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Lone parents and employment: an exploration of findings from the Families and Children Study 2006-08

by Wojtek Tomaszewski, Jenny Chanfreau and Matt Barnes

DWP Department for Work and Pensions

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1 Introduction

Over recent years there have been a number of policy initiatives aimed at increasing the employment rate for lone parents. Understanding the obstacles to employment for this group, as well as assessing the impact of interventions, has been the subject of much research conducted by the Department for Work and Pensions (DWP). This includes the current and ongoing evaluation of Lone Parent Obligations (LPO) and the Employment Retention and Advancement (ERA) Demonstration.[1]

In order to better understand some of the key issues for **all** mothers in combining paid work and parenting DWP and the National Centre for Social Research (NatCen) developed in 2006 a series of questions for use on the Families and Children Study (FACS) known as the 'Choices and Constraints' question set (Collins *et al*., 2006).[2] These questions were administered to mothers, both in and out of work in FACS Waves 8 to 10 (2006-08).

The findings presented in this working paper refer to the FACS data for lone mothers[3] only and it is the first time that the Choices and Constraints set has been analysed longitudinally. One reason for conducting this analysis was to contribute to the wider evidence on lone mothers' decisions regarding employment. However, given that this question set will be used in future research projects, including the LPO evaluation, the analysis was also commissioned to inform how longitudinal data emerging from LPO might best be explored. For this reason this working paper also contains technical detail describing the analysis process itself.

1.1 Background

The rise in child poverty in the decade leading up to 1999 has, in part, been attributed to the increase in workless lone parent households. Research has consistently pointed at parental worklessness as a key factor increasing the risk of poverty, particularly for children of lone parents (Dex and Ward, 2007; Barnes *et al*., 2008; Tomlinson and Walker, 2010).

A number of policies have been introduced over the past decade to support workless lone parents in entering the workplace, both voluntary and mandatory. Most recently the mandatory LPO programme, announced in the Green Paper *In Work Better Off: Next Steps to Full Employment* (DWP 2007) introduced conditionality to the benefits entitlements of lone parents when their youngest child reaches the age of 12 (from 2008) and decreasing to seven years in October 2010. The age limit will be further reduced to five years from early 2012. Under LPO lone parents are required to demonstrate that they are actively seeking employment and are available to start working (except for certain groups of lone parents, such as those with disabilities, or those caring for a disabled child). This has involved transferring parents from Income Support (IS), an inactive

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1 The ERA Demonstration project tested the combined effectiveness of personalised in-work support and financial incentives in helping lone parents and the long-term unemployed sustain and progress in employment. The programme was launched in 2003 as a large-scale Randomised Controlled Trial and the final assessment of ERA is due to be published in spring 2011.

2 Collins, D., Gray, M., Purdon, S. and McGee, A. (2006) Lone parents and work: developing new survey measures of the Choices and Constraints. DWP Working Paper No 34.

3 The vast majority of lone parents are lone mothers and this proportion is even higher among lone parents on benefits. (95 per cent of lone parents on IS with a youngest child of seven – LPO Wave 1 2010).

benefit, to Jobseeker's Allowance (JSA), an active one. These changes coincided with an increase in childcare places as research evidence has repeatedly demonstrated that the absence of suitable childcare is a key barrier to work (La Valle *et al*., 2008; La Valle and Smith, 2009; Skinner, 2003).

For many lone parents transition into employment poses a number of difficulties and presents them with uncertainty about the future. Understanding the ways in which the decisions about moving into work are made, and how constraints and barriers to employment are perceived, is important in ensuring that the transition is successful and beneficial for lone parents as well as for their children and, ultimately, that the employment is sustained.

The Choices and Constraints question set was developed in 2006 in an attempt to understand the complex and overlapping issues that mothers face when making decisions about work and childcare and in order to address some perceived limitations with existing methods of identifying 'barriers to work' in surveys. It was informed by a number of issues that had been identified, amongst them:

- the notion of a 'barrier' that could be 'overcome' seemed inappropriate, as in many cases it appeared that the same factors could affect those who had got a job. Hence, there was a need to allow for the fact that the respondent may 'manage' a factor;
- a better way was needed to ask hypothetical questions about the future, since some respondents may not have given much thought to work, and might have little concrete idea of the sort of job they might do in the future;
- previous analyses tended to be limited to frequency counts, with the reporting discussing the ranking of the factors mentioned by sample members and this fell short of giving useful insights into the inter-relations among issues affecting work choices.

1.2 Aims of the project

A number of factors may affect lone mothers' decisions regarding work, including the availability of childcare, perceived job security and the potential for flexible working arrangements. To make a successful transition into employment, and for the work to be retained, it is important that lone mothers see the transition as an achievable option and one that is beneficial, both for themselves and for their children.

The overarching aim of this project is, therefore, to explore how the Choices and Constraints question set, in combination with other data from FACS, might improve our understanding of the processes affecting lone mothers' decisions about employment, as well as their attitudes towards working. This question set has to date delivered some very rich data which could be explored in a number of ways. In consultation with DWP colleagues, three main areas of interest were identified:

- **Work entry** – which factors, including those represented by the Choices and Constraints module, increase the likelihood of non-working lone mothers' moving into employment (explored in Model 1).
- **Work retention** – the drivers of work retention, including those represented by the Choices and Constraints question set (Model 2).
- **Changes in attitudes** – how the transition into employment might affect lone mothers' attitudes towards work and parenting (Model 3).

These questions and the models adopted in the analysis have been informed by an existing body of research. Choices about combining parenting responsibilities and paid employment are dependent on both internal influences, including how the woman construes her own identity as a mother

(Himmelweit and Sigala, 2004) and external factors such as family circumstances, social attitudes and norms, policies and transport links. The Choices and Constraints question set aims to capture respondents' perceptions of both these internal and external influences.

Mothers' return to work is often not permanent and research shows that lone mothers are less likely than coupled mothers to experience a permanent return to work (Brewer and Paull, 2006). Qualitative research supports this: only a minority of lone mothers were still in the same job with the same working hours 12-18 months after leaving IS and moving into employment (Millar and Ridge, 2008). Interviews with lone mothers and their children have shown that the children, and in some cases extended family, have an important role to play in the mother's job retention. Children can influence the terms of their mother's employment, including working hours. Some children resist some types of childcare while others take on new responsibilities to support their mother's working (Millar and Ridge, 2008; Ridge, 2009). The analysis presented here uses the Choices and Constraints questions to improve our understanding of the factors increasing the chances of job retention among lone mothers who move into employment.

The relationship between mothers' attitudes towards caring and working on the one hand, and their employment on the other, is complex. While attitudes affect employment decisions they can also adjust to both changes in the mother's own behaviour and, in the longer-term, to changes in social norms. Himmelweit and Sigala (2004) reported findings from both qualitative interviews and secondary analysis of the British Household Panel Survey (BHPS), which indicate that when a conflict arises between the mothers' attitudes and their working behaviour, they either adjust their attitudes or their behaviour.[4] Accordingly, analysis conducted for this working paper investigates whether lone mothers' attitudes towards work and child-rearing change as a result of entering work. Of particular interest is whether those who had held attitudes which conflicted with working changed their attitudes following their entry into employment.

1.3 Overview of the report

Chapter 2 begins with a brief presentation of the FACS dataset and the Choices and Constraints question module. There follows a discussion of the methods used, with a specific emphasis on the Structural Equation Modelling (SEM) framework. The chapter ends with a description of the main variables used in the statistical models presented in this report.

Chapter 3 describes the findings of the analysis, focusing in turn on the characteristics of lone mothers who obtained paid work, the factors behind work retention, and changes in attitudes about parenting and employment following movement into work.

Chapter 4 summarizes the results and discusses the main implications for policy. It also reflects on the limitations of the current study and outlines possible directions for future analysis, in particular forthcoming longitudinal data from the LPO evaluation.

Appendices to the report present the technical elements of the research in greater detail, including formal descriptions of the statistical models and terminology, as well as tables including full results of the estimated models.

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[4] Their analysis of BHPS showed that of the employed mothers who reported the belief that pre-school children suffer if their mother works, 46 per cent had changed their attitude within two years while 29 per cent had given up employment.

2 Data and methods

This chapter provides an overview of the FACS data and briefly describes the content of the Choices and Constraints question module. This is followed by an overview of the analytical methods used, with an emphasis on the presentation of SEM, a statistical framework that plays a crucial role in this study. The chapter concludes with a description of some key characteristics of lone mothers used in the statistical models presented here, including measures of their attitudes, perceptions and intentions derived from their answers to the Choices and Constraints question set.

2.1 Data

The FACS is a panel survey of around 7,000 families with dependent children in Britain. Face-to-face interviews were carried out on an annual basis between 1999 and 2008. The main respondent was, in most cases, the mother or 'mother-figure' in the family. The data covers a wide range of issues including health, education, income, labour market activity, childcare, child maintenance, housing and material deprivation.

The Choices and Constraints question set comprises of the following three elements:

- An initial self-completion exercise on attitudes to parenting, childcare, work and related issues.[5]
- Questions about future intentions, including the title of a job that the respondent considers a possibility for the future.
- A card sort exercise in which a set of factors is sorted according to whether each factor is perceived as a 'big factor', 'a smaller factor' or 'not a factor' in their decisions about work. In addition, respondents are asked to identify the biggest factor in their situation and any other factors that were not on the cards.

While the full FACS sample is representative of the general population of families with children, the Choices and Constraints questions were only asked of a limited set of respondents, namely those mothers who were not working but who hoped to work in the near future and those who had moved into work in the recent past. This has implications for the number of cases available for analysis, especially, when only single mothers are taken into account. The number of lone mothers who answered the Choices and Constraints questions in Waves 8, 9 and 10 of FACS, was 877, 805 and 758 respectively.

To date the Choices and Constraints module has been used on two other occasions in the DWP maternity rights study (2007 and 2009)[6] and, as previously mentioned, is also a core element of the LPO longitudinal survey, where it was administered in the first wave in 2010. It is anticipated that future studies will also make use of the questions. With FACS data now available this is a timely opportunity to examine how well the questions have performed in practice. A study by D'Souza *et al*., (2008) reported on several analyses of the data for all mothers collected in 2006 (Wave 8), the first year the module was used in FACS. This working paper extends this previous study by looking at data from **all three waves** where the Choices and Constraints question set is available, and by using a different methodology, namely SEM. Moreover, the current study explicitly tests the relations between attitudes, work orientation and actual behaviour (work outcomes), as suggested by Collins *et al*., (2006, pp. 29-30).

5 Development of the attitudinal statements was based on the work of Bell *et al*., (2005), which offered a typology of mothers' orientation towards work and child care.

6 See La Valle *et al*., (2008).

2.2 Structural Equation Modelling

SEM will be used to identify the structure underpinning mothers' choices and constraints and to model relationships between its elements and work outcomes. SEM serves purposes similar to regression models but is a more powerful technique, capable of modelling relationships between latent constructs, such as attitudes or perceptions. The underlying principle of SEM is that of developing a theoretical model, whereby hypotheses regarding the effects and relationships of different factors are informed by the existing literature and then assessing how well the data fit this theory (Williams and Walker in Collins *et al.*, 2006).

SEM has a number of advantages compared to simpler methods. These include more flexible assumptions, the facility to test conceptually-driven models and the facility to assess the goodness of fit between the theoretical model and the empirical data. In addition, models with multiple dependent variables can be tested, mediating variables and indirect effects of variables can be modelled, error terms can be modelled explicitly and the relative fit of different models can be compared.[7]

One particularly attractive feature of the SEM is its capability to test both **direct** and **indirect** effects. Using this feature, we will be able to decompose the total effect of background characteristics of lone mothers into the part directly affecting their work outcomes (for example, long-term labour market inactivity **directly** decreasing chances of re-employment) and the part that affect work outcomes in an **indirect** way, through strengthening certain attitudes or perceptions that lone mothers may have (for example, long-term labour market inactivity strengthening negative attitudes towards employment, which in turn decreases the chances of reemployment). Consequently, using the SEM framework should enable us to gain greater insights into the complexity of processes driving lone mothers' decisions about work than other analytical methods used previously.

Due to its complexity, SEM is a relatively labour-intensive and time-consuming method and requires specialist software to carry out the analysis. All the models presented in this report were estimated using Mplus software in version 5.

2.3 Variables used in the SEM model

2.3.1 Factors representing the Choices and Constraints questions

As outlined in Section 2.1, the Choices and Constraints questions comprise of three sections, namely, 'attitudinal questions', 'factors affecting work decisions' (the card-sort exercise) and 'intentions for the future'. Throughout the report, we refer to these sections in turn as *Attitudes, Perceptions and Intentions*, respectively. The overall module contains 32 attitudinal questions and 19 perception items asked in the card-sort exercise.[8] Following preliminary analyses, several attitudinal questions were excluded from this study, such as the questions less applicable to lone parents, like those asking about their partners' attitudes. Table 2.1 presents the final list of questions included in this study.

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7 See Appendices A and B for technical details of the models, description of methods for assessing the quality of the model and examples comparing different models.

8 The 19 card-sort items are presented to non-working respondents; in the case of the respondent being employed they are given 18 cards to sort, some of which are different from the items in the 19-card set; see D'Souza *et al.*, (2008) for details.

Table 2.1 Factor structure underlying the attitudinal questions in the choices and constraints question set

Factor	Item code	Attitudinal questions	Item label
A1	Att5	Having almost any job is better than being unemployed	
	Att4	Once you've got a job, it's important to hang on to it, even if you don't really like it	
	Att6	Having a job is the best way for me to be an independent person	
A2	Att26	It's always better if the parent can look after the child themselves	
	Att18	Children under five are happiest being looked after by their parents	
	Att31	Children do best if their mum stays home to look after them	
	Att28	I always thought that if I had children I would stay at home and look after them	
	Att7	If you work when your children are little you will miss out on seeing them grow and develop	
A3	Att2	If you live on social security benefits, everyone looks down on you	
	Att27	Stay-at-home mums are not valued by society	
	Att13	It's not possible to put your children first and work	
	Att23	Combining work and family brings more problems than benefits	
	Att9	The Government expects all lone parents to work	
A4	Att15	I might get a job one day but looking after my children is what I want to do now	
	Att16	My job is to look after the home and family	
	Att25	A job is all right, but I really want to be with my children at home	
	Att11	Most of my closest friends think mums should stay at home and look after their children	
A5	Att22	Working mums provide positive role models for their children	
	Att24	Working mothers have the best of both worlds	
	Att8	I have always thought I would work	
	Att32	Most of my closest friends think mums should go out to work if they want to	
	Att10	Working for pay is more fulfilling than looking after the home and family	

Continued

Table 2.1 Continued

Factor	Item code	Card-sort questions	Item label
P1	Csa1	My child/children wouldn't like me to work	
	Csa7	I want to look after my child/children myself or at home	
	Csa9	I am worried I will not have enough time with my child/children	
	Csa17	I am not prepared to leave my child/children in the care of anyone other than my family or close friends while I work	
P2	Csa14	I would need a job where I could take time off at short notice to look after my child/children	
	Csa13	There isn't enough suitable, affordable childcare around here	
	Csa15	Employers aren't very family-friendly	
	Csa16	My family or close friends are not able, or live too far away, to provide childcare	
P3	Csa12	I am not sure I would be financially better off in work	
	Csa4	There are few suitable job opportunities in the local area	
	Csa10	I haven't got the qualifications or experience to get the kind of job I would want	
	Csa3	I would have problems with transport to and from work	
	Csa18	I am concerned about leaving the security of benefits	
P4	Csa6	My confidence is low at the moment	
	Csa19	I have personal or family troubles that need to be sorted out	
	Csa5	I have difficulties due to my health condition or disability	
	Csa8	I care for someone who has a health condition, disability or behavioural difficulties	
	Csa2	My parent/parents wouldn't like it if I worked	
	Csa11	My husband/partner/ex-partner would not like it if I worked	

The number of items in the Choices and Constraints module is too large to be used as individual variables in statistical models and some kind of aggregation is needed to simplify the structure. Furthermore, many of the Choices and Constraints questions were deliberately designed to tap at the same underlying dimensions, while being asked in a different way.[9] Therefore, as a first step of investigation we carried out Factor Analysis (FA) to identify the underlying structure of **attitudes** and perceptions of non-working lone mothers.[10] The optimal solution of this analysis suggested nine factors: five for **Attitudes** and four for **Perceptions** and Table 2.1 shows how the final subset of Choices and Constraints questions has been mapped onto those nine factors.[11] These factors, together with one item within the domain of **Intentions** – the intention to work, will form the core of the models built using the SEM framework in subsequent analyses.

