, p.199) examined agency worker use in a hospital setting and found case study evidence indicating that they were '...less committed to the work and the organisation and less capable of performing the full range of tasks for which they are paid. Permanent staff often had to work harder to cover for their shortcomings'. They also found agency staff made it difficult to achieve the organisational aspirations of quality care service. Castle *et al.* (2008) used a survey to study the relationship between agency working in nursing care staff for US residential aged care. They found that high agency nurse use was associated with lower care quality. This builds on earlier US findings for nursing agency staff in hospitals which showed they were associated with low care quality. Strzalka *et al.* (1996). This literature reflects that aspects of the workforce solutions adopted by firms (including the employment form being permanent or temporary agency worker) can affect key outcomes of the firm (in this case negatively). We note briefly here that this health care literature makes a further case for the potential valuable contribution in the aged care context of empirical studies such as that here of aged care firms' use of temporary agency workers.

In the next section we address the fourth strand of the literature which we have identified, namely, the firms' perspective on why they use agency workers. This strand is of particular relevance to our subsequent empirical study of aged care firms' reasons for using temporary agency workers.

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<sup>4</sup> Other findings on agency worker use and firm performance by Kleinknecht *et al.* (2006) for Switzerland and Arvantis (2005) for Holland suffer from technical problems identified from subsequent developments in econometric techniques, which make these earlier findings unreliable econometrically.

### 3. An Overview of the Specific Literature on the Firms' Reasons for Temporary Agency Worker Use

In this section we cover the perspective of earlier literature specifically addressing the host firms' reasons for using agency workers. We would point out that while the international literature is included, it is important to maintain awareness of the many differing institutional frameworks and employment law for the agency worker context and that this can change over time.

The existing international and national literature on why host firms use agency workers is largely empirical and descriptive. In essence, a small number of modest scale surveys, in the US and Australia, have directly asked employers why they use agency workers. The results are mostly reported in terms of the prevalence of the particular reasons and reflections on how the reasons relate to profit-maximising behaviour, Houseman (2000, 2001); Brennan *et al.* (2003). Regression estimates are occasionally used to support the descriptive significance of individual factors. There is also sometimes the use of larger general data sets to address the issue across all types of firms within the US, the UK and Australia, Abraham *et al.* (1993, 1996); Laplagne *et al.* (2005); Forde *et al.* (2005). These surveys are supplemented by case studies that look for more detail and reasoning, Connell *et al.* (2002); Houseman *et al.* (2003); Stanworth *et al.* (2006). These studies have been the basis of several overviews of the research, Hall, R. (2006); Coe *et al.* (2010), which underpin the growing consensus about the main motivations that host firms have for employing agency workers. These motivations include rapid accommodation of fluctuations in the firm's product demand and labour supply from their permanent workforce; as a form of probation and screening; reduction in on-costs and costs of hiring and firing; quick provision of hard-to-recruit skills and reduced exposure to industrial action. These factors have been further reduced by some reviewers to numerical flexibility and the engagement of labour without obligation, Hall (2000, p.30). From their analysis of the Australian Workplace Industrial Relations Survey, and perhaps reflecting the question focus of this survey context, Laplagne *et al.* (2005, p.39-40) concluded that structural change, the competitive environment, and industrial relations had a role in the adoption or greater use of agency workers. These would seem to concur with the findings already mentioned but use language that refers more to the broader overlying features of the economic/institutional environment.

Considering that the use of agency workers has been shown by this review to give firms the benefits of increased flexibility, cutting costs and providing access to qualified staff to cover for skill shortages then it might be argued that the use of agency workers is beneficial to firms. Previous research cited earlier about the effects on the standard workers, and the firm performance, has however pointed out a number of drawbacks. This also overlaps with the literature on use of temporary agency workers within the occupation of nursing, or within hospitals/care-giving roles which finds adverse effects on the quality of care, Strzalka *et al.* (1996); Allen (2000); Castle *et al.* (2008); Castle (2009). The benefits of agency worker use for firm performance, as set out earlier, are slightly unclear from the empirical evidence to date with some finding a positive relationship but with some finding an inverse U shaped relationship, Beckman *et al.* (2009); Nielsen *et al.* (2011); Bryson (2013).

A valuable distinction has been highlighted between the reasons for using high and low skill agency workers. Houseman *et al.* (2003) concluded that for high skill occupations, employers paid more to agency workers than to regular employees, mainly to gain extra recruiting time for permanent positions, thereby avoiding wage rises for new hires and existing employees. For low skill occupations agency workers appeared to have facilitated the firms scope to try out more 'risky' workers, by lowering their wage and benefits and the costs of turnover. Interestingly, the Houseman *et al.* (2003) findings are set in the context of hospitals, and can be informative for the aged care setting of the data we use.

We would contend on the basis of this review that the employers and their use of agency workers are not well understood and bear deeper analysis. With the exception of Laplagne *et al.* (2005) which used the AWIRS, the literature on firms' use of agency workers is mainly derived from short cross-sectional quantitative surveys or case studies. Such surveys are essential to establish a representative picture of the main reasons for agency work across a wide range of industries and occupations. As the review shows, mainly drawn from the case study research, there are varying circumstances under which agency workers are used by host firms for different reasons (Hall, 2000; Houseman *et al.* 2003; Stanworth *et al.* 2006). Agency workers are a solution tool, rather like a penknife, applicable in a range of circumstances. Hence there are serious limits to how much such general coverage surveys can reveal about the particular circumstances of the use of agency workers, and the complexity of the host firm motivations.

One of the key reasons for the use of agency workers is as a strategy for organisations to achieve numerical flexibility and adjust for changes in the business cycle, Houseman (2001); Kalleberg *et al.* (2003); Ono *et al.* (2013) and can vary with the output of industrial production, Jahn *et al.* (2012). In line with the argument regarding numerical flexibility, some research has found that using agency workers allows organisations to circumvent laws on employment security and as such make it possible to lay off staff at short notice, Burgess *et al.* (2006); Hall (2006). Another reason put forward for using agency workers is to screen them as potential employees in the internal workforce, which infers that labour laws make it hard to dismiss employees (cheaply) once hired on a permanent basis, Houseman, (2001); Houseman *et al.* (2003). The logic of hiring agency workers to achieve numerical flexibility in staffing does imply a fluctuation in demand for output or services. Ono *et al.* (2013) explore US manufacturing firms' use of temporary agency workers and the firm characteristics in the context of fluctuating output. They found that plants tended to use agency workers when their output was expected to fall, suggesting agency workers were used to reduce the costs of dismissing permanent employees. Dräger *et al.* (2012) also focus on numerical flexibility and workload/demand/business cycle fluctuations using European cross-country firm data to explore the role of employment protections in the use of agency workers. They found that in countries with high employment protection (high dismissal costs for workers with permanent contracts) firms with an unstable workload were significantly more likely to hire temporary agency workers<sup>5</sup>. Hence our research can add to the knowledge about the use of agency workers in the setting of the other reasons put forward by firms which have not yet had much attention.

To redress gaps in the literature we concentrate on understanding the types of host firms and their use of agency workers. This is of particular interest in Australia, which already has a high level of casual employment, which gives employers considerable flexibility in managing their workforce. This suggests that there is an additional aspect provided by agency staff to their firm clients, that we would like to understand more fully.

#### 4. Temporary Agency Work in Australia

The use of temporary workers in a variety of forms, not just temporary agency workers, is reasonably high in Australia. In 2010, only just over two thirds of employees were permanent, Buddelmeyer (2012, p.54). The almost one third of employees in temporary work were 2.5 per cent temporary agency workers, 19.9 per cent casuals, 9.3 per cent fixed term, Buddelmeyer (2012, p.54 HILDA). The study of temporary agency work within Australia is then also of special interest because there is a strong market alternative available in the formal casual worker context. This is particularly well developed in Australia, relative to other international settings. There are formally agreed Award wage rates which set a 25 per cent loading<sup>6</sup> and contract terms which apply to casual workers.