9 By asking a number of questions tapping at the same issue we can reduce error associated with respondents' mistakenly giving a wrong answer to a particular question.

10 It is worth noting that FA is not the only approach that can be used to concentrate down the structure of the Choices and Constraints questions. For example, D'Souza *et al.*, (2008) used Latent Class Analysis (LCA) to model the structure behind Perceptions (the card-sort questions). This alternative approach was also tested at an initial stage of this study and the details of these tests can be found in Appendix B. Following consultations with DWP colleagues, it was decided that the approach where attitudes as well as perceptions are modelled using the FA should be taken forward in this study.

11 If this approach is repeated using different data the analysis might suggest a different solution. For example, it is possible that a more refined classification will be suggested if the analysis is run on a bigger sample, such as the one used in LPO.

An important part of the FA approach is the interpretation of the obtained factors. Table 2.2 presents our attempt to describe the factors identified by the modelling and introduces labels that will be used to refer to the factors in due course. However, it needs to be stressed that any such interpretation is unavoidably somewhat subjective, especially where many of the questions are tapping at similar attitudes and their meanings overlap. The table also includes a 'defining statement': the item most strongly associated with a given factor. The proposed labels and defining statements represent short, but inevitably simplified, descriptions of the factors – the full spectrum of underlying attitudes can only be assessed by examining all items associated with a given factor, as presented in Table 2.1.[12]

Table 2.2 Simplified set of key factors underpinning the Choices and Constraints question set identified by Factor Analysis

Attitudes		
Factor code	**Factor label**	**Defining statement**
A1	Motivation to work	Having almost any job is better than being unemployed
A2	Motivation towards parenting	It's always better if the parent can look after the child themselves
A3	Social stigma of staying at home	Stay-at-home mums are not valued by society
A4	Parenting as a job	My job is to look after the home and family
A5	Motivation towards combining work and parenting	Working mothers have the best of both worlds
Perceptions		
Factor code	**Factor label**	**Defining statement**
P1	Parenting as a choice	I want to look after my child/children myself or at home
P2	Childcare concerns	I would need a job where I could take time off at short notice to look after my child/children
P3	Job concerns	I am not sure I would be financially better off in work
P4	Personal/family constraints	I have personal or family troubles that need to be sorted out
Intentions		
Code	**Question**	
Intent	Whether mother thinks she would work over the next 12 months	

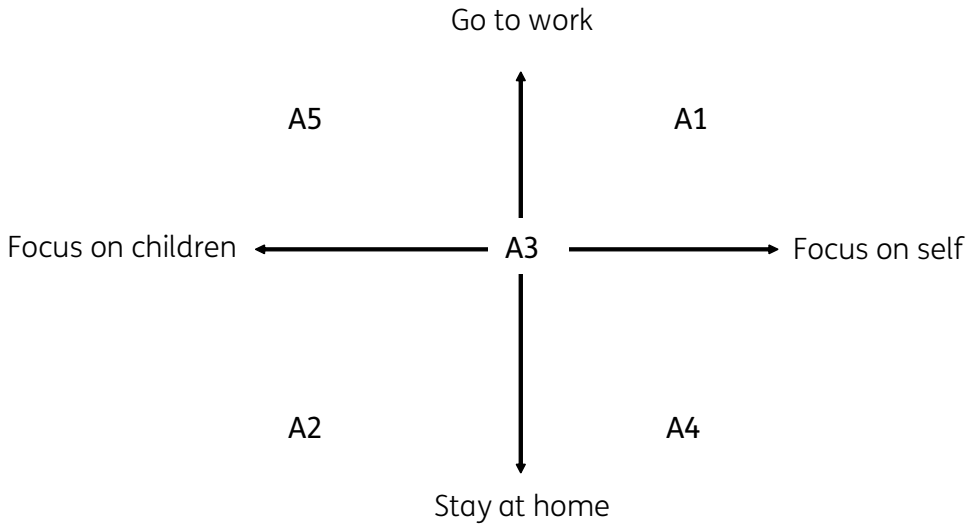
In Table 2.2 some of the factors underpinning attitudes are related to work, while others focus on parenting but the distinction is not clear-cut. There are two factors that could be described as reflecting pro-employment attitudes: **motivation to work** (A1) and **motivation towards combining work and parenting** (A5). A key difference between them is that while the latter seems to capture positive views on how mothers' work may affect children, the former is solely concerned with personal motivation towards employment, without reference to their role as a mother (see Table 2.1). Two of the attitudinal factors could be described as related to parenting: **motivation towards parenting** (A2) and **parenting as a job** (A4).[13] However, while the first of them (A2) is primarily

[12] For instance, the defining statement for the 'job concerns' factor P3 does not reflect the fact that the factor captures not just the financial concerns but also other practical issues, such as availability of suitable jobs in the local area.

[13] D'Souza *et al.*, (2008) found a similar set of attitudes, which they simply called 'parenting', as well as a class of parents labelled 'carers by choice', both of which are likely to capture a similar group of lone mothers as those indicated by factor A3.

concerned with how children can benefit from the mother's staying at home, the other (A4) is focused more on the mother herself. The last of the attitudinal factors, **social stigma of staying at home** (A3), is quite different from the others as it is mostly concerned with social perceptions of mothers' staying at home. Based on this description, Figure 2.1 presents the five main attitudinal factors mapped along two axes: one representing the 'go to work' compared to 'stay at home' opposition, the other distinguishing between children-focused and self-focused attitudes.[14]

Figure 2.1 Schematic representation of the factor structure underlying the attitudinal questions



KEY: A1 - Motivation to work; A2 - Motivation towards parenting; A3 - Social stigma of staying at home; A4 - Parenting as a job; A5 - Motivation towards combining work and parenting.

The factors underlying perceptions (P1-P4) are representations of rather distinct problems faced by mothers when making their decisions about possible employment. The first of these factors (P1) reflects being a mother as the main factor influencing decisions about work. The second factor (P2) focuses on concerns around availability of suitable and affordable childcare, while the third one (P3) concentrates on practical issues related to getting a job such as the financial benefits of work, the availability of appropriate jobs or the quality of transport links. The last factor (P4) relates to problems of a personal nature, such as health or self-confidence, as well as family constraints.

2.3.2 Background characteristics

The key element of the analysis presented here is its focus on the direct and indirect effects of socio-demographic variables on work outcomes. Therefore, a careful selection of the set of background characteristics included in the model, and the way they are measured, is paramount to ensuring that all important drivers of lone mothers' future work outcomes are revealed.[15]

[14] Factor A3 has been included in this figure for completion but its placement in the middle reflects the fact that it is difficult to classify it according to the two dimensions represented in the figure.

[15] The choice of contextual variables was limited by what is available in the data so it is possible that some potentially crucial characteristic or events might have been omitted from the models. For example, we do not take into account such life-changing events as the death of lone mother's parents, which would be likely to affect the availability of informal childcare.

Analysis by Brewer and Paull (2006) showed that non-white mothers are slower to return to the labour market and less likely to work around the time of their child's school entry, while mothers of children with larger age gaps tend to return to employment more quickly, which suggests that both ethnicity[16] and age of children are important characteristics. The health status of the mother, as well as that of her children, may crucially affect her ability to take up employment.

Ability to afford childcare depends on the amount of income from work, which is related to the level of education. Previous research has also indicated that mothers' education level and bargaining power in the workplace are related to their moral and normative views on combining caring for children and employment even when the child has entered school. Duncan and Irwin (2004) found that better qualified women often held aspirations for themselves which indicated that paid work and parenting were compatible when the child had settled in and was established at school

Meanwhile, their less educated counterparts, who may have been less advantaged in the labour market, expressed a longer commitment to the exclusive care for their children. Brewer and Paull (2006) also showed that less educated mothers were less likely to work at the time of their child's entry to school. On the other hand, they also showed that the slower return to work by lower educated mothers can be explained by their lower likelihood of having been in work prior to the birth of their child. Therefore, mother's education level, and her past labour market history, including the occupational category of her most recent work need also to be taken into account where possible.

The type of childcare used has also been shown to be associated with the likelihood of the mother working when their child starts primary school. Mothers using only informal care and family care while working immediately prior to a school start were found to be significantly less likely than mothers using other types of childcare to remain in work after their child's entry to primary school (Brewer and Paull, 2006). On the other hand, for lone parents especially, it is possible that support from the extended family can be instrumental in job entry and retention. McQuaid *et al*., (2010) suggest that informal care seems key to parents' ability to work in low paid jobs, although this may be an unreliable solution in the long-term. The models will, therefore, need to include information on the range of formal and informal childcare support used by mothers to look at the effect of childcare usage on job retention.

The set of contextual variables included in analyses needs to be a mixture of static indicators (such as ethnicity or age of the mother at the start of the observation period) and variables describing changes in circumstances over time (such as changes in health status or changes in childcare use). Table 2.3 presents the core set of background characteristics included in the analysis.[17] Some of the models analysed at later stages included some of these variables measured at additional points in time. The inclusion of such repeated measurements will be indicated where appropriate.

16 It needs to be noted, however, that the measure of ethnicity employed in this study is rather crude (only distinguishing between 'whites' and 'non-whites').

17 We carried out a number of tests exploring the inclusion of other background characteristics, with a particular emphasis on dynamic indicators. For example, we examined the impacts of taking account of changes in educational qualifications or in access to a car. But the results showed a very high stability of these indicators over time making it impossible to estimate the effect of their changes.

Table 2.3 Background characteristics included in the model

Variable	Label
Characteristics of mother (Wave 8)	
Age[1]	Under 30, 30-39, 40+
Ethnicity[2]	White, other
Education	None or lower than GCSEs, GCSEs, A-levels or higher, other
Health	No problems, Non-limiting problem, Limiting problem
Socio-economic status of mother's last job	Never worked, managerial and professional, administrative and services, elementary occupations
Not in employment for more than two years	Yes, No
Has driving licence and access to a car	Yes, No
Characteristics of family (Wave 8)	
Number of children	1, 2, 3+
Age of the youngest child	0-1, 2-3, 4-6, 7-10, 11+
Use of childcare	None used, formal only, informal only, mix of formal and informal
Number of benefits received	0-2, 3, 4+
Caring for people in the family other than children	Yes, No
Tenure	Owner, private tenant, social tenant
Changes in characteristics (Wave 8 – Wave 9)	
Changes in health status of mother	No change, health improved, health deteriorated
The mother is expecting a baby	Yes, no
(Re-) Partnered between Wave 8 and Wave 9	Yes, no
Child disability and its changes	Not disabled at any point, child became disabled at Wave 9, child disabled at both waves, child disabled at Wave 8 but not Wave 9
Changes to childcare	No change, started using, stopped using
Changes in the number of benefits	No change, benefits increased over the year (Wave 8-Wave 9), benefits decreased over the year (Wave 8-Wave 9)

[1] Continuous variables, such as age, were coded into categorical ones for the purposes of this analysis.

[2] The small sample size meant that only a white/non-white distinction of ethnic origin was possible. Clearly this distinction is very crude and limits the interpretations we can make. However, ethnicity was retained in the model as there did appear to be differences. Such differences could be explored more fruitfully in a larger sample.

3 Results

This chapter presents the results from the three structural equation models looking at work entry, work retention, and changes in attitudes following entry into paid employment. In this chapter we focus on the findings that are of greatest policy interest and are most robust in a statistical sense. A key purpose of the discussion in this chapter is to demonstrate the usefulness of the Choices and Constraints module for modelling future work outcomes, to highlight the unique features of the SEM method, and to show how the combination of the two can improve our understanding of lone mothers' employment decisions. Due to the number of relationships in the models, fuller results are presented in a tabular form in Appendix D.

All the models discussed in this chapter focus on lone mothers who were not employed at the start of the observation period at Wave 8 of the survey. Although the group of non-employed lone parents is a key policy target, it needs to be stressed that over a half of lone parents (57 per cent) are in work (ONS, 2009).

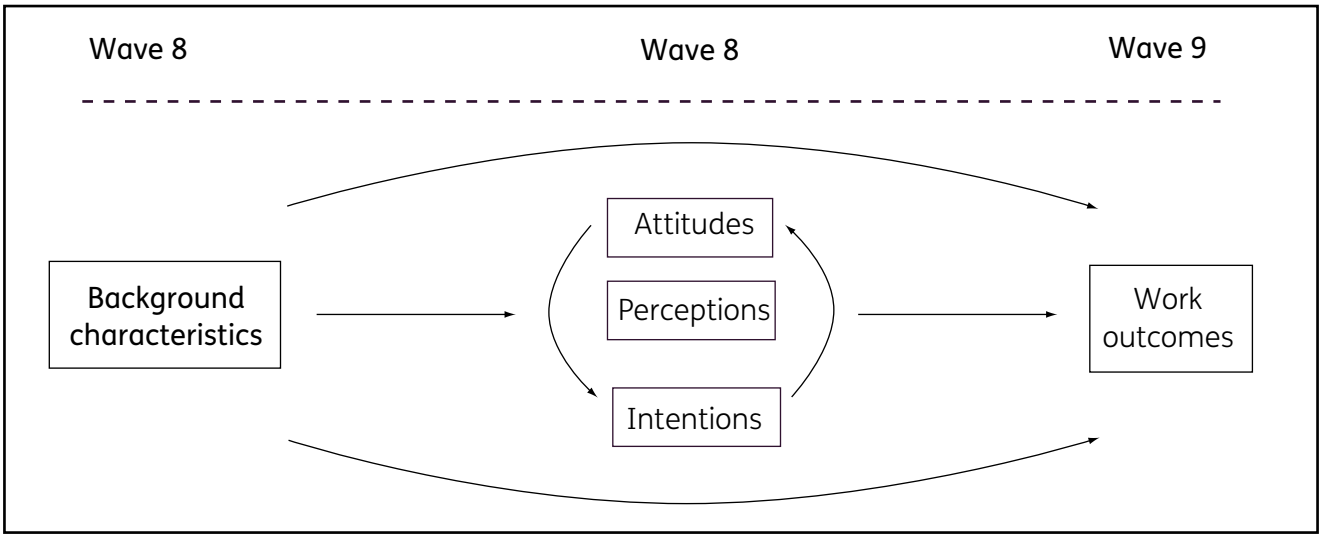
3.1 Model 1: Work entry

Figure 3.1 presents a schematic representation of the SEM used in the analysis of work entry. The model consists of three main elements[18]:

- The relationships between background characteristics and the elements of the Choices and Constraints module, **attitudes, perceptions and intentions**. Here the background characteristics (and their changes) of lone-mother families drive lone mothers' attitudes, perceptions and intentions.
- The interrelationships (correlations) between the elements of the Choices and Constraints set: attitudes, perceptions and intentions.
- The effects of mothers' background characteristics, and their attitudes, perceptions and intentions, on an actual work outcome one year on. In this setup, both direct and indirect effects of the drivers of work outcomes are investigated.

[18] All those three elements are estimated in a single step, which is an important feature of the SEM technique. In contrast to traditional regression methods each relationship is modelled while controlling for other variables included in the model but at the same time accounting for the particular form of the relationships between those variables. For example, when estimating the effect of attitudes on work outcomes, the model takes into account the fact that certain socio-demographic characteristics are assumed to be driving those attitudes. This in turn makes it possible to assess which of the variables in the model have a direct effect on the work outcome, and for which of them the effect is only indirect (and through which other variables it is conveyed). These features of the SEM method will be highlighted when discussing the results in the next section.

Figure 3.1 Schematic representation of the SEM used in the analysis of work entry



Background characteristics, attitudes, perceptions and intentions are measured at Wave 8 (2006) while the work outcome is observed at Wave 9 (2007).[19] In addition, changes in selected relevant background characteristics over the period from Wave 8 to 9 are recorded and included in the model (see Table 2.3 in Chapter 2 for details of the background characteristics included). For the work outcome, we use a simple indicator of whether the mother started any form of paid employment (or self-employment) over the following 12 months by working one hour or more per week. At an initial stage of the analysis, we tested a number of alternative work outcomes, including defining employment as working at least 16 hours per week (a distinction of key interest to policy makers) and splitting the work outcome into mini-jobs, part-time and full-time employment. These alternative outcomes produced substantively very similar results so it did not make sense to focus on more than one outcome. Due to the relatively small number of lone mothers moving into any form of employment (17 per cent of mothers in the sample) and a small sample size (about 500 non-working lone mothers) we decided to use the outcome that captures most movements into employment. Using this definition, about 80 lone mothers moved into work.

3.1.1 Main findings

As outlined in Figure 3.1, the estimated model consists of three main elements. Of particular interest are the effects of background characteristics, and the attitudes, perceptions and intentions, on the work outcome. However, before we move onto discussing these main results, it is useful to briefly describe the other associations revealed by the model, that is, the interrelationships between attitudes, perceptions and intentions and the effects of background characteristics on them. What follows is a brief discussion of the most relevant and robust of these results. The full results are presented in tables in Appendix D.

[19] We have also tested models in which the components of the Choices and Constraints module were measured at more than one wave. However, including such repeated measurements did not add substantive value to the model. This was because the components of the module, particularly attitudes and intentions, turned out to be very stable over time and therefore predicted the attitudes and intentions in the next wave almost perfectly. The factors representing perceptions (the results of the card-sort exercise) were more volatile but including data from Wave 9 as well as Wave 8 in the model still did not improve the results.

While controlling for the background characteristics it was found that:

- high motivation to work (A1)[20] was strongly associated with motivation towards combining parenting and employment (A5). Both of these were positively related with the perception that staying at home is socially stigmatising (A3);
- high motivation towards parenting (A2) was strongly related with perceiving parenting as a job (A4), and with the choice to parent being an important factor affecting work decisions (P1);
- all four perceived factors affecting decisions about work: parenting as a choice (P1), childcare concerns (P2), job concerns (P3), and personal/family constraints (P4) were interrelated: lone mothers who identified one of them as a major factor, were also more likely to think the same about the other. Each of those factors was also negatively associated with future work intentions, as were strong attitudes related to parenting (A4 and A2);
- when lone mothers expressed pro-work attitudes, this was independent from both their attitudes towards parenting and also their future job intentions.

The background characteristics of lone mothers that were strongly related to attitudes, perceptions and intentions were:

- The ages of the children. Mothers with older children were more likely to express pro-work attitudes and intentions to work, and mothers with younger children were more likely to show pro-parenting attitudes.
- The number of children. Mothers with a greater number of children were less likely to express pro-work attitudes and they were more likely to refer to the social stigma associated with staying at home.
- Long-term economic inactivity. Mothers who were not employed for over two years were more likely show pro-parenting attitudes and were less motivated towards combining work and parenting.

Lone mothers with a long-standing limiting illness or disability were more likely to:

- report attitudes related to stigma associated with staying at home;
- express concerns around availability of suitable jobs; and
- point at personal constraints as important factors affecting their decisions about work.[21]

Lone mothers who received a greater number of benefits were:

- less likely to be motivated towards parenting (A1);
- less likely to see parenting as their job (A2);
- less likely to refer to their preference to care for their children as a factor affecting their job decisions (P1); and
- less likely to express intentions to work in the near future (Intent).

---

[20] Throughout the report, we will be referring in brackets to the factor codes, as described in Tables 2.1 and 2.2.

[21] It is likely that the link between all these factors is very strong, in that they designate a single group of mothers facing health-related barriers to work. The new LPO survey, with its larger sample of lone parents, will offer possibilities for exploring this link in a greater detail.

All in all, these findings are consistent with expectations based on evidence from previous research. For example, mothers experiencing problems in one area, tend to be more likely to express concerns in other areas as well. Lone mothers with older children are more likely to be motivated and able to start looking for work than mothers of young babies.

Having briefly described the interrelations between Attitudes, Perceptions and Intentions, and the background characteristics affecting them, we now move on to the drivers of actual work outcomes. Table 3.1 presents the background characteristics, attitudes, perceptions and intentions that had statistically significant effects on the likelihood of lone mothers' moving into employment over the following 12-month period. The table shows, in a simplified way, the direction of association and its 'strength' or certainty as measured by the level of the statistical significance of the effects.[22] Full details of the model are presented in Tables D.1 and D.3. The symbols of + and – in Table 3.1 denote positive and negative associations respectively and the number of symbols represents the strength of association. For example, a plus next to a characteristic in the first column indicates that a lone mother with this characteristic is more likely to move into employment than a lone mother without this characteristic. The more signs there are, the more confident we can be about the finding. Due to a small sample size, relatively few statistically significant relationships can be detected (based on the conventional criteria for confidence intervals). As a result, we also present relationships that are significant at the 90 per cent level and these relationships with borderline significance are denoted by showing the symbol in brackets.

Table 3.1 Selected results of the SEM of work entry

	Direct effect on moving into employment	Effect on parenting as a job (A4)	Effect on intention to work (Intent)
Parenting as a job (A4)	**– –**		
Intention to work (Int)	**+ + +**		
Age of the youngest child (ref: 0-1)			
2-3		– – –	(+)
4-6		– –	+
7-10	+	– – –	
11+		– – –	+ +
Not in employment for more than two years (ref: not in employment for two years or less)	– – –	+	
Use of childcare (ref: none used)			
Formal only	(+)		
Informal only			+
Mix of formal and informal	+		
Changes to childcare (ref: no change)			
Started using	(+)		
Stopped using	–		

Continued

[22] This is related to, but not the same as, the magnitude of the effect. For the magnitude see the standardized coefficients in the tables in Appendix D.

Table 3.1 Continued

	Direct effect on moving into employment	Effect on parenting as a job (A4)	Effect on intention to work (Intent)
Parenting as a job (A4)	**– –**		
Intention to work (Int)	**+ + +**		
Changes to the number of benefits (ref: no change)			
Number of benefits increased over the year (Wave 8-Wave 9)	+	–	
Number of benefits decreased over the year (Wave 8-Wave 9)			
Non-white ethnic group (ref: white)		–	
Education (ref: lower than GCSEs)			
GCSEs			
A-levels or higher		–	
Other			
Number of benefits received (ref: 0-2)			
3			
4+		– – –	– –
(Re-)partnered between Wave 8 and Wave 9 (ref: remained lone mother)		+	
Mother's health (ref: no problems)			
Non-limiting problem			
Limiting problem			– – –
Expecting new child			–
Base: Lone mothers not in employment at W8			FACS 2006-2007

Note: (+)/ (-) p<0.1, +/- p<0.05, ++/-- p<0.01, +++/--- p<0.001; + and – denote positive and negative associations respectively.

In the case of each nominal variable, one of the categories has been set to serve as the reference category, with which all the other categories of this variable were compared. These reference categories have been indicated in brackets.

Of the elements of the Choices and Constraints module, two factors had direct and strong effects on the work outcome. Firstly, the mothers who more strongly treated parenting as their job (A4) tended to have much lower chances of moving into work. Secondly, those mothers who expressed intentions of moving into work (Intent) were more likely to actually move into employment over the following 12 months than mothers who did not express such intentions.

While the latter finding is intuitively clear, there might be various reasons for lone parents' perception of parenting as a job lowering their chances of moving into employment. Firstly, there might be issues of preference, such as a conscious choice of some mothers to stay at home, as suggested by the questions underpinning this factor (see Table 2.2). However, it may be also the case that for some mothers these attitudes may be masking a wider role related to caring and household work. Finally, some mothers may feel like there is little alternative for them than to stay at home with their children and hence they are treating it as their job.

Of the background characteristics that the model shows to have a direct impact on lone mothers' chances of moving into employment, the most important is long-term non-employment[23]. That is, lone mothers who had not worked for more than two years were much less likely than others to move into employment. Among the factors directly **increasing** lone mothers' chances of moving into work were older ages of their children, increases in the number of benefits received, and using formal childcare (either on its own or in combination with informal childcare). Changes to childcare were also directly associated with lone mothers' moving into work. Unsurprisingly, starting employment was positively associated with starting using childcare, and negatively associated with stopping using childcare.

So far, our findings mimic those from other studies. Where the SEM methodology really adds to our investigation is being able to identify **indirect** effects driving lone mothers' work outcomes. These relationships are the effects of background characteristics that influence the actual work outcomes **through** changing attitudes, perceptions and intentions, as illustrated in Figure 3.1. The indirect effects of the background variables can be identified by combining the direct effects of the background characteristics on attitudes, perceptions and intentions captured in Choices and Constraints and direct effects of attitudes, perceptions and intentions on actual work outcome.

As described earlier, two elements of the module had direct effects on the likelihood of lone mothers' moving into employment: attitudes towards parenting as a job (A4) and intentions to work (Intent). But these two elements of the Choices and Constraints module appear to be influenced by certain background characteristics, as evident from the last two columns of Table 3.1. By combining the information on these characteristics, with the information on the strength and direction of the effect of the attitudes and intentions themselves, we are able to discover additional factors that **indirectly** affect lone mothers' employment decisions. The most interesting of such indirect effects of background characteristics on work outcomes are described in the following examples.

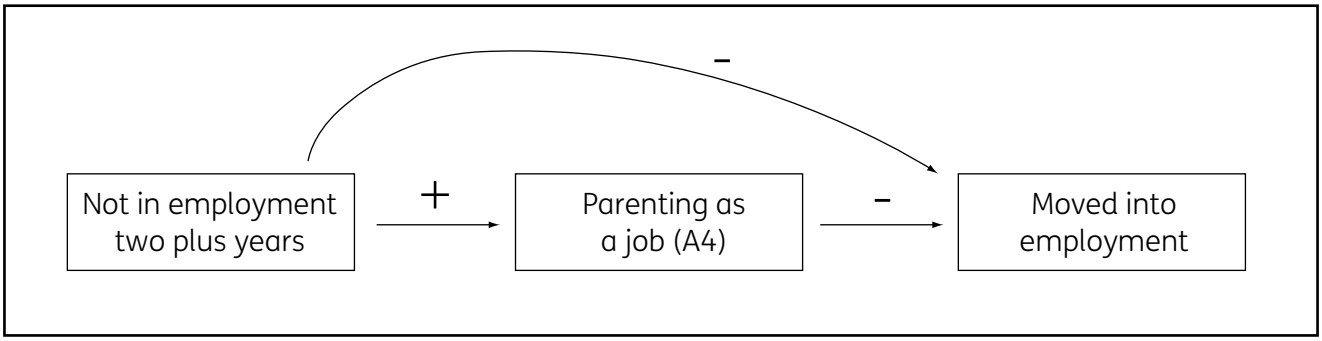
Figure 3.2 shows both direct and indirect effects of long-term non-employment on the chances of moving into work. As described earlier (see Table 3.1), being not in employment for more than two years has a strong and direct negative effect on lone mothers' chances of moving into work. However, as we see in Figure 3.2, long-term economic inactivity also directly affects (strengthens)[24] the group of attitudes described as parenting treated as a job (A4), which in turn reduce lone mothers' chances of moving into work. In this way, long-term economic inactivity reduces the subsequent employment chances of lone mothers in two ways:

- it has a direct, negative effect in its own right; and
- it also magnifies attitudes that reduce the likelihood of working, leading to a further decrease in the likelihood of future employment.

[23] We use the term 'non-employment' simply to indicate the fact of not being in employment for over two years. We do not distinguish between unemployment and economic inactivity here; both of these situations would be captured by the 'non-employment' indicator.

[24] The direction of the association is explicitly assumed and tested in this model.

Figure 3.2 Direct and indirect effects of long-term unemployment on the chances of moving into work



It appears to be the case that staying out of employment for a long time can directly decrease lone mothers' chances of reemployment.[25] This may be because their skills deteriorate or because employers are reluctant to give jobs to people who have had long employment breaks. But it also seems to be the case that long-term inactivity leads to lone mothers' increasingly treating parenting as their job, perhaps because this is how they start to rationalize, or justify, their inability to move into formal employment. Internalising such attitudes may further impede their willingness to look for a job because they consider themselves already working (as a parent).

Figure 3.3 focuses on the effects of various forms of childcare on the chances of moving into work. As discussed earlier, using formal childcare before starting work, either on its own or in combination with informal childcare, directly leads to increased chances of the lone mother moving into work. However, in addition to these direct effects, there is also an indirect effect of using informal childcare before starting employment, which tends to increase lone mothers' intentions to work. In this way, although using informal childcare does not directly increase lone mothers' employment chances, it may help them to start considering employment as an option and thereby indirectly increase their future work prospects.

This might be because informal childcare provides the mother with child free time to engage in activities not associated with her role as a parent and carer, including looking for work. This may be especially crucial for those lone mothers who have limited income and cannot afford to pay for formal childcare. It is also worth noting that informal childcare is typically provided by immediate family or friends, who may be a source of support, advice and encouragement, as well as social contacts, all of which may indirectly increase lone mothers' chances of finding a job. Furthermore, the availability of informal childcare may reassure the mother that her child is safe with others and so help her to imagine doing something else, including paid work. Conversely, the absence of help from friends and family may strengthen the sense that the mother is solely responsible for the child and make it harder for her to envisage leaving the child in order to work.

[25] As in the case of all the other relationships discussed in this report, this is a net effect of long-term non-employment, accounting for the effects of all the other characteristics included in the model. For example, since the age of the youngest child has been controlled for in this model, this effect of long-term non-employment is adjusted for the fact that some of the mothers were not in employment because they had to stay at home in the period immediately following the birth of a child.

Figure 3.3 Direct and indirect effects of childcare on the chances of moving into work

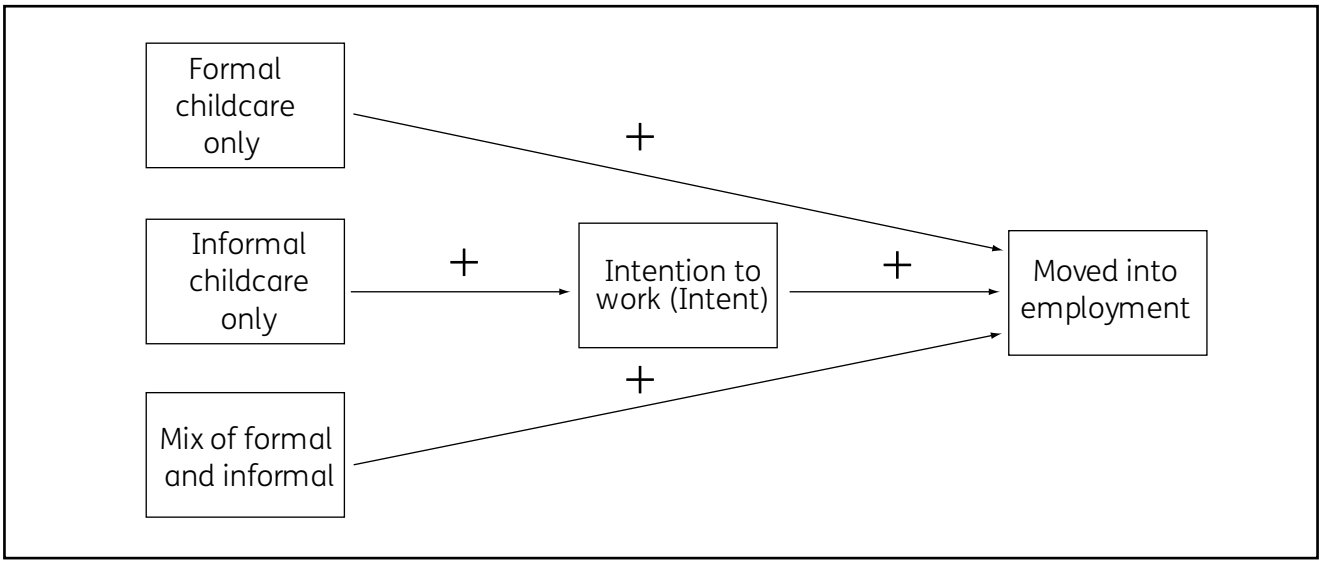
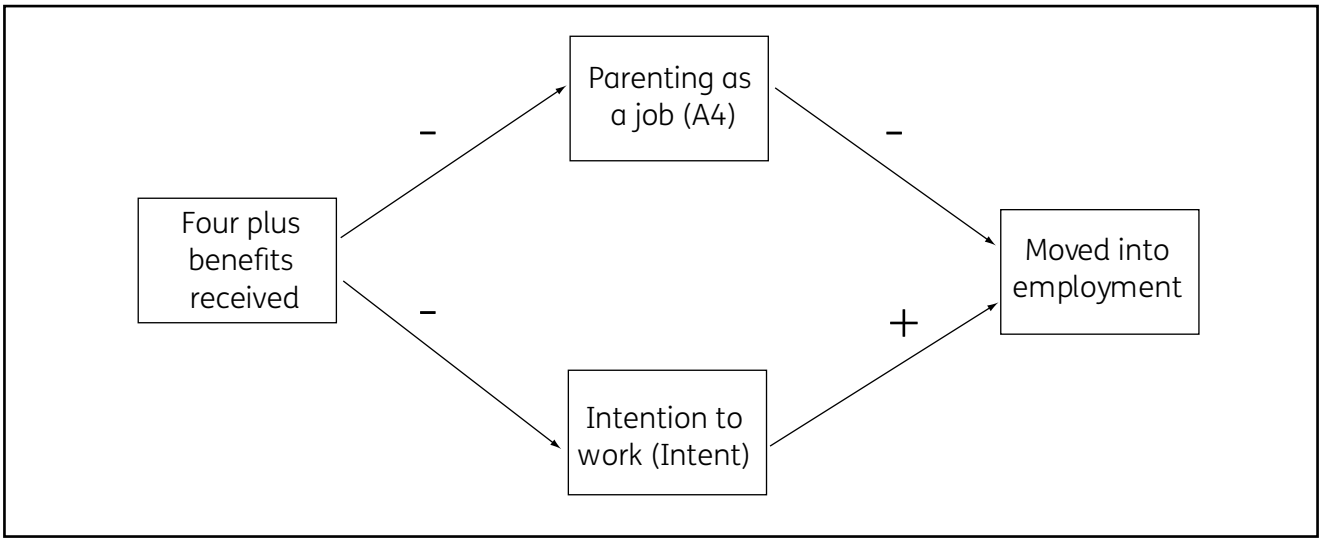