In the narrower group of temporary agency workers, since 2000 in Australia the scale of agency work amongst the employed appears to have fallen slightly or been level. Shomos *et al.* (2013, p.39) indicate that the growth in the prevalence of agency workers amongst the forms of work in earlier decades variously reported in the literature is not evident in Australia over the decade from 2000. The share was 3.1 per cent in 2001, and remained at this level until 2003 after which it fell to below three per cent reaching 2.3 per cent in 2010 according to Household Income and Labour Dynamics in Australia data; while using the ABS Forms of Employment Survey 2001, 2008 and 2011 the share of agency workers amongst the employed was 1.8 per cent, 1.2 per cent, 1.2 per cent, respectively, Shomos *et al.* (2013, p.83 table B5).<sup>7</sup>

In 2011<sup>8</sup>, the 1.5 per cent of Australian employees who were agency workers made up a total of 141,700 persons who were paid by a labour hire firm/employment agency. It is important to note that this information reflects a set of questions about how they found their work and whether they are paid via the agency. Of these persons, the Administrative and support services (20 per cent) and Manufacturing (13 per cent) were the industry divisions with the greatest proportion. Clerical and administrative

<sup>5</sup> Dräger *et al.* (2012, p.19).

<sup>6</sup> Australian Industrial Relations Commission 2008, modern Awards casual wage loading applied from 1 January 2010, Shomos *et al.* (2013, p.11-13).

<sup>7</sup> Estimates based on sample surveys are subject to sampling error and the standard error measures the reliability of the estimates given the features of the survey. The HILDA is a complex longitudinal household survey and no standard error is published for these statistics cited while the ABS FOES is a supplement to the monthly Labour Force Survey which also has complicated survey design affecting the standard error, and while a spreadsheet is available for determining the standard error of particular estimates within a year there is no guidance for inter-year comparisons. Given the scale of the differences between estimates is fairly small at less than two per cent then in the context of the standard error of these surveys, these variations between estimates are unlikely to be strongly statistically different from each other if formally tested.

<sup>8</sup> ABS 6359.0 Forms of Employment Survey November 2011. We use the term agency worker rather than labour hire.

workers (21 per cent) and Machinery operators and drivers (19 per cent) were the most common occupation groups. Amongst labour hire workers, there were 115,500 persons (82 per cent) who usually had continuous/ongoing work from a labour hire firm/employment agency. For the groups of workers that would represent aged care which is the focus of our subsequent empirical research, this survey finds that amongst labour hire workers there are six per cent in the Health care and social assistance industry and seven per cent in Community and personal service occupation. In this context, it becomes clear that temporary agency work in Australia is a persistent, although small phenomenon amongst the temporary worker solutions available to firms. It is of interest to understand this alternative and more about the firms that choose it.

## 5. Aged Care and the Australian National Aged Care Workforce Census and Survey, 2012

Previous research covered in the literature reviewed has identified an overview of the reasons and advantages to host firms from the use of agency workers, but it has also posited that there can be drawbacks for firm performance from using this variation from the standard form of employment. We aim to further explore the differences between those firms that do and do not use agency workers, using relatively expansive information available about Australian aged care organisations. We will establish the roles that agency workers play in enabling facilities to deal with shortages of specific skills. This is possible to do in our data, which is confined to an industry where there is stable overall demand (aged care). In doing so, we will use information in the data about the firm to take account of how the facilities differ in, among other things, the reasons for the skill or labour shortage, efforts to recruit new staff and working conditions.

Recognising the earlier findings, we would like to further examine firms' use of agency workers in the context of a tight labour market (skills shortages), and the variation for the low-skill / high-skill dichotomy. The data we apply to this question allow us to focus on host firms in a single industry sector<sup>9</sup> which has a higher than usual share of agency workers (residential aged care), and the low skill / high skill occupational dichotomy can be pursued for personal care workers (low skill) and nurses (high skill). This can isolate the information about firm's use of agency workers from the data more clearly. We understand that one reason for hiring agency workers is to achieve numerical flexibility in staffing when demand for output or services fluctuate. But we expect aged care facilities to have quite a steady demand for their care services. The use of agency workers is also related to a need to fill vacancies. Recruitment, particularly of nurses, can be difficult in the Australian aged care sector, King *et al.* (2012, p.59). Case studies in the Australian context indicate that the decision to hire registered nurses through agencies is driven by the immediate need for employees of appropriate qualification, Allen (2000); Lumley *et*

<sup>9</sup> There is some relevant earlier literature within the context of a single occupation or single industry. Bryson and Blackwell (2006) explore the single industry of UK higher education where temporary worker usage is over 50 per cent, however there is not a temporary agency worker focus, and hence it is not in the earlier review. Ono *et al.* (2013) explore US manufacturing firms' use of temporary agency workers and the firm characteristics in the context of fluctuating output.

*al.* (2004). In addition, there is often a fixed staffing ratio to ensure there are enough staff with the correct qualifications rostered in order to meet the minimum standards of care guidelines for assuring aged care service quality, Kaine *et al.* (2013). Hence aged care use of agency workers is likely to be driven more by skills shortages or other reasons cited by firms in the earlier literature review and we look for evidence that this is the case.

We use the National Aged Care Workforce Census and Survey, 2012. This data provide information about Australian aged care providers and their workforce in aged care. Aged care is a useful context for analysing agency workers for several reasons. Firstly, employment in the aged care sector is currently expanding but labour and skills shortages in the aged care workforce are predicted to multiply further due to the aging population (Productivity Commission, 2011). Hence, aged care is a sector facing high overall demand, and high workforce demand. This context is useful because it allows our analysis to focus on the firms' reasons for use of agency workers when faced with a context of overall growth in demand for aged care places and a short supply of workers. This allows us to preclude some of the gamut of reasons firms put forward for the use of agency labour (see, earlier literature review). For example, 'numerical flexibility' for reasons of uncertain demand can be put aside because the demand for workers in aged care holds steady overall. Hence our research can add to the knowledge about the use of agency workers in the setting of the other reasons put forward by firms which have not yet had much attention.

A second reason for which aged care is a useful context for agency workers is that the workforce characteristics of the aged care sector lend themselves to the empirical study of agency workers. This is because of a greater sample size of firms using agency workers due to the relatively high use of agency workers with 46 per cent of facilities using agency workers, King *et al.* (2012, p.65). This is noteworthy when considered in the context of the 2011<sup>10</sup> figures of agency work presented earlier as it shows that although agency workers are used by a large number of firms within aged care, it is a relatively small share of all agency workers who are in the occupations and industries in which aged care would be found (six to seven per cent). The aged care workforce in 2011 was made up of nearly ten per cent of agency workers whereas in the general Australian workforce this was only one and a half per cent, King *et al.* (2013) and ABS 6359.0 Forms of Employment Survey 2011. Some earlier research has also used these data for this reason, but focussed on the effects on workers satisfaction or intention to leave/retention rather than the firms' perspective, King *et al.* (2013); Howe *et al.* (2012).