Figure 3.4 presents the effect of the number of benefits received on the chances of moving into work. Before we move on to interpreting results, it needs to be stressed that the number of benefits received is a fairly crude, and potentially compound measure, which may combine the information on the level of income from benefits with the types of benefits received. For this reason, it may be a rather difficult measure to interpret. This variable was originally included in the model mainly to control for whether the mother is in receipt of benefits or not.

However, as evident from the analysis presented below, there is likely to be more to it than simply the fact of receiving benefits and this particular part of the model may suggest interesting avenues to explore in future research. For instance, the number of benefits variable could be decomposed into specific benefit types, while also controlling for the level of income. The results presented below should be treated mainly as an illustration of the capabilities of the SEM framework, rather than being particularly informative in substantive terms.

As illustrated in Figure 3.4, receiving four or more different types of benefit payments has the effects of reducing both the anti-employment attitudes (parenting seen as a job) as well as intentions to work. In this way, the receipt of benefits seems to have a mixed effect on employment chances – on the one hand it reduces negative attitudes, on the other, it seems that it also acts as a disincentive for lone mothers who intend to work in future, so that the two effects counteract one another. As a result, no direct effect is observed between the number of benefits and the likelihood of lone mothers' moving into work. If a standard regression analysis was carried out with this data we would see no effect of the level of benefits on the work outcome. However, the SEM framework enables us to understand **why** no direct effect is observed.

Figure 3.4 Indirect effects of the receipt of benefits on the chances of moving into work



To shed some light on these results, we conducted some additional analysis exploring characteristics of lone mothers in receipt of a different number of benefits, which are described in detail in Appendix C. These analyses demonstrated that lone parent families in receipt of four or more benefits were more likely to have one or more family members with a longstanding illness or disability but also had, on average, substantially higher disposable incomes, mainly due to the additional disability benefits they receive. We can speculate that what produces the ambiguous effect of the number of benefits is the poor health or disability decreasing intentions to work, but the higher incomes potentially reducing importance of the 'parenting as a job' attitude.

For example, given that the higher income is through benefits specifically linked to disability, rather than linked to the children/lone parent status, it may be shaping the lone mother's identity primarily as a disabled woman rather than as a stay at home mother. Similarly, some of those mothers would be caring for other disabled people. Because they are faced with multiple 'carer' roles, the importance of parenting is diluted by the other demands being placed on them.[26] However, it needs to be stressed that such explanations can only be treated as very tentative at this stage. Further research would be needed to better understand the role of different types of benefits on improving lone mothers' chances of moving into employment.

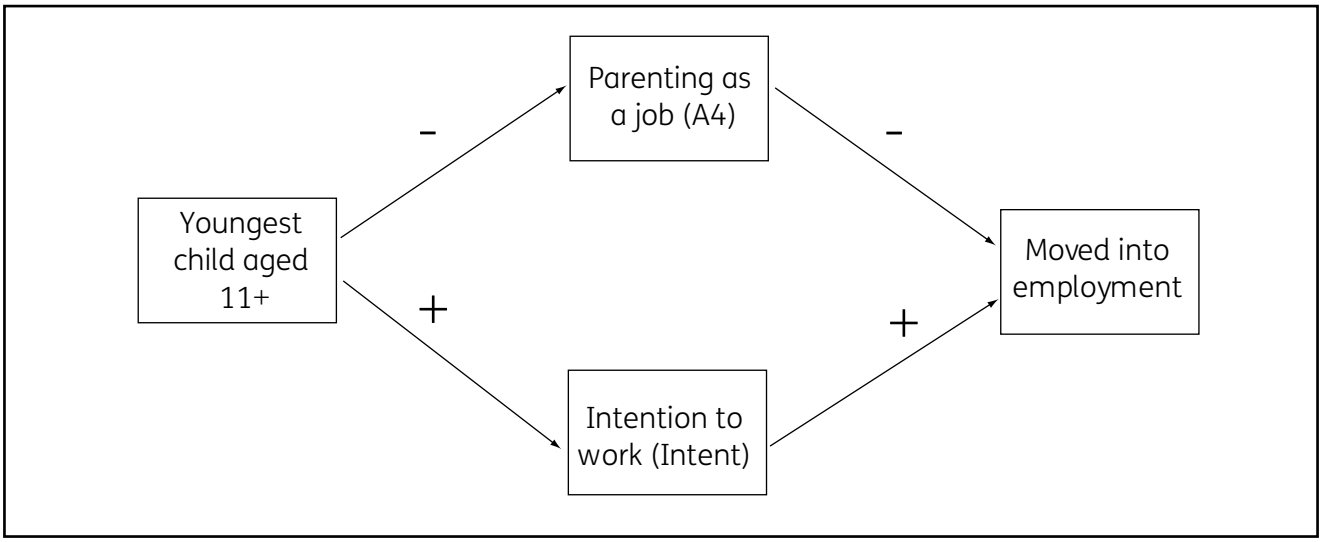
Figure 3.5 illustrates the effect of the age of the youngest on the chances of moving into work, focusing on the oldest group (11 and over) contrasted with the youngest (age 0-1), which is the reference category.[27] As with the number of benefits, the age of the youngest child tends to have indirect effects on the chances of mothers' work entry (see Table 3.1). However, unlike the number of benefits, having older children has a negative effect on them seeing parenting as a job, but a positive effect on the intention to work. Since a strong 'parenting as a job' attitude decreases

26 See Houston (2006) for a general discussion of self-identities from a psychological perspective; for a discussion of mother's identities relating to work and parenting, see Himmelweit and Sigala (2004).

27 See Table 3.1 for the other categories of the age of the youngest child variable. With the exception of the group of 7-10, the pattern of relationships is quite consistent across the age categories. The strength of the relationships generally increases with the age of the youngest child: mothers with oldest children were least likely to express the attitudes and intentions illustrated in Figure 3.5.

chances of mothers' work entry, and intention to work increases them, the two indirect effects do not cancel each other out but add up, increasing the likelihood of work entry. At the same time there appears to be no direct effect of the youngest child's age on the mother's moving into employment once the other background characteristics have been accounted for. This might be because the child's age effect is genuinely explained by the presence of the other variables in the model, including intentions to work and the likelihood of seeing parenting as a job.[28] However, it needs to be stressed that this variable only measures the age of the youngest child, while not capturing the ages of other children in the family, and this may also contribute to the fact that the direct effects are not detected.

Figure 3.5 Indirect effects of the age of the youngest child on the chances of moving into work



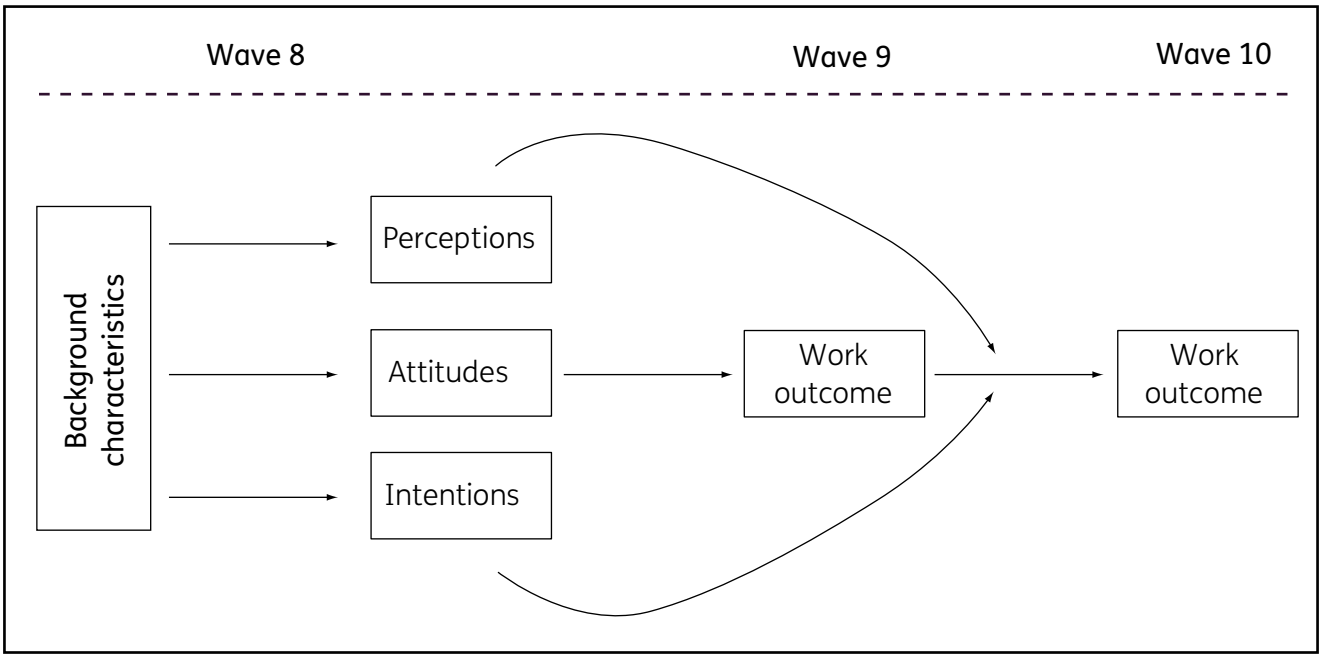
A further examination of Table 3.1 shows that there are also other, weaker, indirect effects of certain background characteristics and their effect can be inferred in the same way as in the examples presented above. Increases in the number of benefits, education to A-levels and above and non-white ethnicity all tend to decrease the extent to which attitudes that reduce chances of employment are expressed (that is, 'parenting seen as a job'), while re-partnering tends to increase these attitudes. Furthermore, long-standing limiting illness or disability tends to decrease lone mothers' intentions to work, thereby indirectly lowering their chances of future employment. A similar, indirect effect of decreasing chances of employment is also observed for mothers who expected a new baby, but we would expect that the impact here is much more short-term than is the case for long-standing illness or disability. These findings corroborate evidence from previous research, where both disability and pregnancy were found to reduce the mother's control in her work-family situation, and to reduce her belief in her ability to enter employment, because of additional demands placed on her by these factors (Houston, 2006).

[28] The direct effect is present for the seven to ten age category (see Table 3.1) and this may suggest that there is something specific about this particular age group that makes it more likely for the mother to move into employment, over and above the other effects present in the model. However, it might be also the case that the lack of direct effects for the other age groups is a statistical artefact, driven by the small sample size. For further discussion of this issue see the section 'Note on the modelling strategy' in Appendix A.

3.2 Model 2: Work retention

Seventy-five per cent of the lone mothers who moved into employment at Wave 8 of the survey remained in employment at Wave 9. The work retention model, presented schematically in Figure 3.6 aims to explore the characteristics of lone mothers that are associated with staying in employment following a successful transition.[29]

Figure 3.6 Schematic representation of the SEM used in the analysis of work retention



Work retention is defined as entering into employment in Wave 9 and still being in employment in Wave 10.[30] We compared the characteristics, perceptions, attitudes and intentions of those lone mothers who retained their employment, with those who never entered into employment. In this way, by comparing this model with the work entry model described in the previous section, we are able to detect the factors that are specifically associated with work retention, rather than with the initial stage of entering employment. However, due to small sample size, we were not able to directly compare those mothers who, having entered employment retained employment, with those who dropped out. For the sake of simplicity, we will be using a label of 'work retention' when discussing this analysis. However, it needs to be remembered that, strictly speaking, this model refers to obtaining and retaining employment, as compared with staying out of employment.

29 Only about 600 lone mothers were available for this analysis, 60 of whom obtained and retained employment. Due to the small sample size the results should be interpreted with a degree of caution. It is also quite likely that due to the small sample size we were not able to identify relationships that could be found if a larger sample was available. Also see the section 'Note on the modelling strategy' in Appendix A for related discussion.

30 This model is measuring work retention, rather than retaining a particular job. We do not check whether it is the same job that mothers have in both waves. Furthermore, the way we measure work retention is simplified, and may be inaccurate in some cases. For example, we are not able to tell if there were any gaps in employment between the survey waves.

3.2.1 Main findings

Table 3.2 presents the background characteristics, attitudes, perceptions and intentions that had statistically significant effects on the likelihood of lone mothers both moving into employment and then retaining their employment for the following 12-month period. As before, the detailed results of this analysis are presented in Appendix D (see Table D.4).

Table 3.2 Selected results of the SEM of work retention

	Direct effect on obtaining and retaining work	Effect on parenting as a job (A4)	Effect on personal/ family constraints (P4)
FACTORS			
Parenting as a job (A4)	**– –**		
Personal/family constraints (P4)	**–**		
Background characteristics (reference category shown in brackets)			
Age of the youngest child (ref: 0-1)			
2-3		– – –	
4-6		– –	
7-10	+	– – –	
11+		– – –	
Not in employment for more than two years (ref: not in employment for two years or less)	– – –	+	
Socio-economic status of last job (ref: never worked)			
Managerial and professional			
Administrative and services		–	
Elementary occupations			
Non-white ethnic group (ref: white)		–	
Education (ref: lower than GCSEs)			
GCSEs			
A-levels or higher		–	
Other			
(Re-)partnered between Wave 8 and Wave 9 (ref: remained lone mother)		+ +	
Number of benefits received at Wave 8 (ref: 0-2)			
3			
4+		– – –	(+)
Changes to benefits Wave 8-Wave 9 (ref: no change)			
Benefits increased over the year (Wave 8-Wave 9)	+	(–)	
Benefits decreased over the year (Wave 8-Wave 9)			
Child disability and its changes (ref: not disabled at Wave 8 or 9)			
Child became disabled at Wave 9	+		
Child disabled at both waves			
Child disabled at Wave 8 but not Wave 9			+

Continued

Table 3.2 Continued

	Direct effect on obtaining and retaining work	Effect on parenting as a job (A4)	Effect on personal/ family constraints (P4)
Factors			
Parenting as a job (A4)	**– –**		
Personal/family constraints (P4)	**–**		
Mother's health at Wave 8 (ref: no problems)			
Non-limiting problem			
Limiting problem			+ + +
Mother's health at Wave 9 (ref: no problems)			
Non-limiting problem			
Limiting problem	– –		
Use of childcare at Wave 9 (ref: none used)			
Formal only			
Informal only			
Mix of formal and informal	+ + +		
Changes to childcare between Wave 9 and Wave 10 (ref: no change)			
Started using	+		
Stopped using			
Base: Lone mothers not in employment at Wave 8			FACS 2006-2008

Note: (+)/ (-) p<0.1, +/- p<0.05, ++/-- p<0.01, +++/--- p<0.001; + and – denote positive and negative associations respectively.

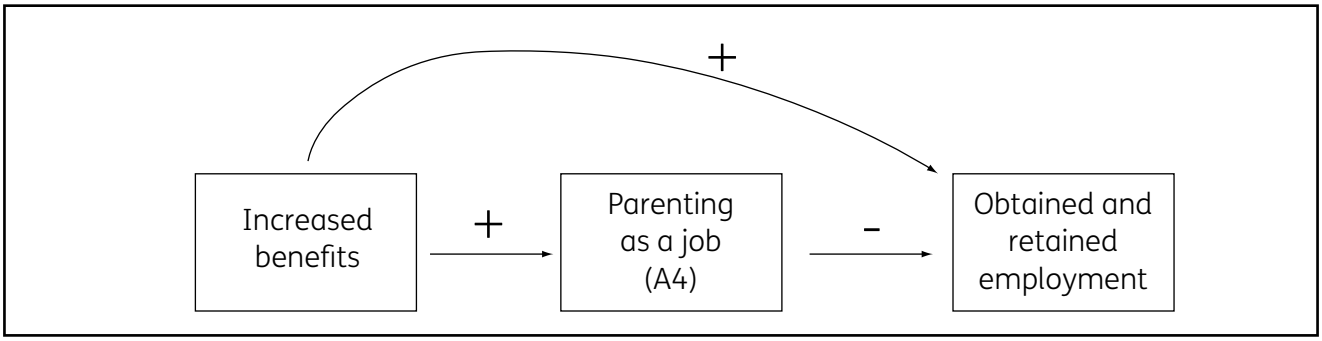
In the case of each nominal variable, one of the categories has been set to serve as the reference category, with which all the other categories of this variable were compared. These reference categories have been indicated in brackets.

Many of the relationships are similar to those found in the work entry model presented in the previous section. But some differences do emerge when looking at work retention. Using a mix of formal and informal childcare arrangements was positively associated with retaining work. In addition, starting to use childcare after obtaining employment also had a direct effect on retaining work. In the work entry model (Model 1), we saw that using informal childcare increased lone mothers' intentions to work, which in turn increased their chances of finding employment. Coupled with those findings, the results from the work retention model may suggest a process in which using informal childcare may be an important element in a route to sustained employment for non-working lone mothers. For instance, using informal childcare may help to create suitable conditions for starting to think about, and actively looking for a job, and then helps to supplement formal childcare arrangements in the initial, often most challenging, period following entry into employment. It is hoped that findings from the LPO evaluation will allow us to investigate in a greater detail the role of informal childcare in the processes of facilitating lone mothers' transition into employment.

An increase in the number of benefits between Wave 8 and Wave 9 was positively associated with obtaining and retaining paid employment but this is likely to be due to the mothers becoming eligible for in-work benefits such as Working Tax Credit when obtaining work between the two waves of the survey. The increase in benefits also had a negative effect on perceiving parenting as a job,

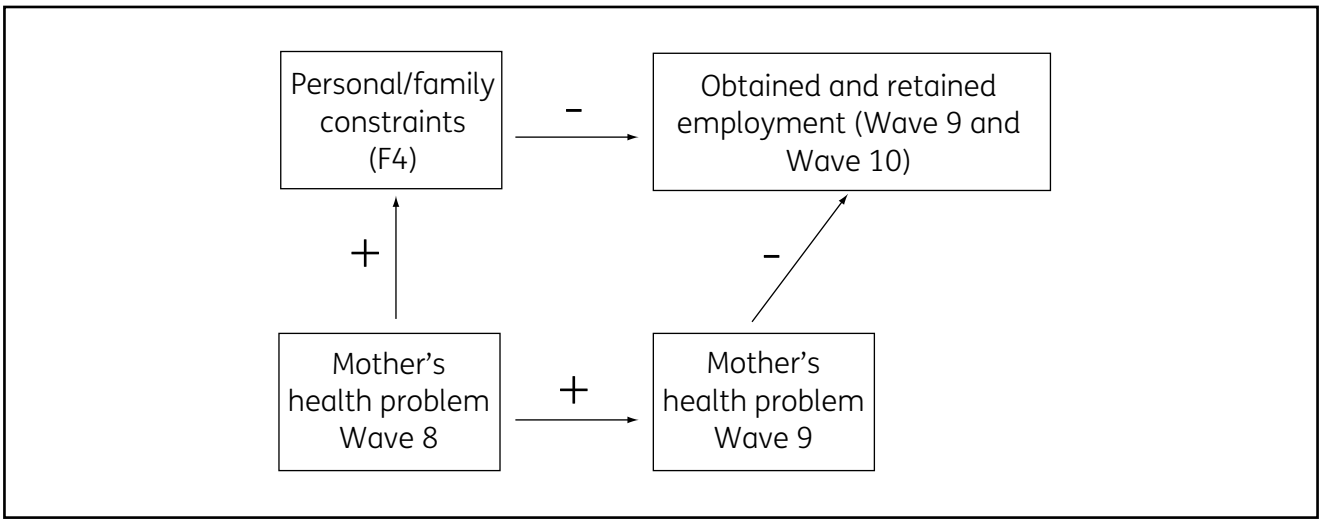
weakening its negative effect on the work outcome, as illustrated in Figure 3.7. It might be the case that increased income, associated with moving into employment, makes the mothers realize the financial advantages of being in paid employment, thereby decreasing attractiveness of the 'parenting as a job' option.

Figure 3.7 Direct and indirect effects of changes in the number of benefits on the chances of obtaining and retaining employment



As demonstrated in the previous section, health problems may affect lone mothers' transition into employment. Figure 3.8 illustrates longer-term effects of the mother's health problems on them retaining work. Having work-limiting health problems was strongly associated with having such problems a year later, which in turn was directly associated with a decreased likelihood of obtaining and retaining work. Having health problems at Wave 8 was also positively associated with perceiving personal or family factors as constraints, which in turn is negatively associated with obtaining and retaining employment.

Figure 3.8 Indirect effects of changes in mother's health status on the chances of obtaining and retaining employment



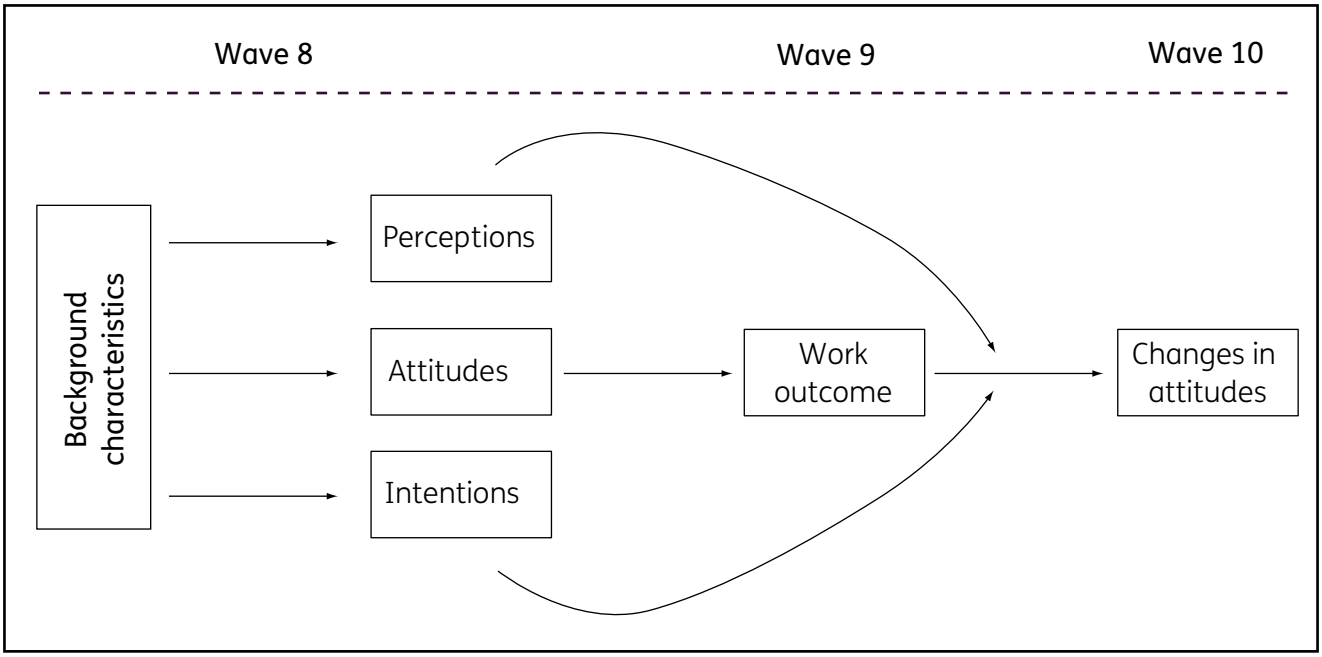
Many of the relationships found in the work retention model are similar to those observed in the work entry model which may indicate that factors important for job entry remain important for sustaining work. With a larger sample of lone mothers available in the future surveys it will be possible to compare mothers who retained work with those who were unable to retain work. This could reveal additional important factors that we were not able to detect here.

3.3 Model 3: Changes in attitudes

The final stage of analysis in this study investigates whether attitudes towards work and child-rearing among lone mothers change as a result of entering work. We are particularly interested in testing whether those who had held attitudes which conflicted with working changed their attitudes following their entry into employment.

Figure 3.9 presents a schematic model of the analysis of changes in attitudes. The attitudes were initially measured at Wave 8, where all lone mothers were not employed, and the effect of employment on changes to the attitudes was assessed by comparing how attitudes changed for those mothers who entered employment at Wave 9 with those who did not. Entry into employment was only measured at Wave 9 and job retention was not taken into account in this model.

Figure 3.9 Schematic representation of the SEM used in the analysis of changes in attitudes



3.3.1 Main findings

The results show a direct effect of moving into work on an increase in the values of A5 (motivation towards combining work and parenting), and this attitude only.[31] This may suggest that the experience of moving into employment strengthens this attitude for lone mothers. This might be because mothers realize that it is possible to combine employment with parenting, or because a change in attitudes is formed to reduce the conflict between attitudes and behaviour to create a more harmonious set of values, consistent with their new circumstances (Houston, 2006).

Previous research has also demonstrated that norms and attitudes of other people, and particularly those held by other lone mothers and close family, are particularly important predictors of lone mothers' work intentions (Houston, 2006). Himmelweit and Sigala (2004) have argued that mothers' attitudes towards work and parenting change not just as a result of their own situation but also in line with observed attitudes among other mothers around them. Entering employment is an important transition, one that is likely to bring significant changes to lone mothers' circumstances, including greater opportunity for social contact with new people. Therefore, lone mothers who enter

[31] The results of this model are presented in Table D.5.

employment may alter their attitudes to align them with attitudes prevalent among their new co-workers, including pro-work attitudes.[32]

On the other hand, the analysis found that apart from motivation to combine work and parenting, none of the other attitudes changed following the experience of employment, including the attitudes that are at odds with intentions to work, such as parenting seen as a job. Quite possibly, it is more difficult to convince those mothers who strongly oppose the idea about combining work and employment to change their minds in this respect, at least in the short-term. Or, put differently, for those mothers who hold attitudes more strongly associated with staying at home, moving into work might be a financial necessity which has to be accepted, but which runs against their personal views and those views are so strong enough to resist change following the transition into employment.

[32] This explanation would be consistent with the MINDSPACE model proposed by Dolan *et al*., (2010).

4 Discussion

The primary objective of the project was to explore how a longitudinal analysis of the Choices and Constraints question set may inform our understanding of lone mothers' decisions around employment. In particular, it focused on the:

- factors increasing the likelihood of lone mothers' moving into employment;
- drivers of job retention for lone mothers;
- effect of transition to employment on lone mothers' attitudes towards work and parenting.

This chapter summarises some key findings and reflects on the challenges posed by the analysis. It also considers the implication of this work for future policy and research.

4.1 Summary of key findings

Attitudes, Perceptions and Intentions measured using the Choices and Constraints question module were proved to play an important role in explaining lone mothers' decisions about employment. Particularly three of them – attitudes towards parenting as a job, perceptions of personal and family constraints, and intentions to work turned out to be key predictors of future work outcomes. As well as having direct effects on the chances of transition into employment and work retention, these factors acted as transmitters for other characteristics of lone mothers, which manifested themselves, and strengthened their effects, through these attitudes, perceptions and intentions.

For instance, previous research has demonstrated that long term economic inactivity decreases the chances of finding a job, due to skill deterioration, loss of self-confidence, loss of social contacts and other factors. An important contribution of the findings presented here is that prolonged labour market inactivity also strengthens a set of attitudes that appear to discourage lone mothers from seeking employment, such as those where parenting is treated as a job (or, alternatively, parenting increasingly comes to be seen as a job on its own, decreasing the perceived need to look for employment outside of the household).

Another notable finding was to identify an important role for informal childcare, which increased lone mothers' intentions to work but also, in a combination with formal childcare, contributed to job retention. We argued that the availability of informal childcare may contribute to obtaining and retaining work in three interrelated ways:

- It is indicative of the presence of a supportive network of family and friends.[33]
- It may enable the mother to become confident about leaving the child and entrusting others with caring.
- It may be enabling in practical terms, allowing mothers time to search for work or engage in other work related activities such as training.

We also found a dual role played by the number of benefits that lone mothers receive: receiving a large number of benefits appeared to reduce both the attitudes discouraging employment and also intentions to work. It was argued that this ambiguous effect may be driven by the specific circumstances of lone mothers in this group as large number of benefits was associated with higher income, but the sources of this income were benefits related to disability (whether of the mother or

[33] Previous research has indicated the importance of such support, see Ridge and Millar (2008).

of her children). In this way, even though these lone mothers might have relatively positive attitudes towards employment, their external circumstances prevent them from finding a job. However, due to a rather crude nature of the number of benefits variable, further research which considers both type and number of benefits would be needed to validate these findings.

Finally, perceived personal and family constraints were also found to have a direct effect on decreasing lone mothers' chances of work retention. This effect was over and above the effect of self-reported health problems, which suggests that the perceptions may be capable of capturing some additional constraints, such as mental health or relationship breakdowns, which may be difficult to measure otherwise.

We also found that some attitudes can change following a successful transition into employment. Specifically, this was the case for motivation towards combining work and parenting, which increased in mothers who had moved into work. This suggests that moving into employment makes some lone mothers realize that it is possible to successfully combine employment with parenting.

4.2 Using Choices and Constraints in future surveys

There are some important implications for using the Choices and Constraints module in other surveys, such as the LPO survey. Firstly, the set of questions appears to be conveying unique information, one that is not covered by standard socio-economic indicators. This became particularly evident when modelling **indirect** effects of background characteristics of lone mothers on their work outcomes using the SEM framework. As demonstrated in this study, attitudes, perceptions and intentions often act as transmitters of those background characteristics, strengthening the cumulative effects on work outcomes. Incorporating this information enriches analysis and unravels new aspects of the story, helping us to better understand the complex choices that lone mothers face while making their decisions about employment.

It seems important to retain all three parts of the module (Attitudes, Perceptions and Intentions) in future surveys. Analyses carried out in this study have demonstrated that the three components play a distinct role in explaining lone mothers decisions around work and childcare. Including a wide range of attitudes, perceptions and intentions in our analyses has helped us to better understand the complexity of choices and constraints faced by non-working lone mothers when making their decisions about employment. Certain factors turned out to play a more important role in some situations than in others, such as perceived personal and family problems being a more important problem for job retention than for entry into employment.

While overall the attitudes, perceptions and intentions tend to be relatively stable over time, the changes – when they occur – give us additional insights into the circumstances of lone mothers, as was the case with certain attitudes changing after the transition into employment.

It should be noted that the analysis conducted here was on a relatively small sample of lone parents. With a much bigger sample, such as the one offered by LPO, the possibilities for utilising the Choices and Constraints questions to investigate in much more detail the topics covered by this working paper will be greatly improved.