The Australian aged care labour market environment is acknowledged to face some labour market issues related to the 'managed market' regulatory and institutional context it enjoys. Aged care is a labour intensive activity and aged care employees in caring roles make up about 23 per cent of the Healthcare and Social Assistance Industry workforce, Productivity Commission (2011, p.349). Aged care services are publicly funded via Federal government funds to a mixture of private and public providers of aged care. There is regulation of the amount individuals pay for aged care and the subsidy for this, there is licensing of residential aged care providers and there

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<sup>10</sup> ABS 6359.0 Forms of Employment Survey 2011.

are minimum standards of care, Kaine *et al.* (2013, p. 26-28). The public funding is distributed to facilities via a subsidy for each resident, based on assessment of their care needs level which is performed by Aged Care Assessment Teams. The public funding of the aged care sector has been linked to the acknowledged low wage rates faced by aged care workers, Kaine (2012); Kaine *et al.* (2013); King *et al.* (2013), for example: ‘...the public funding of aged care...has imposed budgetary constraints, with aged care providers frequently citing inadequate funding as a barrier to improving the wages and conditions of caregivers’, Kaine *et al.* (2013, p.39).

For the aged care workforce low wages in particular apply to personal care assistants (PCAs) rather than nurses or allied health services. PCAs in residential care provide mainly personal care and basic health care tasks but undertake tasks such as administering medications when they have undertaken relevant training, King, *et al.* (2013, p.306). Martin (2007) and King *et al.* (2013) indicate that the competing industries against which PCA workers tend to benchmark for jobs are similar skill level occupations in retail and hospitality which can have somewhat higher wages. This competition across sectors for the PCA workforce is relevant to the issue of the low wages in aged care: ‘...In responding to these demand pressures, the supply of personal care workers ... will be driven by the relative attractiveness of aged care compared to alternative employment options. Basic personal care skills such as those of PCA’s can be developed reasonably quickly, but so can the skills associated with similar paying work. While most aged care providers will support skill development, current remuneration and working conditions are considered strong disincentives to entering and staying in the sector’, Productivity Commission, (2011, p.354). Another aspect of the (low) pay in aged care is that it is mainly set through the centralised system of Awards. Further, there is a special industrial relations aspect within aged care as in 2012 the Living longer, living better: aged care reform package, Department of Health and Aging (2012) put aside a substantial share of the allocated funding for the aged care sector to be subject to the development of a workforce ‘Compact’ between unions, aged care providers and Government for the improvement of wages and conditions but progress since then is unclear, Kaine *et al.* (2013, p.40). In our later analysis of agency work, we exploit the ability of our aged care data to examine both nurses and PCA’s to better explore the skills context of firms’ application of agency work.

### ***The National Aged Care Workforce Census and Survey, 2012***

The Australian National Aged Care Workforce Census and Survey, 2012 (hereafter the Aged Care Census) provides a valuable opportunity to explore the use of agency workers by host-organisations, in this case in aged care organisations. This large scale survey was conducted for the Commonwealth Department of Health and Aging. In 2012, the census covered both the residential and community aged care organisations and their related workforces, and provided detailed information about aspects of care work. Accordingly, it gives a comprehensive snapshot of the national Australian aged care workforce. The methods and instruments are reasonably well established and documented King *et al.* (2012, p.3-7), with a high response rate and quality allowing generalisation from the data.

The Aged Care Census 2012 went out to all residential facilities, sometimes called nursing homes or long-term care facilities; and community care facilities. We use only the data from the residential aged care sector. The differences between that sector and the community care sector would, at this stage, cause unnecessary complications. The Department of Health and Ageing supplied a list of organisations that received funding in specific aged care programs and this list was the basis of the sample. The response rate was high: 96 per cent or 2,481 responses from residential facilities. This was attributed to both the fact that the address list information was accurate and up to date but also to a sizable unique incentive "...the Commonwealth offered a participation incentive to facilities through the Conditional Adjustment Payment", King *et al.* (2012, p.6). The survey was sent out in late January 2012 and was in the field until March 30, 2012. Data from facilities were reported based on workforce records for a designated fortnight, taken as the last pay period in November 2011.

The data were weighted and analysed to provide a comprehensive snapshot of the national aged care workforce as reported in King *et al.* (2012). A modified version of the dataset has been made publically available to researchers via the Department of Health and Ageing. The data to be used in our analysis, however, is from the original dataset held at the National Institute of Labour Studies.

The Aged Care Census 2012 primarily provides information about the directly employed workforce in direct care roles in aged care. While data on agency workers were collected, this was only done at the facility level. As such, detailed comparisons of the agency workers and internal workforce beyond occupation cannot be made. However, there is good information about the facility and aspects of their workforce including the agency workers, which is what we utilise.

We introduce the available information on employment of agency workers in the survey, and then discuss our analysis methods.

The data in the Aged Care Census on the facilities and the workforce of the aged care sector contain a great deal of information that can be used to obtain insights about the firm and motivations for using agency workers. Firstly, agency workers are a significant proportion of the direct care workforce: in the designated fortnight they were nearly 10 per cent of all direct care workers in nursing homes. This is substantially higher than the general Australian workforce (1.5 per cent in the ABS 6359.0 Forms of employment survey 2011 when calculated as a percentage of all employees: 141,700 of 9,286,200).

Of these agency workers, personal care attendants formed the largest group, as they do in the aged care employee workforce, while registered nurses provide specialised services and work a higher number of shifts per worker than other occupations. 46 per cent of all residential aged care facilities had engaged agency workers in the survey period (a designated fortnight). Overall, 55 per cent of firms engaged external workers of all types (table 1).

Table 1 - Proportion of Residential Facilities Using External Workers in the Designated Fortnight, by Occupation and Type of Worker, 2012 (per cent)

<i>Occupation</i>	<i>Temporary agency worker</i>	<i>Brokered</i>	<i>Self employed</i>	<i>All external workers</i>
Registered Nurse	31.2	0.9	1.2	32.6
Enrolled Nurse	16.9	0.2	0.2	17.1
Personal Care Attendant	33.9	0.3	0.3	34.3
Allied Health	3.2	4.0	11.2	16.9
All occupations	45.8	4.9	11.8	55.0

*Source:* King *et al.* 2012, p.65.

## 6. Description of the Empirical Analysis Methods

We aimed for this analysis to provide a simple, well-targeted description of the key (statistically significant) differences between organisations by the subgroups ‘use agency workers’, (or ‘don’t use agency workers’). We also explored the role of agency workers in helping to manage changes in the availability for work of the host organisations’ core workforce.

We used the residential facilities information only. The variables were selected representing information from facilities about their organisational characteristics, workforce size and characteristics, skill shortages, vacancies, work-related injury/illnesses, and their use of agency workers in direct care roles. We excluded information about allied health workers and nurse practitioners and used only those in nursing or personal care attendant occupations. For the purposes of the high skill grouping, we combined registered nurses with enrolled nurses, while for the low skill grouping we used personal care attendants. We conducted statistical tests and report only differences that are both significantly different in a statistical sense, and big enough to matter.

Initially in our descriptive analysis, using cross tabulation we explored the association between the characteristics of aged care organisations that use agency workers, against those which don’t. We then analysed this association in the multivariate context using a probit to allow us to account for these factors together and find what is still influential in describing aged care organisations that use agency workers, against those which don’t. We included in the model all of the firm description variables examined. In reporting the probit results, we give the marginal effects which help with interpretation, rather than the coefficients. Due to the survey design, and also to highlight the high-skill/low-skill dichotomy, we analyse nurses and personal care attendants (PCAs) separately.

There is a sound sample size for each of the key subgroups we examine – facilities’ employment of nurses and PCAs, and their agency worker use for these occupations (table 2).

Table 2 - Samples of Residential Facilities for Nurses and PCAs, by Use of Agency Staff

	<i>Residential Facilities</i>			
	<i>Nurses</i>		<i>Personal care attendants</i>	
	<i>Without agency staff</i>	<i>With agency staff</i>	<i>Without agency staff</i>	<i>With agency staff</i>
Cases	1,423	879	1,447	840

*Notes:* Number of survey cases in each group.