4.3 Implications for policy

A number of policy implications arise from this research. The transitions into employment analysed in this study were observed in the 'voluntary' policy support environment prior to the introduction of LPO[34]. Overall, it must be conceded that relatively few (17 per cent) of the non-working lone mothers actually moved into any form of employment over the period of 12 months. The remainder appeared to be quite far away, in terms of their attitudes, perceptions and intentions, from taking a decision about finding a job. For example, there seems to be a substantial group of mothers, particularly those with youngest children, who intentionally choose parenting over participation in the labour market and are prepared to face the negative aspects of not working to be able to stay at home with their children. Furthermore, the perceptions of some lone mothers point at significant constraints in their journey to successful employment. These include a perceived lack of suitable jobs, problems with balancing work with caring (lack of flexible working arrangements), lack of suitable and affordable childcare and more. Under LPO many of these lone mothers will be required to look for employment. It is likely that this group will be less motivated and will have more barriers to employment than the lone mothers who we observed moving into employment in this study. Clearly, this places additional burdens on those services responsible for providing support in finding jobs for them.[35]

The research offers some pointers as to where this help could be most efficiently targeted. We demonstrated multifaceted effects of prolonged non-employment on decreasing the chances of finding a job. Offering casual, part-time or mini-jobs may prevent complete detachment from the labour market, a deterioration of skills and the build-up of attitudes that discourage lone mothers from looking for work. Providing training courses, as well as counselling services offering, among other things, the possibility to discuss work-life balance issues also seems important given that attitudes to combining work and childcare emerged as a particularly strong theme in the analysis. This would help to better prepare some lone mothers for the transition into employment. Such help may be particularly relevant for the youngest lone mothers, who seemed to be most likely to express attitudes negative to employment.

The research showed that informal childcare may affect intentions to work and, therefore, indirectly increase future chances of finding a job. However, it was formal childcare (alone or in combination with informal childcare) that played a key role in successful transition into employment as well as job retention. Understanding barriers to using formal childcare, including its cost and availability in the local area, as well as the preference among some parents for informal care for reasons other than cost, seems paramount to ensuring the success of policy programmes such as LPO.

4.4 Directions for future analysis

There are a number of ways in which this research could be extended. A larger sample size would allow us to test the factors associated with retaining, rather than obtaining a job by directly comparing those lone mothers who, having found a job stayed on, with those who dropped out. Job retention is important for avoiding recurrent poverty, as well as preventing stress and upheaval, for mother and children alike, caused by cycling between benefits and employment and starting and stopping childcare. A thorough analysis of job retention, including possibly investigating its effects

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34 As with other research this analysis shows how length of time away from employment diminishes the chance of work entry for lone parents. Therefore, it can be said that this analysis supports the policy intention to reduce LPO to lone parents with a youngest child of five.

35 However, it needs to be noted that the report covers a relatively short period of time and hence may not be capturing the fact that it may take longer for some lone mothers to make a successful transition into employment.

on child outcomes, should be a priority for future research.[36] It will be possible to investigate these issues with data from the new LPO survey, which has a sample of more than 2,500 lone parents – several times as big as FACS.

Another possible way of taking this research forward would be to extend it to cover coupled mothers. Lone parents face different, and arguably additional, difficulties in attempting to combine parenting and employment, compared with coupled mothers. They also have been subject to a number of tailored policy interventions over the past decade. Comparing attitudes, perceptions and intentions of lone and coupled mothers would allow us to see more clearly how they reflect the different circumstances faced by both groups and how these circumstances shape their employment decisions. Such a comparison would reveal how lone mothers' decisions around work differ from coupled mothers' decisions and so to understand how much of what we have found in this report applies to all mothers and how much of it is due to being a lone parent.

It will be possible to compare findings from this report with those from forthcoming LPO surveys. The FACS analysis presented here provides historical context covering years 2006-2008 and may help us to develop a better understanding of changing attitudes and perceptions over time as lone parents are increasingly required to take up jobseeking requirements under LPO.

36 Some of these issues have been previously looked at in a study of the implementation and effectiveness of Britain's ERA, a programme offering a combination of post-employment advisory support and financial incentives designed to help low-income individuals who entered work sustain employment and advance in the labour market. See Riccio *et al.*, (2008) for details.

Appendix A
Additional technical information

Data preparation

This project focuses on lone mothers, thereby limiting the sample size from FACS available for analysis. For this reason, the answers to the Choices and Constraints questions have been collapsed together to increase the number of cases in each category. For the attitudinal questions, the answers 'strongly agree' and 'agree' have been combined and coded as 1, while the reminding answers ('neither agree nor disagree', 'disagree' and strongly disagree') have been combined and coded as 0. In the case of the card-sort exercise, the answers 'big factor' and 'smaller factor' have been combined and coded as 1, while the answer 'not a factor' has been coded as 0. In this way, higher average values indicate that more lone mothers agree with a given attitudinal question or more lone mothers give weight to a given factor affecting their decisions about work. As for the questions on intentions to work (the third element of the Choices and Constraints module), only one of them was used in this analysis – whether the mother **thinks she will** work (being employed or self-employed) over the next 12 months.[37] This variable was again coded as 1 (a positive answer) or 0 (a negative answer).

Assessing the quality of the model

Before describing the actual model specifications and results, it is useful to explain one of the main features of the type of analysis carried out in this project, namely the confirmatory framework. Structural Equation Modelling (SEM) represents a confirmatory approach to modelling. Unlike exploratory modelling methods, which aim to describe the patterns observed in the data, the confirmatory framework is used to test how pre-defined, that is hypothetically assumed, relationships 'fit' the observed data. In other words, how likely it is that our pre-defined pattern of associations accurately describes the data at hand. These pre-defined models that we want to test can be specified based on theory, previous research, or on our knowledge from initial exploratory analysis of the data.

So-called 'goodness-of-fit' measurers are used to assess how well our pre-defined model fits the available data. There are a number of such measures but the most commonly used in empirical applications are TFI, CLI and RMSEA indices. In this project, we used the following thresholds to a model as acceptable in terms of goodness-of-fit: TFI/CLI>0.9; RMSEA<0.06. Sometimes more strict criteria, such as TFI/CLI>0.95; RMSEA<0.05, are postulated in the literature and many of the models estimated here did fit these criteria.

The goodness-of-fit indices are used to assess the 'quality' of a specific model, as well as to compare competing models. For example, if we have two models describing the structure of the answers to the attitudinal questions of the Choices and Constraints module, we can use goodness-of-fit indices to verify which of the two solutions better represents the patterns of associations observed in our sample.

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[37] An alternative version of this question (whether the mother would like to work over the next 12 months) was also tested in several models but the results proved to be consistent regardless of the choice of the version.

Factor Analysis (FA) can be carried out in both an exploratory and confirmatory fashion. Exploratory FA gives an initial idea of the possible shape of the latent structure underpinning a given set of questions, while Confirmatory FA tests how specific models fit the data at hand. For example, some of the solutions initially suggested by the exploratory version of FA may fit the data better than other solutions. Confirmatory FA can hence be used to compare different versions of model obtained at the exploratory stage and to select the optimal solution.

Representing models graphically

SEM is an advanced method designed to describe sometimes very complex patterns of relationships. For this reason, graphical representations of estimated models are often used to aid the interpretation of the results. There are a number of conventions used in the SEM graphics. One is to represent observed variables (such as socio-demographic characteristics or answers to survey questions) as rectangles, and underlying unobserved (latent) variables (which describe theoretical constructs manifested by observed answers to survey questions) as ovals or circles. Two-way arrows are used to represent correlations between elements of the model, while one-way arrows indicate the relationships that are assumed to be causal (based on theoretical premises). All graphical representations of models used in this report follow these conventions.

Note on the modelling strategy

The aim of this section is to explain how we carried out the SEM analysis in this paper. Each one of the three models (work entry, work retention and changes in attitudes) was estimated in two stages. In the first step, we fitted a 'full' model in which each of the background characteristics were allowed to have both a direct effect on the outcome and a set of indirect effects going through each of the Attitudes, Perceptions and Intentions. This model resulted in some of the direct and indirect effects of background characteristics being statistically insignificant. In the second step, we fitted a constrained model, where the insignificant coefficients of the full model estimated at Step 1 were forced to be 0, and we checked whether this constrained model still fitted the data according to the criteria described in an earlier section. All of them did.

It is important to stress that in this modelling strategy the only assumption that was made a priori was a general one, that the background characteristics can affect the outcome both directly and indirectly (via the elements of the Choices and Constraints module). In particular, we did not make any specific assumptions at the first stage of modelling about the effects (or their lack) of individual background characteristics, such as age or ethnicity on work outcomes. Conversely, each of the background characteristics were initially assumed to have both direct and indirect effects on the outcome, but the empirical results of Stage 1 suggested that this assumption did not necessarily reflect what we observed in this particular sample. It was for this reason that at the second stage of modelling, we assumed and tested some explicit constraints on the effects, such as lack of direct effects of certain background characteristics. Hence, it is important to remember that these constraints imposed on models at Stage 2 were driven empirically, that is, based on the results from Step 1, rather than theoretically. This was because the intention behind this analysis was primarily exploratory – aimed at describing how different things might work, rather than aimed at testing very specific hypotheses about certain relationships, for example, how ethnicity affects chances of moving into work.

This modelling strategy has consequences for how the models presented in this paper are interpreted. For example, it can be argued that some of the evidence we found in the data is rather surprising, for example the lack of direct effects on chances of moving into work in the case of such background characteristics as education, ethnicity or the age and number of children. Such unexpected findings may, and do happen when exploring empirical evidence. This is more likely to happen when sample is rather small as some of the effects that could have been found with a larger sample might go undetected due to a lack of statistical power. Hopefully, many of these patterns found in the data can be verified when the new LPO data become available. However, what is important to remember when reviewing the results presented in this paper is that all the reported effects (or a lack of them) are driven empirically, and do not reflect any assumptions imposed a priori on the data.

Appendix B Modelling the latent structure behind Attitudes and Perceptions: Latent Class Analysis compared to Factor Analysis

The findings reported in this working paper used Factor Analysis (FA) to concentrate down the structure of the Choices and Constraints questions. However, FA is not the only approach that can be used for this purpose. For example, D'Souza *et al*., (2008) used Latent Class Analysis (LCA) to model the structure behind Perceptions. They identified six possible classes or 'clusters' which described characteristics of all mothers in relation to work. This LCA approach was also tested at an initial stage of this study. This involved replicating the analysis by D'Souza *et al*., for **lone mothers only**.

This section of the appendix briefly describes both methods, FA and LCA, and highlights the most important similarities and differences between them. It also sets out and compares the results of each approach and concludes with a discussion of their relative merits in order to justify why FA was chosen over LCA for the analysis of lone mothers' responses to FACS, as described in the main body of this working paper.

The overarching goal of both LCA and FA techniques is to simplify the structure of the data that has been described in a relatively complex way and using a large number of questions, as is the case in the Choices and Constraints module. However, each of the methods use a different approach to obtain the simpler structure and consequently produces a different type of outcome.

LCA may be seen as an extension of Cluster Analysis in that it uses a more refined methodology to assign respondents to a number of groups. LCA uses answers to a number of questions (here, the card-sort questions of the Choices and Constraints module) to classify **people** (here lone mothers) into mutually exclusive groups called latent classes. It is important to understand that these latent classes represent **groups of people**, rather than **subsets of questions**. Consequently, each lone mother will belong to one, and only one, latent class at a given point in time.[38]

Unlike clustering methods aimed at classifying people, the goal of FA is to simplify the structure of a given **set of questions**, by identifying underlying unobserved (latent) factors that manifest themselves as observed answers to the set of questions. Typically, an outcome of FA is a set of relatively few underlying variables that represent a much larger number of observed variables

[38] Unlike Cluster Analysis, LCA uses a probabilistic model in which the cases are not absolutely assigned to a given class. Instead, they have a defined probability of membership for each of the classes. However, when the LCA results are used in further analysis, such as regression models, an optimal LCA solution is chosen, in which each respondent is assigned to the class with the highest probability of membership.

(the answers to survey questions). It is important to understand that unlike LCA, FA results in a 'classification' of **questions** rather than **people**. Consequently, each lone mother will be attributed a score on each of the factors identified by FA. In other words, although a lone mother will belong to only one latent class, she will be classified according to each of the underlying factors.[39]

This appendix presents the results of initial analysis carried out on the data using the two alternative approaches (LCA compared to FA).

Approach 1: Factor Analysis

In this approach, both Perceptions (answers to the card-sort exercise), as well as Attitudes are modelled using FA.

As a first step in this approach, Exploratory Factor Analysis was carried out for Perceptions and Attitudes separately. The exploratory analysis suggested that there are between five and ten latent factors behind the attitudinal questions and that between three and five factors are needed to adequately describe the structure of the answers to the card-sort questions. Based on further confirmatory analysis, a five-factor solution was chosen to represent Attitudes and a four-factor solution to represent Perceptions; this is presented in Tables 2.1 and 2.2 in the main report.

In the next step, Confirmatory Factor Analysis (CFA) was used to assess how well the four factors identified for Perceptions (P1-P4), together with the five factors identified Attitudes (A1-A5) describe the combined set of card-sort and attitudinal questions. CFA confirmed that the nine factors adequately describe the patterns underlying this combined set of questions (CFI = 0.900, TLI = 0.916, RMSEA = 0.044).

As a final check, a number of alternative models were tested, which combined conceptually similar factors underpinning Attitudes and Perceptions into single factors. However, these models did not represent the relationships observed in the data well enough, and were rejected by the CFA procedure. Additional tests were also run, aimed at checking whether the 'intention to work' question could be incorporated into any of the factors identified earlier, but the results indicated that it was not feasible (the 'intention to work' question was independent from all of the factors). These additional tests proved that the three components of the Choices and Constraints module (attitudes, factors influencing decisions about work, and work intentions) had distinct underlying structures and needed to be treated separately in modelling.[40] Therefore, the number of factors could not be further reduced and the obtained solution with five factors representing Attitudes, four factors representing Perceptions and a separate 'intention to work' question was deemed the optimal solution.[41]

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39 If desired, latent factors obtained in FA can then be categorized and cross-classified to identify mutually exclusive groups of respondents: those with low scores on all of the factors, those with a low score on the first factor but a high score on the second factor, and so on.

40 One of the reasons for this may be the differences in how the various components of the module were measured (card sort compared to simple answers). These different methods of data collection may have produced distinct patterns of measurement error for each of the components.

41 That is the most parsimonious solution, with the fewest number of factors that still adequately represents the underlying patterns of associations.

Approach 2: Latent Class Analysis

This alternative approach utilises LCA to model the structure behind Perceptions while the same five factors (A1-A5) identified in the first approach, are still used to model the structure of Attitudes.

Henceforth, we replicate approach by D'Souza *et al*., (2008) for lone mothers only, rather than all mothers.

The goodness of fit statistics indicated that there were three distinct latent classes present:

- the first group was assigned the label 'few constraints' (to employment). Respondents in this group were less likely to place statements in the 'big factor' category – 33 per cent of lone mothers were in this group in 2006;
- the second group was labelled 'carer by choice'. This group consistently identified issues about wanting to look after their children themselves – 30 per cent of lone mothers were in this group in 2006;
- the third group was labelled 'multiple constraints' (to employment). For each of the 19 statements respondents in this group were more likely than average to state that the issue was a 'big factor' for not working – 37 per cent of lone mothers were in this group in 2006.

Our analysis indicated fewer latent classes than found by D'Souza *et al*., (2008) and there may be a number of reasons for this. Firstly, we used a different group of mothers – lone mothers, whereas D'Souza *et al*., (2008) used both couple and lone mothers. Lone mothers may be facing different constraints to work than couple mothers, which would affect the results of analysis of this type. Secondly, the sample size of lone mothers is clearly much smaller and sparseness can affect classification. Thirdly, LCA is essentially an explorative technique and throughout the analytical process various decisions made by the researcher can impact on the final classification. The LCA approach seemed to work better for mothers as a whole, rather than just lone mothers. However, it is possible that replicating the LCA approach on a larger sample of lone mothers could result in additional and more refined latent classes.

Testing strategy

For both the LCA and FA approaches four distinct models were tested. Besides comparing the two approaches these models aimed at testing various forms of structural relationships between Attitudes, Perceptions and Intentions, such as correlation versus causation. The models tested were:

1 A model of correlations between the elements of the Choices and Constraints module: Attitudes, Perceptions, and Intentions.

2 A model in which Perceptions are predicted (caused) by the mother's Attitudes.

3 A model in which future work Intentions are predicted (caused) by Attitudes and Perceptions.

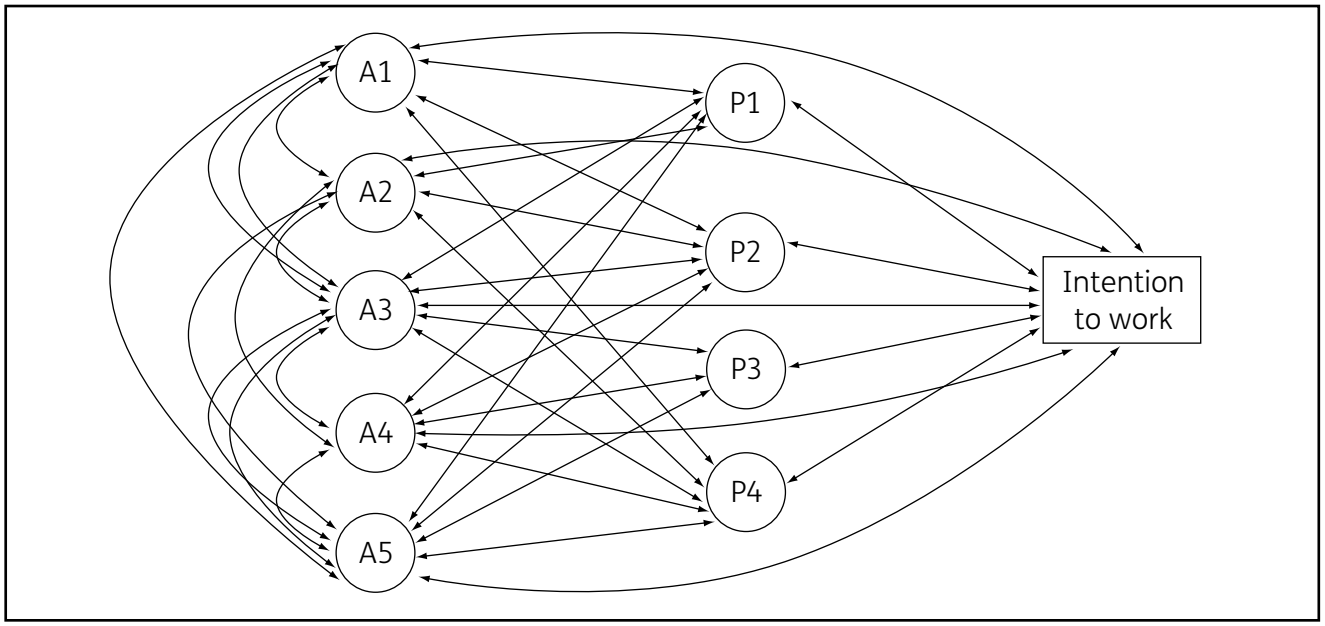
4 A model in which employment status in the next wave of the survey (a year later) is predicted (caused) by Attitudes, Perceptions and Intentions.

Graphical representations of some of these models are used to aid interpretation and illustrate the differences between the two competing approaches. These figures use the conventions of the SEM graphics as described in Appendix A.

Model (i) Correlations between Attitudes, Perceptions, and Intentions

Figure B.1 represents the FA approach, to model the latent structure behind Perceptions. In this approach, each mother has a defined position on each factor underpinning Attitudes and Perceptions,[42] and what is modelled are the relationships between these factors.

Figure B.1 Correlations between the elements of the Choices and Constraints module using the FA approach



The results of the FA analysis were as follows:[43]

- Higher scores on factor P1 ('parenting as a choice'), was associated with **higher** scores (stronger attitudes) on factors A2-A4 ('motivation towards parenting', 'parenting as a job' and 'social stigma of staying at home'). However, it was associated with **lower** scores (weaker attitudes) on attitudinal factors A1 and A5 ('motivation to work' and 'motivation to combining work and parenting'). In other words, lone mothers with pro-work attitudes were less likely to mention 'parenting as a choice' as a factor influencing their decisions about work.
- Higher scores on factor P2 ('childcare concerns') were associated with higher scores on attitudinal factors A2-A4, ('motivation towards parenting', 'parenting as a job' and 'social stigma of staying at home').
- Higher scores on attitudinal factors A2-A4 ('motivation towards parenting', 'parenting as a job' and 'social stigma of staying at home') were positively associated with an increased likelihood of factor P3 ('job concerns') influencing decisions about work.
- Finally, the **only** attitudinal factor associated with an increased score on P4 factor ('personal/ family constraints') was A3 ('social stigma of staying at home').

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42 In this approach, these four factors represent unobservable constructs and hence are depicted by circles rather than rectangles in the figure.

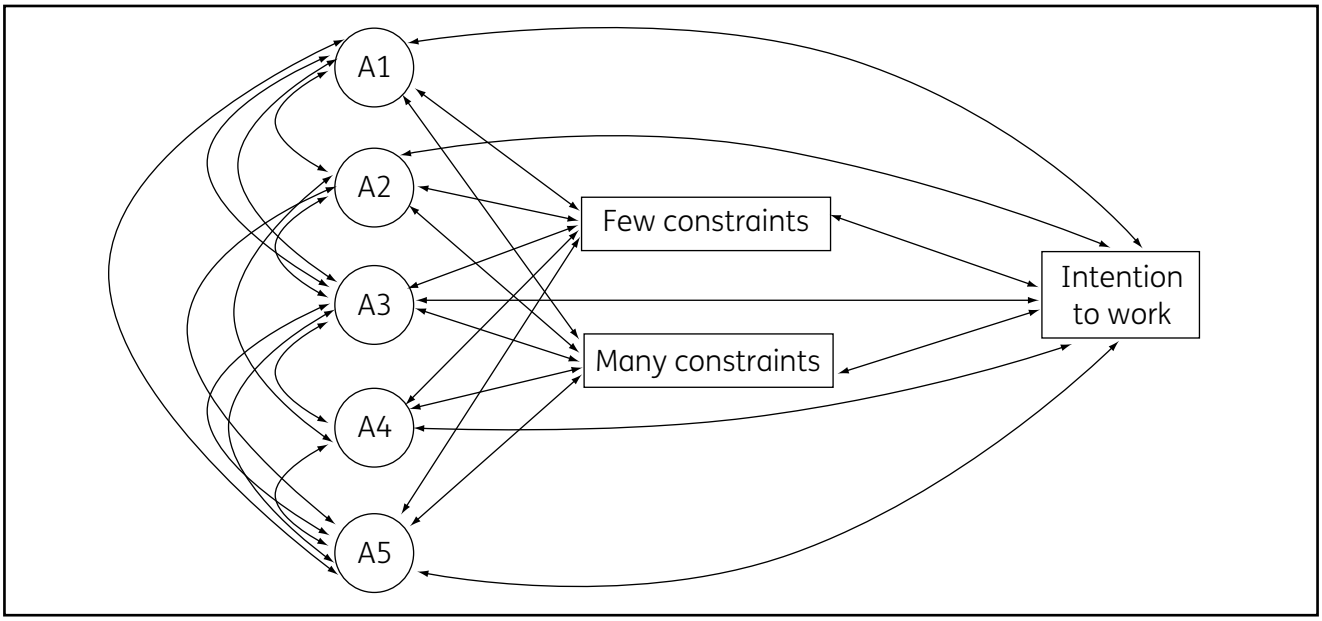
43 Here, we only discuss the relationships between different components of the Choices and Constraints module, leaving aside the associations between the factors of the same type (i.e. attitudes with other attitudes).

Furthermore, those with **higher** scores on factors A4 ('parenting as a job') and A2 ('motivation towards parenting') were less likely to think they would work in the future. Conversely, higher scores on factor A5 ('motivation towards combining work and parenting') were associated with more positive expectations regarding future work.

Three of the factors underlying Perceptions were correlated with a lower chance of the mother saying she would work in the near future. These were the factors P1 ('parenting as a choice'), P3 ('job concerns') and P4 ('personal/family constraints').

In the LCA approach to modelling the structure behind perceptions, an equivalent model estimates correlations between the five factors underlying the attitudinal questions, the three latent classes to classify lone mothers based on their Perceptions, and an indicator of future work intentions.[44] This model is represented in Figure B.2.

Figure B.2 Correlations between the elements of the Choices and Constraints module using the LCA approach



As described earlier in this appendix, the latent classes are used to divide lone mothers into three mutually exclusive groups. Latent class membership is, therefore, an example of a categorical, or nominal, variable. Such variables are analysed by using one of the categories as the reference category, with which all the other categories are compared. For the purpose of this analysis, we set the latent class 'carer by choice' as the reference group. This choice was motivated by earlier analyses, which suggested that 'carer by choice' may be considered an intermediate category in terms of problems faced by mothers. The reference category 'carer by choice' is not represented in the figures. This is because the information about the reference category is never given directly by the model but instead needs to be inferred from the differences between the reference category and the other groups.

[44] Attitudes are represented by unobserved (latent) factors that need to be estimated in the model, and are, therefore, depicted using circle. By contrast, intention to work, as well as latent classes, are observed (or defined) variables in this model and are represented by rectangles in the figure.

The results of the LCA analysis demonstrated that, compared with 'carer by choice':

- mothers in the 'few constraints' class were **less likely**, to score highly on factors A2, A3, A4 and A5, that is, to be highly motivated towards parenting, to think that staying at home bears a social stigma to it, to treat parenting as a job and to be motivated towards combining work and parenting;
- mothers in the 'many constraints' class tended to have **higher scores** on factors A2, A3 and A4, that is, to be motivated towards parenting, consider parenting a job and think that staying at home is socially stigmatised.

Furthermore, those with **higher scores** on factors A4 (childcare as a job) and A2 (motivation towards parenting) were **less likely** to think they would work in the future. Conversely, higher scores on factor A5 (motivation towards combining work and parenting) were associated with more positive expectations regarding future work.

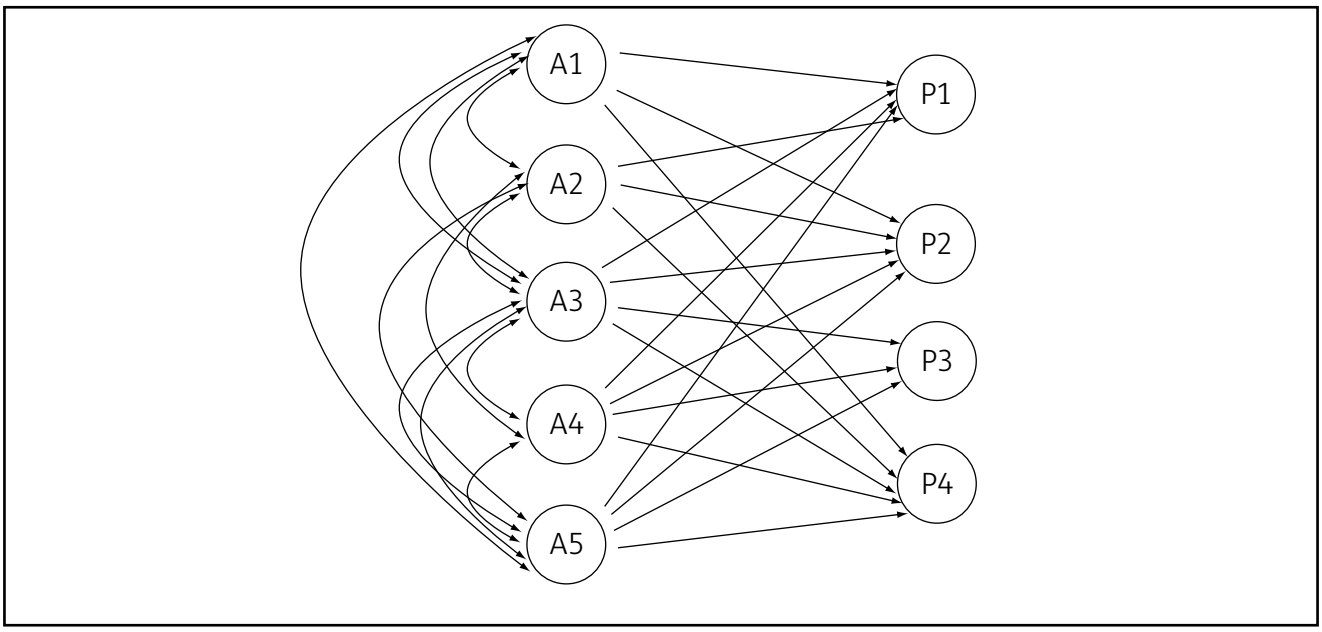
Finally, compared with the mothers in the 'carer by choice' class, those in the 'few constraints' category were more likely to think they would work, while those in the 'many constraints' group were least likely to have positive work expectations.

All in all, the FA and LCA approaches show a broadly consistent picture of certain attitudes ('motivation towards parenting', 'parenting as a job' and 'social stigma of staying at home') being associated with an increased likelihood of lone mothers indicating more constraints to work in the card-sort exercise of the Choices and Constraints module. Furthermore, these constraints were linked to a lower chance of the mother thinking she would work in the near future regardless of the analytical approach taken. However, with the LCA approach based on the three-class solution we were only able to say that was the case for the mothers with 'many constraints' (as opposed to being 'carer by choice'). The FA approach allows us to get an additional insight into the matter by disentangling the constraints captured by the card-sort exercise into factors such as 'job concerns' or 'childcare concerns'.

Model (ii) Perceptions explained by the mother's Attitudes

This second model differs from the first one in that Attitudes (represented by the five underlying factors) are assumed to be driving Perceptions, hence the one-way arrows in the figure. As in multiple regression models, the net effect of each attitudinal factor is estimated, while controlling for the effect of the remaining attitudinal factors. Figure B.3 presents the FA approach.

Figure B.3 Explaining mothers' Perceptions by their Attitudes using the FA approach

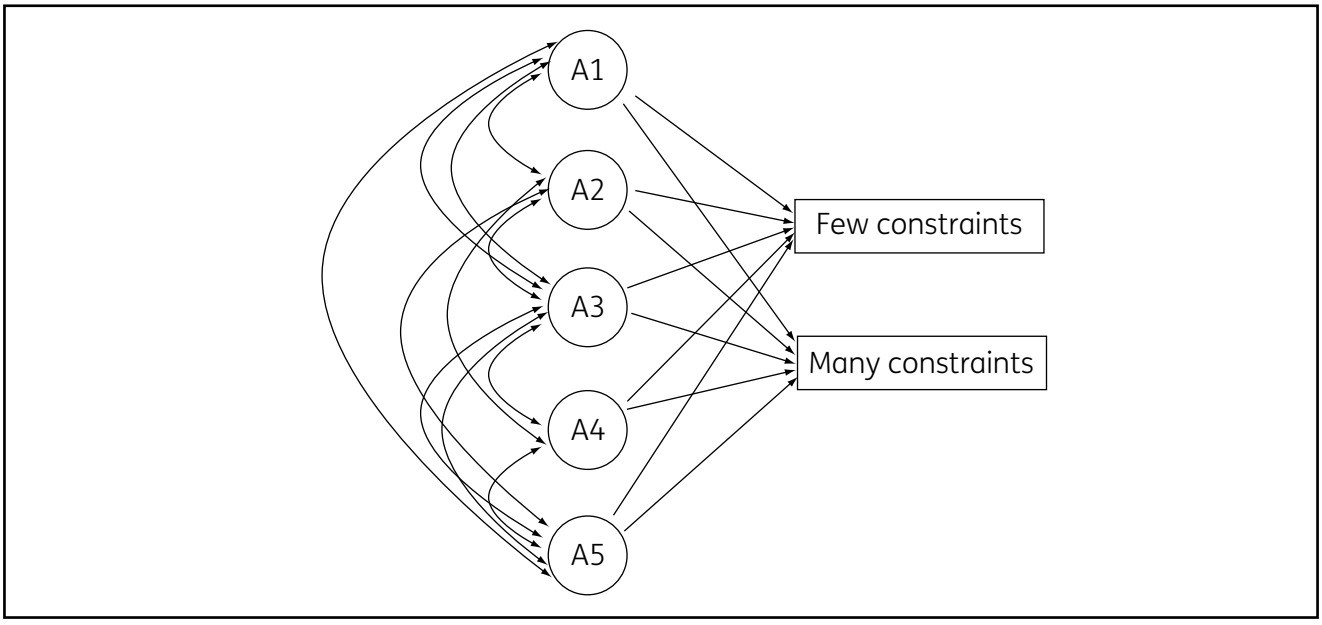


When the effect of other attitudinal factors is accounted for, the FA approach applied to model (ii) resulted in the following associations:

- Lone mothers who had stronger attitudes towards parenting as a job (A4) were more likely to also indicate 'parenting as a choice' as a factor influencing their decisions about work (P1).
- Lone mothers who more strongly felt that parenting is a job (A4), those who believed that staying at home is associated with social stigma (A3), as well as those who were less motivated towards parenting (lower score on A2), were more likely to point at concerns around childcare (P2).
- Lone mothers strongly convinced that staying at home is associated with social stigma (A3) were more likely to point at concerns around job (P3) as well as personal or family problems (P4).