## 7. Results of the Empirical Analysis

The data show that while aged care facilities of all types use agency workers, some types have a higher propensity to use agency workers than do others. We note that each characteristic is initially examined in isolation whereas in practice some are likely to be linked such as having a small number of employees and being in a regional or remote area. This is tested in the probit results reported subsequently.

There are a cluster of questions about the size, corporate configuration and location of the aged care facility (see, tables 3 and 4). They show that larger, for profit, metropolitan facilities and those that are part of a larger organisation are more likely to employ agency staff. While there are some differences in degree, the pattern applies to both nurses and PCAs. This suggests that the use of agency staff is more likely to be part of the strategy of larger and more formal human resource management practices.

Table 3 - Average Number of Employees at Facility by Whether Agency Staff is Used

<i>Residential facilities</i>	<i>Without agency nurses</i>	<i>With agency nurses</i>	<i>Without agency PCAs</i>	<i>With agency PCAs</i>
Average number of registered and enrolled nurses	14.1 t = 6.82 Pr = 0.000	18.1	14.9 t = 3.17 Pr = 0.002	16.8
Average number of personal care attendants	36.0 t = 10.54 Pr = 0.000	48.6	36.1 t = 9.85 Pr = 0.000	48.0
Total number of employees	71.4 t = 10.51 Pr = 0.000	93.7	72.3 t = 9.38 Pr = 0.000	92.5

*Notes:* The mean in each group is shown.

Table 4 - Proportion of Facilities with Agency Staff by Ownership Type, Corporate Structure, Location

<i>Residential facilities</i>	<i>Nurses</i>				<i>Personal care attendants</i>			
	<i>Without agency staff</i>		<i>With agency staff</i>		<i>Without agency staff</i>		<i>With agency staff</i>	
<i>Ownership type</i>	<i>Cases</i>	<i>Per cent</i>	<i>Cases</i>	<i>Per cent</i>	<i>Cases</i>	<i>Per cent</i>	<i>Cases</i>	<i>Per cent</i>
Not-for-profit	849	64.6	465	35.4	802	60.9	515	39.1
For profit	401	54.4	336	45.6	428	59.2	295	40.8
Public	173	68.9	78	31.1	217	87.9	30	12.1
Total	1,423	61.8	879	38.2	1,447	63.3	840	36.7
	chi2 = 26.85		Pr = 0.000		chi2 = 72.59		Pr = 0.000	
<i>Corporate structure</i>								
Part of larger organisation	1,041	58.3	744	41.7	1,054	59.3	722	40.7
Not part of larger organisation	387	73.0	143	27.0	398	76.0	126	24.0
Total	1,428	61.7	887	38.3	1,452	63.1	848	36.9
	chi2 = 37.36		Pr = 0.000		chi2 = 47.94		Pr = 0.000	
<i>Location</i>								
Major Cities	730	51.7	682	48.3	679	48.3	728	51.7
Inner Regional	445	77.9	126	22.1	493	86.3	78	13.7
Outer Regional	213	80.4	52	19.6	233	90.3	25	9.7
Remote	21	58.3	15	41.7	28	82.4	6	17.6
Very Remote	14	77.8	4	22.2	14	82.4	3	17.6
Total	1,423	61.8	879	38.2	1,447	63.3	840	36.7
	chi2 = 164.87 Pr = 0.000				chi2 = 356.37 Pr = 0.000			

*Note:* Percentages are of the total in each row.

Most managers of aged care facilities have nursing qualifications, with almost half of these also having management qualifications (table 5). There is some tendency for nurse managers to be more likely to be present in firms which employ agency staff, particularly agency nurses.

Table 5 - Proportion of Facilities With Agency Staff by Manager's Qualification

<i>Residential facilities</i>	<i>Nurses</i>				<i>Personal care attendants</i>			
	<i>Without agency staff</i>		<i>With agency staff</i>		<i>Without agency staff</i>		<i>With agency staff</i>	
<i>Manager's qualifications</i>	<i>Cases</i>	<i>Per cent</i>	<i>Cases</i>	<i>Per cent</i>	<i>Cases</i>	<i>Per cent</i>	<i>Cases</i>	<i>Per cent</i>
Nursing	688	59.6	466	40.4	725	63.2	423	36.8
Managerial	76	69.7	33	30.3	77	68.8	35	31.3
Both of them	590	62.0	362	38.0	584	62.0	358	38.0
Neither of them	25	89.3	3	10.7	21	72.4	8	27.6
Total	1,379	61.5	864	38.5	1,407	63.1	824	36.9
	chi2 = 14.06 Pr = 0.003				chi2 = 3.11 Pr = 0.375			

*Note:* Percentages are of the total in each row. Question A3.1: What qualifications does the Care Manager/Care Coordinator in your facility have?

A second cluster of questions relate to the role that agency staff play in helping facilities to meet their need for a specific staffing profile and set of skills. Facilities that use agency staff are substantially more likely to report having a shortage of staff than those that do not. This is particularly true for a shortage of nurses: 83 per cent of facilities that employ agency nurses report having a shortage of nurses, whereas only 57 per cent of those who do not employ agency nurses report a shortage (table 6). Shortages are less common for personal carers, but the same pattern applies.

Table 6 - Proportion of Facilities With Skill Shortages by Whether Agency Staff is Used

<i>Residential facilities</i>	<i>Without agency nurses</i>	<i>With agency nurses</i>	<i>Without agency PCAs</i>	<i>With agency PCAs</i>
Registered and enrolled nurses	57.3 chi2 = 157.45 Pr = 0.000	82.5	61.1 chi2 = 49.60 Pr = 0.000	75.5
Personal care attendants	42.9 chi2 = 24.91 Pr = 0.000	53.6 chi2 = 76.61 Pr = 0.000	40.6	59.4

*Notes:* Shows only the proportion with skill shortages within 'without agency nurses' – so for example 57.3 per cent of facilities without agency nurses record a skill shortage [not shown is 42.7 per cent of facilities without agency nurses do NOT record a skill shortage]. Question B7.1: For each employee classification, please indicate whether you had skill shortages during the last 12 months.

This picture of agency staff being used to help manage a shortfall in employee numbers and skills is reinforced by the fact that facilities that use agency staff have a higher number of fulltime equivalent vacancies than those that do not. For example, those with agency personal carers report an average of 2.34 vacancies for employee PCAs, compared with 0.84 vacancies for facilities that do not use agency PCAs (table 7). They also reported taking a little longer to fill their vacancies for PCAs, but this is not statistically significant for nurses.<sup>11</sup> Those with agency personal carers report an average of 3.87 weeks to fill the most recent vacancy for employee personal carers, compared with 2.76 vacancies for facilities that do not use agency personal carers (table 8).

Table 7 - Average Number of Full-time Equivalent Vacancies by Whether Agency Staff is Used

<i>Residential facilities</i>	<i>Without agency nurses</i>	<i>With agency nurses</i>	<i>Without agency PCAs</i>	<i>With agency PCAs</i>
Registered and enrolled nurses	0.59 t = 7.64 Pr = 0.000	1.56	0.77 t = 3.52 Pr = 0.000	1.20
Personal care attendants	0.84 t = 5.78 Pr = 0.000	2.51	0.84 t = 5.94 Pr = 0.000	2.34

*Notes:* The mean in each group is shown. Question B8.1 As at the time of this survey, how many vacancies do you have in each classification?

<sup>11</sup> Because of the format of the questionnaires, we could not combine the information for registered and enrolled nurses for this question.

Table 8 - Time (weeks) Spent to Fill the Most Recent Vacancy for Registered Nurses, Enrolled Nurses and PCAs by Whether Agency Workers are Used

	<i>Residential Facilities</i>	
	<i>Without agency workers</i>	<i>With agency workers</i>
<i>Registered nurses</i>		
Mean	7.17	7.58
Standard deviation	58.6	21.0
	t = 0.19 Pr = 0.849	
Median	1	3
75% percentile	5	6
90% percentile	10	12
95% percentile	21	28
99% percentile	80	90
<i>Enrolled nurses</i>		
Mean	4.95	3.46
Standard deviation	45.5	8.2
	t = 0.87 Pr = 0.382	
Median	0	0
75% percentile	3	3
90% percentile	7	8
95% percentile	11	12
99% percentile	52	42
<i>PCAs</i>		
Mean	2.76	3.87
Standard deviation	9.4	9.5
	t = 2.63 Pr = 0.009	
Median	1	1
75% percentile	2	3
90% percentile	5	6
95% percentile	8	13
99% percentile	28	52

*Notes:* Question B8.2 Approximately how long did it take you to fill the MOST RECENT vacancy for employees in each classification? (weeks).

The main reason given for facilities using agency nurses (table 9) and agency PCAs (table 10) is that recruitment of employees is too slow, and they need specialist skills that have been hard to recruit. Facilities without agency staff more commonly thought the reason for their skills shortages arose from their geographical location. Regardless of whether they used agency staff, about a sixth of facilities felt the reasons for their skills shortages were lack of availability of adequate training and wage or salary costs were too high for the business. Only a very small proportion felt it was due to uncertain long term demand for their services. This last finding confirms that we are able to describe the context of aged care as reflecting a stable operating environment and this allows the conclusion that the results of our research do not reflect aspects of flexibility in staffing for addressing output or service fluctuations.

Table 9 - Sources of Skill Shortages at Facilities by Whether Agency Nurses are Used

<i>Sources of skill shortages</i>	<i>Residential Facilities</i>			
	<i>Without agency nurses</i>		<i>With agency nurses</i>	
	<i>Cases</i>	<i>Per cent</i>	<i>Cases</i>	<i>Per cent</i>
Specialist knowledge required	362	25.3	314	35.4
		chi2 = 27.06 Pr = 0.000		
Geographical location of facility	451	31.5	207	23.3
		chi2 = 18.02 Pr = 0.000		
Wages or salary cost too high for business	195	13.6	114	12.9
		chi2 = 0.28 Pr = 0.594		
Lack of availability of adequate training	231	16.1	153	17.2
		chi2 = 0.49 Pr = 0.486		
Unsure of long term demands for service	77	5.4	29	3.3
		chi2 = 5.59 Pr = 0.018		
Recruitment too slow	335	23.4	295	33.3
		chi2 = 26.83 Pr = 0.000		
Other	521	36.4	284	32.0
		chi2 = 4.66 Pr = 0.031		

*Notes:* Each per cent recorded for a group is a separate instance due to multiple coding. Question B7.2 Were these skill shortages due to any of the following? (cross all relevant boxes).

Table 10 - Sources of Skill Shortages by Whether Agency PCAs are Used

<i>Sources of skill shortages</i>	<i>Residential Facilities</i>			
	<i>Without agency PCAs</i>		<i>With agency PCAs</i>	
	<i>Cases</i>	<i>Per cent</i>	<i>Cases</i>	<i>Per cent</i>
Specialist knowledge required	362	24.9	305	36.0
		chi2 = 32.01 Pr = 0.000		
Geographical location of facility	482	33.1	166	19.6
		chi2 = 48.66 Pr = 0.000		
Wages or salary cost too high for business	187	12.9	117	13.8
		chi2 = 0.42 Pr = 0.518		
Lack of availability of adequate training	230	15.8	150	17.7
		chi2 = 1.38 Pr = 0.241		
Unsure of long term demands for service	67	4.6	38	4.5
		chi2 = 0.02 Pr = 0.891		
Recruitment too slow	338	23.2	287	33.8
		chi2 = 30.52 Pr = 0.000		
Other	526	36.2	282	33.3
		chi2 = 1.97 Pr = 0.160		

*Notes:* Each per cent recorded for a group is a separate instance due to multiple coding. Question B7.2 Were these skill shortages due to any of the following? (cross all relevant boxes).

When asked what the main strategies had been for solving skill shortages in the last 12 months (see table 11), regardless of whether they used agency workers, roughly a half of all facilities said that they relied heavily on asking their employee workforce to

work longer hours. However, for those that used agency workers, their main strategy for skill shortages was to make greater use of agency staff (about three quarters said they used this solution in the last 12 months), but only roughly a quarter of those facilities currently without agency workers used this strategy. Regardless of whether they had used agency staff in the recent past, facilities did not generally apply a solution of an increase in the immediate wage and employment conditions offered to regular staff (only about an eighth of facilities reported they had used this solution), nor a solution of employing additional staff on short term contract (roughly 13 per cent had applied this).

Table 11 - Solutions for Skill Shortages by Whether Agency Nurses or Agency PCAs are Used

<i>Sources of skill shortages</i>	<i>Residential Facilities</i>			
	<i>Cases</i>	<i>Per cent</i>	<i>Cases</i>	<i>Per cent</i>
<i>For nurses</i>	<i>Without agency PCAs</i>		<i>With agency PCAs</i>	
More use of external training of staff	280	19.6	185	20.9
		chi2 = 0.57 Pr = 0.451		
More use of on-the-job training of staff	517	36.1	311	35.1
		chi2 = 0.27 Pr = 0.602		
Existing workforce worked longer hours	738	51.6	435	49.0
		chi2 = 1.40 Pr = 0.236		
Made greater use of agency staff	343	24.0	664	74.9
		chi2 = 577.17 Pr = 0.000		
Sub-contracted or out sourced service	47	3.3	70	7.9
		chi2 = 24.25 Pr = 0.000		
Employed staff on short term contract basis	188	13.1	117	13.2
		chi2 = 0.00 Pr = 0.971		
Wages, salary and/or conditions increased	181	12.6	107	12.1
		chi2 = 0.17 Pr = 0.678		
Reduced outputs or production	41	2.9	27	3.0
		chi2 = 0.06 Pr = 0.804		
Other	355	24.8	112	12.6
		chi2 = 50.50 Pr = 0.000		
<i>For PCAs</i>	<i>Without agency PCAs</i>		<i>With agency PCAs</i>	
More use of external training of staff	288	19.8	173	20.4
		chi2 = 0.12 Pr = 0.725		
More use of on-the-job training of staff	511	35.1	311	36.7
		chi2 = 0.56 Pr = 0.453		
Existing workforce worked longer hours	741	50.9	435	51.3
		chi2 = 0.03 Pr = 0.864		
Made greater use of agency staff	381	26.2	614	72.4
		chi2 = 466.43 Pr = 0.000		
Sub-contracted or out sourced service	47	3.2	69	8.1
		chi2 = 26.96 Pr = 0.000		
Employed staff on short term contract basis	187	12.9	114	13.4
		chi2 = 0.16 Pr = 0.685		
Wages, salary and/or conditions increased	170	11.7	113	13.3
		chi2 = 1.34 Pr = 0.247		
Reduced outputs or production	39	2.7	26	3.1
		chi2 = 0.29 Pr = 0.590		
Other	335	23.0	129	15.2
		chi2(1) = 20.32 Pr = 0.000		

*Notes:* Each per cent recorded for a group is a separate instance due to multiple coding. Question B7.3 How were these skill shortages addressed in the last 12 months? (cross all relevant boxes).

### ***Characterising the Use of Agency Workers by Firms***

We report the result of the probit regression of agency worker use in table 12. Nurses and PCAs are reported in separate columns. The marginal effects are reported together with the standard error. Stars are used to indicate the t statistic test results, with levels of significance of one per cent (three stars), five per cent (two stars) and ten per cent (one star) reported. The reference groups are set as those with the largest sample share. The dependent variable is a dummy with one for using temporary agency workers, zero otherwise. Explanatory variables included are: Number of full-time equivalent vacancies, Weeks to fill the vacancy for RN and Weeks to fill the vacancy for EN in the nurses equation, Weeks to fill the vacancy for PCA in the PCA equation, dummy 'with skill shortages', Sources of skill shortages zero-one dummies (Specialist knowledge required, Geographical location of facility, Wages or salary cost too high for business, Lack of availability of adequate training, Unsure of long term demands for service, Recruitment too slow), Solutions for skill shortages zero-one dummies (More use of external training of staff, More use of on-the-job training of staff, Existing workforce worked longer hours, Made greater use of agency staff, Sub-contracted or out sourced service, Employed staff on short term contract basis, Wages, salary and/or conditions increased, Reduced outputs or production), Special duties dummies<sup>12</sup> (staff are ever required to: Work longer than scheduled due to unanticipated needs of residents, Work variations in hours or location at short notice, Work in very unsanitary conditions, Work with aggressive service users, Working alone late at night), Manager's qualification (Reference group is with nursing qualifications: With managerial qualifications, With nursing and managerial qualifications, With other qualifications), Ownership type (Reference group is not-for-profit: For profit organisation, Public organisation)<sup>13</sup>, Location (Reference group is Metropolitan: Inner regional area, Outer regional area, Remote area, Very remote area), Number of employees, dummy 'the facility is part of a larger organisation', dummy 'Also provides community based services', facility work related injury rate.

<sup>12</sup> Question B9 Are workers required to do any of the following as part of their job? Under normal circumstances, exceptional circumstances, never (cross one box per row – multiple response). We grouped normal and exceptional to represent 'ever' with a value of 1 in the dummy.

<sup>13</sup> This is an objective categorization drawn from the list sample administrative funding records describing the facility organization type held by the Department of Health and Aging. As a result it is a reliable definition. We group the original categories for analysis as: nonprofit= Charitable, Community Based, Religious; forprofit= Private Incorporated Body, Private Non-Incorporated Entity, Publicly Listed Company; public= Local Government, State Government. These are the same groups used for King *et al.* (2012) which found notable differences by these ownership types, with 56 per cent of direct care workers in not-for-profit (p.51), places in for profit and publicly owned are much more likely to be exclusively high care (p.53), and staffing ratios in not-for-profit facilities are lower than in for-profit facilities, which in turn are lower than in public facilities (p.55).

Table 12 - Residential Facilities: Determinants of Whether Using Temporary Agency Workers

	Nurses (N=1536)		PCAs (N=1968)	
	dy/dx	S.E.	dy/dx	S.E.
Number of full-time equivalent vacancies	0.062***	(0.01)	0.014***	(0.00)
Weeks to fill the vacancy for Registered Nurse	0.001	(0.00)	-	-
Weeks to fill the vacancy for Enrolled Nurse	-0.002*	(0.00)	-	-
Weeks to fill the vacancy for PCA	-	-	0.002*	(0.00)
With skill shortages	0.073*	(0.04)	0.084***	(0.03)
<i>Sources of skill shortages</i>				
Specialist knowledge required	0.000	(0.04)	0.020	(0.03)
Geographical location of facility	-0.085**	(0.04)	-0.052	(0.03)
Wages or salary cost too high for business	-0.091**	(0.04)	-0.018	(0.04)
Lack of availability of adequate training	-0.101***	(0.04)	-0.087***	(0.03)
Unsure of long term demands for service	-0.099	(0.07)	-0.021	(0.06)
Recruitment too slow	0.012	(0.04)	-0.009	(0.03)
<i>Solutions for skill shortages</i>				
More use of external training of staff	0.047	(0.04)	0.026	(0.03)
More use of on-the-job training of staff	-0.010	(0.04)	0.005	(0.03)
Existing workforce worked longer hours	-0.192***	(0.03)	-0.133***	(0.03)
Made greater use of agency staff	0.491***	(0.03)	0.399***	(0.02)
Sub-contracted or out sourced service	0.171***	(0.07)	0.180***	(0.06)
Employed staff on short term contract basis	-0.070*	(0.04)	-0.007	(0.04)
Wages, salary and/or conditions increased	-0.067	(0.05)	-0.048	(0.04)
Reduced outputs or production	0.011	(0.09)	0.094	(0.08)
<i>Ever part of the job</i>				
Work longer than scheduled	0.004	(0.06)	-0.029	(0.05)
Variations in hours or location at short notice	0.053	(0.04)	0.098***	(0.03)
Working in very unsanitary conditions	0.002	(0.07)	0.105	(0.06)
Working with aggressive service users	0.051	(0.04)	-0.009	(0.03)
Working alone late at night	-0.107**	(0.04)	-0.074**	(0.03)
<i>Manager's qualification (Reference group is with nursing qualifications)</i>				
With managerial qualifications	0.044	(0.08)	-0.020	(0.06)
With nursing and managerial qualifications	-0.045	(0.03)	0.014	(0.03)
With other qualifications	0.153	(0.23)	0.031	(0.11)
<i>Ownership type (Reference group is not-for-profit)</i>				
For profit organisation	0.010	(0.03)	-0.094***	(0.03)
Public organisation	0.001	(0.05)	-0.105**	(0.05)
<i>Location (Reference group is Metropolitan)</i>				
Inner regional area	-0.219***	(0.03)	-0.311***	(0.02)
Outer regional area	-0.255***	(0.04)	-0.314***	(0.02)
Remote area	0.108	(0.16)	-0.259***	(0.05)
Very remote area	-0.342***	(0.10)	-0.290***	(0.04)
<i>Other organisational characteristics</i>				
Number of employees	0.002**	(0.00)	0.001**	(0.00)
The facility is part of a larger organisation	0.082**	(0.04)	0.057*	(0.03)
Also provides community based services	0.063	(0.05)	0.059	(0.04)
Work related injury rate	0.025	(0.38)	-0.048	(0.23)

Note: The dependent variable is the probability of using temporary agency nurses/PCAs. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

For nurses, using temporary agency workers was associated with those facilities reporting a higher level of full-time vacancies (raising the likelihood by 6.2 per cent), and for facilities with skills shortages they were 7.3 per cent more likely to use temporary agency workers (but this is only statistically significant at the 10 per cent level). Facilities with more employees were slightly more likely to use temporary agency workers (0.2 percentage points more likely for each additional employee) and those part of larger organisations were eight per cent more likely to use temporary agency workers than those not part of larger organisation. The facilities that were metropolitan based were more likely to be using temporary agency workers. Facilities that said they had made greater use of agency workers to solve skills shortages in the last year were 49.1 per cent more likely, and those who had subcontracted out or outsourced a service to solve skills shortages in the last year 17 per cent more likely to use temporary agency workers. However facilities that made the existing workforce work longer hours when they had a skills shortage in the last year were 19.2 per cent *less* likely to use temporary agency workers. Where facilities had staff work alone late at night the use of temporary agency workers was 10.7 per cent less likely. Facilities that reported that their skills shortages were due to the geographic location of the facility were 8.5 per cent less likely, where it was reported the skills shortage was due to the wages or salary costs being too high for the facility were 9.1 per cent less likely and where the skills shortage was due to the lack of availability of adequate training they were 10.1 per cent less likely to use temporary agency workers.

Where there were statistically significant factors associated with agency worker use that were in common for nurses and PCAs, they were always in the same direction (reporting the same sign for the marginal effect). This supports a commonality in these factors for agency worker use for Nurses and PCAs.

In regard to PCAs, there were three factors that were influential for agency worker use which were not present for nurses: where the facility was a not-for-profit temporary agency workers were more likely to be used than any other solution type; and where it was reported that staff faced variations in hours or location at short notice they were 9.8 per cent more likely to use temporary agency workers. Whereas for nurses, when the facility found that their skills shortages were due to the geographic location of the facility, or due to the wages or salary costs being too high for the facility then outlets were less likely to use temporary agency workers, this was not the case for PCAs (but similar to nurses where they said the skill shortage was due to the lack of availability of adequate training they were 8.7 per cent less likely to use temporary agency workers).

For PCAs, using temporary agency workers was associated with facilities reporting a higher level of full-time vacancies (each additional vacancy raising the likelihood of temporary agency worker use by 1.4 per cent), and for facilities facing skills shortages they were 8.4 per cent more likely to use temporary agency workers. Facilities with more employees were slightly more likely to use temporary agency workers (0.1 percentage points more likely for each additional employee) and those parts of larger organisations were 5.7 per cent more likely to use temporary agency workers than those not part of larger organisation. Again, the facilities that were metropolitan based were more likely to be using temporary agency workers. Facilities

that said they had made greater use of agency workers to solve skills shortages in the last year were 39.9 per cent more likely, and those who had subcontracted out or outsourced a service to solve skills shortages in the last year 18 per cent more likely to use temporary agency workers. However facilities that made the existing workforce work longer hours when they had a skills shortage in the last year were 13.3 per cent less likely to use temporary agency workers. Where facilities had staff work alone late at night the use of temporary agency workers was 7.4 per cent less likely. Facilities that reported that their skills shortage was due to the lack of availability of adequate training were 8.7 per cent less likely to use temporary agency workers.

## 8. Discussion

We have characterised employers' use of temporary agency workers in a context without fluctuating output or service demand, and with tight labour markets, for both high skill and low skill occupations. We initially discuss the findings which seem common to both skill groups, and then discuss the differences that we found exist for high skill and low skill occupations. Where relevant, we also place our findings in the context of the empirical literature on the reasons for employers' use of temporary agency workers.<sup>14</sup>

In an extension not possible in the earlier work by Ono *et al.* 2013, we have been able to explore firms' reasons for agency worker use and the context of skills shortages together with the firm characteristics, within an isolated context of a single industry and hence a reduced set of motives for using agency workers. We find that temporary agency workers are used by firms to solve skills shortage issues, but not all types. Facilities with skills shortages were between seven and eight per cent more likely to use temporary agency workers, and for each additional vacancy the facility was more likely to use temporary agency workers by six per cent when it was a nursing (high skilled) vacancy but one per cent for a PCA (low skilled) vacancy.<sup>15</sup> With regard to solutions applied for their skills shortages in the last year, we found that when they had made greater use of agency staff or had subcontracted out services, facilities were more likely to use temporary agency workers now. We find that the use of temporary agency workers is between eight and ten per cent less likely when the source of the skills shortage is due to the geographic location of the facility, (which perhaps fits with the subsequently discussed picture of metropolitan facilities being more likely to use temporary agency workers as a result of local labour markets in their location and the potential urban concentration of agencies).

Our results are consistent with some of the findings of Houseman (2000, 2001). We would expect some deviation from their findings since their research was for all occupations/industries whereas ours is intentionally limited in order to allow more specificity. Also, their findings are for the US and ours for Australia, and some of

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<sup>14</sup> We are unable to compare to the AWIRS analysis of Laplagne *et al.* (2005) as there are no similar variables.

<sup>15</sup> While this is discussed here as a commonality for high and low skills in that the number of vacancies raises the likelihood of using temporary agency workers, the very different sizes are also discussed as part of the differential characterisation for high and low skill occupations.

<sup>16</sup> Unionisation is not present in our data nor a variable corresponding to 'good benefits for their regular staff'.

their modelling variables are not present in our study or are irrelevant for our context.<sup>16</sup> Our results confirm the general findings of Houseman (2000, 2001) that temporary agency workers usage was more likely for firms with larger employee numbers, while less likely for firms in a rural area location.<sup>17</sup> Mangum *et al.* (1985) also found large firms more likely than small firms to use temporary agency workers. Davis-Blake *et al.* (1993, p.217) found the broader general group of temporary workers more likely to be used by large rather than small firms and suggested that perhaps large firms may be more able to afford the more expensive externalisation while smaller firms might try to manage temporary staff themselves. We find that larger, metropolitan facilities and those that are part of a larger organisation are more likely to employ agency staff. While there are some differences in degree, the pattern applies to both nurses and PCAs. Ono *et al.* (2013, p.433) also found in the US manufacturing context that large and urban firms and those facilities part of a larger firm were more likely to use temporary agency workers. They suggest the association with large firms might be related to fixed costs associated with temporary workers, such as negotiating with the agency. They also link being part of a larger organisation to the fixed costs, with the fixed costs spread and so making the cost of using temporary agency workers smaller. They plausibly propose that the urban association with agency worker use might reflect the aspects of the immediate local labour markets for temporary workers around the firm location, such as the local unemployment rate,<sup>18</sup> and the local concentration of agencies affecting the demand for and supply of agency workers to that location, Ono *et al.* (2013, p.438). This latter result seems to reflect the 'market making' role of agencies, Coe *et al.* (2010, p.1064). Coe (2010) points out that the very existence of agencies reshapes the norms and expectations of firms and of workers. While temporary staffing agencies are profit businesses, they are often seen as neutral intermediaries matching supply of labour with demand from employers, contributing to efficient functioning of the labour market, Mangum *et al.* (1985); Coe *et al.* (2010). However, Peck and Theodore (2002), and more directly Coe *et al.* (2010, p.1063) point out that agencies supply a particular form of labour market flexibility in mediating between supply and demand, and hence play a role in the construction and making of labour markets.

In our aged care example of a sector where there is stable demand, employment growth and skills shortage, our findings thus probably reflect several aspects of the Australian labour markets: (1) The forms of work available in a local labour market reflect the demand and supply of each type of working arrangement, mediated by the institutional factors, with the firms seeking the most cost-effective outcome and workers maximising their well-being, Shomos *et al.* (2013). Recruitment and matching of workers and training are key costs in the process of engaging workers. Shomos (2013, p.20) points out that agency workers could be preferred because their agency benefits from economies of scale in recruitment and selection. Recall also that Brennan *et al.* (2003) found that 60 per cent of Australian agency workers would prefer to be

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<sup>17</sup> Their industry seasonality findings are not relevant for our context where our findings confirm that facilities did not think that skill shortages they faced were due to uncertain demand for their services – see tables eight and nine earlier.

<sup>18</sup> As Australia had a very low unemployment rate below six per cent during the period the data reflects, then rather than unemployment, it likely reflects the supply to agencies of those wishing to change employment due to urban population density.

employed directly. Additionally, 54 per cent of agency workers stated that their reason for using an agency was the ease of obtaining work via an agency (ABS 6359.0, p.49 table 17). Taken together, this points towards inefficient matching in the Australian labour market for both the firm and the worker where agencies can provide a solution, despite the premium to the firm and the wage penalty to the worker and the availability of casuals. This does not preclude the agencies' 'market making' role. (2) Such hiring costs are higher when it is difficult to observe a person's skills. It is acknowledged that caring role skills to a large extent are personality dependent, involve successful teamwork, Martin (2007), and are accordingly hard to observe before work is started which means that signals such as training qualifications (which are quick and cheap to check) can be less relevant. This also fits with our finding that agency workers (nurses or PCAs) are less likely to be used when the source of the skills shortage is lack of availability of training. (3) A large component of the aged care sector is multi-site where about three quarters of facilities are part of a larger organisation, King *et al.* (2012, p.56 table 4.5) and anecdotal evidence suggests that many have a single head office HR. As a result, the local facility effectively has no local HR. The services of agencies are more likely to be cost-effective when there is no in-house HR capacity for managing local temporary 'relief' roles, Shomos *et al.* (2013, p.20) – see further below where we reflect subsequently that it appears from our findings that agency workers are used to offer 'relief' for the internal staff, at least partly.

In considering the nature of the job and workplace practices, we found that the use of temporary agency workers is between seven and eleven per cent less likely where the workplace had staff working alone late at night. One aspect it might represent is the observed aspect of agency workers needing to be informally supervised by the internal staff, Allen (2000, p.199), and this is less possible if staff work alone at night. We speculate that this may also be a reflection of the need/desire to address occupational health and safety considerations in residential aged care in order to achieve quality accreditation (see earlier in section 5). There is some Australian literature about the use of temporary agency workers and poor occupational health and safety, Johnstone and Quinlan (2006); Quinlan *et al.* (2014). Although we note that contrary to Quinlan *et al.* (2014) the workers in this analysis are in residential care rather than community/home-care. If our finding indeed reflects such a staffing strategy of avoiding agency use where staff work alone, then our additional finding that the work related injury rate of the facility is not related to the use of agency workers, for nurses or PCAs, suggests it may be working and that it may be a useful remedy not to allow agency workers to work alone in care roles.

In examining the factors influential for low skill and high skill occupations, there were some key differences observable.

For the high skill occupation of nursing, where the skills shortage was due to the geographic location or due to salary costs being too high for the business, then temporary agency workers were less likely to be used. This concurs with the findings for Ono *et al.* (2013, p.438) that manufacturing plants requiring high-skill workers were less likely to use temporary agency workers. Our finding about the salary costs being too high for the business gives some empirical support to the Ono *et al.* observation that lower use of agency workers for high skill occupations was perhaps due to the higher margin paid by firms to agencies for high skill than for low skill agency

workers. Supporting this further, Houseman (2003) found in the hospital setting that for high skills occupations, employers would pay more for agency workers than for regular employees mainly to gain extra recruiting time for permanent positions, hence avoiding wage rises for new hires and existing employees. It also supports suggestions that the use of agency workers is related to pressures on labour costs, Forde and Slater (2006, p.150). As set out earlier in the background section, aged care in Australia is labour intensive with public funding acknowledged to be limiting (staffing) budgets, Productivity Commission (2011); Kaine *et al.* (2013).

For the low skill occupation of PCA, there was a difference in the degree to which agency workers were more likely to be used compared to the high skill occupation of nursing, as represented by the scale of the marginal effect: when there was a vacancy, facilities were only 1.4 per cent more likely to use agency workers for each PCA vacancy (but 6.2 per cent for nurses); if they had used agency staff during the last year to solve skills shortages then they were only 39.9 per cent more likely to use agency PCA workers, (but 49.1 per cent for nurses); and where they reported the existing workforce had worked longer hours during the last year they were only 13.3 per cent more likely to use agency PCA workers (but 19.2 per cent for nurses). Hence, for these aspects, the use of agency workers was raised to a lesser degree for the low skill occupation than for the high skill occupation.

There were also two factors which influenced the use of agency workers only for the low skill occupation of PCA: where the staff worked variations in hours or location at short notice, this led the use of temporary agency workers to be 9.8 per cent higher; and where it was a not for profit organisation, then the use of temporary agency workers was higher.

There also seems to be some aspect of offsetting capacity in the regular staff hours of work (underutilisation or overtime use) that ameliorates the use of temporary agency staff and when this is present the use of temporary agency workers is lower. Facilities that made the existing workforce work longer hours when they had a skills shortage in the last year were between 13 and 19 per cent less likely to use temporary agency workers. This suggests that temporary agency workers may substitute for the existing workforce working longer hours. This concurs to an extent with the finding by Lautsch (2002) that agency workers were sometimes used to protect internal employees from fluctuating needs. Not-for-profits might be willing to go to greater lengths to protect their internal employees, to maintain their commitment or social responsibility for them.

In common with the Houseman *et al.* (2003) case studies, we found that the factors influencing a facility's use of temporary agency workers differ between high and low skill workers (although there is a set which are in common). We found that firms were much more likely to have used agency workers for high skill (nursing) vacancies than for low skill PCA vacancies. While the use of agency workers was more likely for high skills (nurses), it still occurred for low skills (PCAs). We also found that there were some factors which had a much smaller scale in affecting the degree of how likely employers were to use agency workers for the workers of low skill rather than high skill. However we were unable to directly address the wages/benefits aspect in these data. Indirect evidence, which gives only a cursory insight into this aspect, is found where the skill shortage is deemed to be due to 'wages or

salary costs too high for the business': for the high skill occupation of nurses, where this was the case, the use of agency workers was nine per cent lower but there was no significant influence detected for the low skilled occupation of PCAs. This might also have some bearing on the Laplagne *et al.* (2005) findings, where it reflects the flipside of their finding that when it was a low wage workplace relative to others in the same industry then agency worker use was less likely. Facilitating numerical flexibility via low skill peripheral roles was seen in early literature as the chief motive for using agency workers, Purcell (1998), Davis-Blake *et al.* (2003). However our findings were undertaken in an environment which precludes the issue of numerical flexibility and would accord more with the more recent HR literature suggesting agency worker use is a long term skills supply strategy that enables organisations to remain viable, Holst *et al.* (2010); Håkansson (2012); Håkansson (2013). In the context of aged care, as set out in the background section, providers frequently cite inadequate funding, Kaine *et al.* (2013, p.39) and operate a labour intensive activity but need to meet minimum standards of care which can set rostering ratios of qualified staff.

In the context of the Stanworth *et al.* (2006) findings, we find that the employer decision to use temporary agency workers appears to be deliberate planned. We find agency worker use is limited in the influence of only some aspects of staffing skills shortages, and while aged care facilities of all types use agency workers, the analysis shows that some types have a higher propensity to use agency workers than do others. We also find that the use of temporary agency workers in this aged care context appears to be for supplementing a regular workforce (rather than substitution of them) – only about half of facilities had agency workers in use during the survey reference fortnight (only two fifths had agency workers for the nurses and PCA) and only some types of firms have a higher propensity to use agency workers than do others. We found that firms were more likely to use agency workers now if they also subcontract or outsource services. This indicates a conscious decision to adopt this HR strategy of externalisation.

## 9. Conclusions

Our finding is that temporary agency workers are used to solve skills shortage issues, but not of all types. This result echoes the general qualitative finding of the earlier Brennan *et al.* (2003, p.18) Australian general survey that their use '...seems targeted and specific rather than being a broad widespread strategy'. However, we provide substantive analysis to support this result. We have been able to add focus to that qualitative story with use of a survey of a single sector, which allows emphasis on a particular constrained worker supply context and by modelling to account for the linkages between firm characteristics and agency worker use.

By and large, the results from this study are partly expected given that some previous studies found similar results. This research does however make a number of unique contributions to the study of firms' use of agency working. By isolating from demand fluctuations/firing-costs/numerical flexibility, we have been able to concentrate on the remaining firm motivations for temporary agency workers and have identified labour costs and reduction of labour recruitment costs. This suggests that some of the aspects of transferring responsibility to the agency confer valuable benefits to the firms as it mitigates costly issues of recruitment, payroll administration and managing employee benefits.

We find evidence that agency workers appear to be used in some cases as temporary workers brought in to alleviate workload/roster issues for the internal workers. Agency workers appear to be used to avoid some issues involved in transferring the legal responsibility of employment indirectly, such as occupational health and safety. We find evidence to support the view that the use of agency workers is part of a deliberate strategy of externalisation, often combined with outsourcing of services. The finding that those facilities which are larger, urban and those part of a larger organisation are more likely to use agency workers may be a manifestation of the market-making role of agencies concurrent with the agency costs aspects already discussed. We conclude that there are some attributes of the Australian aged care 'managed market' funding constraints which might encourage agency worker use for these types of firms.

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