Figure B.4 presents the LCA approach to the same question (ii).

Figure B.4 Explaining mothers' Perceptions by their Attitudes using the LCA approach



The results of the analysis in the LCA version showed that:

- when the effect of other attitudinal factors was accounted for, the only factor decreasing the likelihood of being in the 'few constraints' class, as opposed to 'carer by choice', was A4 (parenting as a job). The effects of the other attitudes were not significant. In other words, mothers who considered parenting as their job were less likely to be in the 'few constraints' category than the mothers who did not have strong attitudes of this type;
- when the effect of other attitudinal factors was controlled for, mothers with a higher score on factor A3 (social stigma of staying at home') faced an increased likelihood of being in the 'many constraints' class, rather than the 'carer by choice' class. No other attitudinal factor had an independent effect on membership in this class.

As was the case with model (i), the results produced by both the FA and LCA approaches were again fairly consistent. Both approaches pointed at a particularly strong relationship between the set of attitudes labelled as 'parenting as a job' and a set of factors in the card-sort exercise linked to perceiving parenting as a choice. Furthermore, both approaches indicated a link between the social stigma of staying at home (A3) and an increased likelihood of the mothers indicating constraints to work in the card-sort exercise. With the LCA approach based on the three-class solution we were only able to say that that was the case for the mothers with 'many constraints' (as opposed to being 'carer by choice'). Using the FA approach however, we could see that the social stigma of staying at home is mostly related to concerns around job (P3) and personal or family problems (P4). Therefore, the FA approach seems to be giving a more detailed picture than the LCA approach.

Model (iii) Predicting Intentions to work by Attitudes and Perceptions

In this model, the five factors underlying Attitudes, as well as the structure behind Perceptions were used to explain mothers' work Intentions, that is, how likely the mothers were to think they would work in the near future.

In the FA approach, only one attitudinal factor was significantly related to work intentions in model (iii): lone mothers who treated parenting as a job (A4) were less likely than other mothers to think they would work in the near future. Goodness-of-fit tests suggested that the FA model adequately described the relationships in the data (CFI = 0.900, TLI = 0.916, RMSEA = 0.043).

The results of the LCA approach suggest that mothers in the 'many constraints' class were less likely than those in the 'carer by choice' group to say they thought they would work (none of the effects of the other variables were significant in this model). However, the goodness-of-fit indices indicated that the model poorly explains the structure of the relationships (CFI = 0.815, TLI = 0.827, RMSEA = 0.066), and hence the results should not be interpreted.

Model (iv) Predicting future work by Intentions to work, Attitudes and Perceptions

In this final model, we used the three components of the Choices and Constraints module measured at Wave 8 of FACS, to predict actual work outcomes one year on, at Wave 9 of the survey. A simple definition of outcome was used, where employment was defined as any paid job amounting to at least one hour per week. In both the FA and LCA approaches the results suggested that Intentions to work one year earlier have a significant positive effect on the likelihood of getting a job. Conversely, having strong attitudes of parenting as a job (A4) was associated with lower chances of being employed one year on.

The FA approach to model the structure behind perceptions suggested that lone mothers indicating personal or family constraints (P4) were also less likely to be in employment one year on. However, with the LCA approach, there was no difference between latent classes in terms of the chances of the members' getting a job one year on. Moreover, the LCA model very poorly represented the actual data structure (CFI = 0.818, TLI = 0.830, RMSEA = 0.063) and, therefore, these results should not be interpreted.

Summary

This appendix details two alternative approaches to analysing the Choices and Constraints module. Both approaches were illustrated with a series of structural models and based on these analyses we suggest the following conclusions.

Firstly, the approaches differ in the way the results are presented and interpreted. With the FA approach, description and interpretation of the results is relatively straightforward as it does not involve referring back to a benchmark measure. By contrast, with LCA the results need to be compared to a benchmark, or reference, category (one of the latent classes), and interpreted relative to this reference group. Therefore, the following description of results may be cumbersome to report and the relationships between various elements of the model may be more difficult to interpret.

Secondly, the structure behind models in the FA approach may appear more complex than in the LCA approach: in the FA approach four factors are used to model the structure of Perceptions, as compared with two latent classes in the LCA approach (one latent class being fixed as the reference category). However, the simplicity of the LCA approach comes at a price of having broad, 'catch-all' classes that may be difficult to interpret in a very detailed or specific way. The factors like 'childcare concerns' or 'personal/family concerns' that were unravelled in the FA approach seem to be lost in the LCA approach when applied only to lone mothers.[45]

Thirdly, it seems that overall the FA approach produces better fitting models which more adequately describe the patterns found in the FACS data. They also encounter fewer estimation problems than the models in the LCA approach.

Finally, latent classes used in the LCA approach were unable to predict an actual work outcome (moving in employment) one year on. One of the reasons for this might be a relatively crude nature of the outcome used: employed one plus hours a week compared to non-employed. However, factors identified in the FA approach did predict this outcome despite its crudeness.

Based on the above and following consultations with DWP colleagues, it was decided that FA was the preferred method for exploring lone part responses to the choices and constraints questions used in FACS 2006-08 and may also be a fruitful means of exploring forthcoming findings emerging form the longitudinal survey of lone parents affected by LPO.

[45] However, as described earlier in this appendix, the LCA approach seemed to work better for mothers as a whole, rather than just lone mothers (see D'Souza *et al*., 2008). This might have been, at least partially, due to a larger sample available for that analysis. It is therefore possible that replicating the LCA approach using a larger sample could result in a bigger number, and more refined, latent classes.

Appendix C
Exploring the number of benefits received

The analysis conducted for this working paper considered the significance of number of benefits received on work outcomes and observed some contradictory findings. Therefore, presented below is some additional analysis which looked in greater detail at the lone parent families receiving four or more benefits highlighted in Figure 3.4 of the main report, in an attempt to better understand the seemingly contradictory indirect effects on work outcome.

Lone parent families in receipt of four or more benefits were more likely to have one or more family members with a longstanding illness or disability (see Table C.1). Just 13 per cent of these families had no disabled family members, compared with 58 per cent of families in receipt of three benefits and 61 per cent of families with two or fewer benefits. In fact, in 62 per cent of the lone mothers in receipt of four or more benefits had a work limiting disability or illness, a significantly higher proportion than the 21 per cent receiving three benefits and the 15 per cent of lone mothers receiving two or fewer benefits.

Table C.1 Disability status by number of benefits received

	Number of benefits/tax credits received (including Child Benefit)				
	Two or fewer %	Three %	Four or more %	Total %	*Unweighted base*
Family disability status					
No adult or child has a disability	61	58	13	53	*460*
One or more children have disability, no adult has disability	16	13	20	15	*133*
One or more adults have disability, no child has disability	13	18	32	18	*146*
At least one adult and one child have disability	10	11	36	14	*120*
Mother's disability status					
No longstanding illness or disability	77	71	32	68	*593*
Problem but does not affect work	8	8	6	8	*69*
Problem affects type or amount of work can do	15	21	62	24	*197*
All	100	100	100	100	*859*

Base: All lone mother not in employment FACS 2006

This difference is also observed in the families' sources of income (see Table C.2). It should be noted that the measure of number of benefits received captures state benefits but excludes local authority provided benefits, also shown in the table below. Nearly all lone parent families received child benefit, while the majority also received IS, Housing Benefit and Council Tax Benefit. Less than a

fifth of all families received child maintenance. However, 95 per cent of families with a lone mother not in work and in receipt of four or more benefits received at least one disability-related benefit, compared with 12 per cent of families receiving three benefits and hardly any (zero per cent) of the families in receipt of two or fewer benefits.

Table C.2 Sources of income by number of benefits received

	Number of benefits/tax credits received (including Child Benefit)			
Sources of income	**Two or fewer %**	**Three %**	**Four or more %**	**Total %**
Child Benefit	97	99	98	99
Child Tax Credit	18	91	67	64
Child maintenance	17	19	16	18
JSA	2	2	1	1
IS	77	92	86	86
Housing Benefit or rent rebate[1]	73	79	80	77
Council Tax Benefit[1]	82	87	93	86
Any disability benefits	0	12	95	19
Unweighted bases	*308*	*448*	*105*	*861*

Base: All lone mothers not in employment FACS 2006

Note: Multiple responses.

[1] These local authority-provided benefits are not included in the number of benefits received variable.

Households in receipt of a higher number of benefits also had, on average, significantly higher disposable incomes (equivalised income after housing costs) (see Table C.3). The households receiving four or more benefits had a mean weekly disposable income of £147, compared with £83 per week and £78 per week for households with three benefits and households with two or fewer benefits respectively. This result reflects the added income source of disability benefits received by the majority of families receiving four or more benefits. These families are also likely to face a higher cost of living as a result of one of more family members' long-term illness or disability (Zaidi and Burchardt, 2005).

Table C.3 Equivalised disposable income by number of benefits received

	Number of benefits/tax credits received (including Child Benefit)			
Income	**Two or fewer £**	**Three £**	**Four or more £**	**Total £**
Median	79.19	82.44	141.69	84.94
Mean	77.78	82.55	146.73	89.38
Standard error	2.04	1.77	5.61	1.57
Unweighted bases	*292*	*443*	*105*	*840*

Base: All lone mother not in employment FACS 2006

Note: Net household income after housing costs, equivalised for household size and compositions (Modified OECD scale).

Lone mothers receiving four or more benefits are both less likely to perceive parenting as their job and have lower intentions to move into work due to their disability or health problems. It seems the main constraint to them entering employment is not parenting responsibilities but their poor health or disability.

Appendix D Additional tables

Table D.1 The effects of background characteristics on Attitudes, Perceptions and Intentions in the work entry model

	A1	A2	A3	A4	A5	F1	F2	F3	F4	Intent
Age of the youngest child (ref: 0-1)										
2-3		-0.18***	-0.15**	-0.18***		-0.14**	-0.08			0.11^
4-6		-0.12*	-0.10*	-0.16**		-0.13*	-0.08			0.16*
7-10		-0.13*	-0.09	-0.19***		-0.16***	-0.13*			0.10
11+		-0.20***	-0.16**	-0.30***		-0.34***	-0.30***			0.18**
Socio-economic status of mother's last job (ref: never worked)										
Managerial, prof	-0.05	-0.02								
Admin, services	-0.11*	-0.12*								
Elementary	-0.05	-0.04*								
Number of children (ref: 1)										
2	-0.14***		-0.05		-0.13***					
3+	-0.18***		-0.13**		-0.11*					
Non-white										
	0.11*			-0.09*	0.15***					
Not in employment for more than two years		0.11*		-0.12*	-0.14**	0.12*				
Access to a car	-0.15***									
Education (ref: lower than GCSEs)										
GCSEs				-0.05						
A-levels or higher				-0.10*						
Other				-0.06						

Continued

Table D.1 Continued

	A1	A2	A3	A4	A5	F1	F2	F3	F4	Intent
Use of childcare (ref: none used)										
Formal only										0.04
Informal only										0.16*
Mix of formal and informal										0.03
Number of benefits received (ref: 0-2)										
3		-0.08^		-0.08	0.10*	-0.09^	-0.09*			0.07
4+		-0.14***		-0.15***	-0.01	-0.13**	-0.02			-0.16**
Health (ref: no problems)										
Non-limiting problem			0.04					0.04	0.04	0.04
Limiting problem			0.13**					0.19***	0.32***	-0.18***
Expecting a new child*										-0.11*
Child disability and its changes (ref: not disabled at any point)										
Child became disabled at Wave 9								0.01	0.00	
Child disabled at both waves								0.00	0.08^	
Child disabled at Wave 8 but not Wave 9								0.09*	0.10*	
Changes to childcare (ref: no change)										
Started using			-0.11*							
Stopped using			-0.07							
Changes to benefits										
Benefits increased over the year (Wave 8-Wave 9)				-0.11*		-0.14***				

Continued

Table D.1 Continued

	A1	A2	A3	A4	A5	F1	F2	F3	F4	Intent
Benefits decreased over the year (Wave 8-Wave 9)				0.05		0.00				
Partnered between Wave 8 and Wave 9	0.09*	0.13***	0.13**	0.09*						

Note: Other variables like the age of mother, tenure, caring for other people in family, changes in health status of mother were also included in the model but are not presented since their effects were not significant.

* New child born over the following 12 months.

^ p<0.1, * p<0.05, ** p<0.01, *** p<0.001.

Table D.2 Correlations between the components of the Choices and Constraints module in the work entry model

	A1	A2	A3	A4	A5	F1	F2	F3	F4
A1	-								
A2	0.00***	-							
A3	0.31***	0.77***	-						
A4	-0.23***	0.85***	0.59***	-					
A5	0.81***	-0.12***	0.16***	-0.41***	-				
F1	-0.24***	0.69***	0.50***	0.79***	-0.38***	-			
F2	-0.12***	0.33***	0.45***	0.44***	-0.19***	0.80***	-		
F3	-0.08**	0.30***	0.48***	0.32***	-0.15***	0.65***	0.84***	-	
F4	0.08**	0.23***	0.39***	0.14***	0.00	0.43***	0.47***	0.68***	-
Intent	0.00	-0.17***	-0.10*	-0.26***	0.15**	-0.25***	-0.18***	-0.18***	0.00

^ p<0.1, * p<0.05, ** p<0.01, *** p<0.001.

Table D.3 The effects of background characteristics and Attitudes, Perceptions and Intentions on work outcome Attitudes, in the work entry model

	Standardized coefficient
Age of the youngest child (ref: 0-1)	
2-3	-0.05
4-6	-0.06
7-10	0.17*
11+	0.07
Not in employment for more than two years	-0.31***
Use of childcare (ref: none used)	
Formal only	0.16^
Informal only	0.11
Mix of formal and informal	0.14*
Changes to childcare (ref: no change)	
Started using	0.14^
Stopped using	-0.16*
Changes to benefits	
Benefits increased over the year (Wave 8-Wave 9)	0.12*
Benefits decreased over the year (Wave 8-Wave 9)	0.03
A4	-0.17**
Intent	0.27***

^ p<0.1, * p<0.05, ** p<0.01, *** p<0.001.

Table D.4 Selected results of the SEM of job retention

	Direct effect on obtaining and retaining work	Effect on parenting as a job (A4)	Effect on personal/ family constraints (P4)
Parenting as a job (A4)	-0.38**		
Personal/family constraints (P4)	-0.14*		
Age of the youngest child (ref: 0-1)			
2-3	0.02	-0.18***	
4-6	0.00	-0.16***	
7-10	0.18*	-0.20**	
11+	0.11	-0.30***	
Not in employment for more than two years	-0.20***	0.11*	
Socio-economic status of last job (ref: never worked)			
Managerial and professional		-0.03	
Administrative and services		-0.10*	
Elementary occupations		-0.04	
Non-white ethnic group		-0.09*	

Continued

Table D.4 Continued

	Direct effect on obtaining and retaining work	Effect on parenting as a job (A4)	Effect on personal/ family constraints (P4)
Education (ref: lower than GCSEs)			
GCSEs		-0.04	
A-levels or higher		-0.10*	
Other		-0.06	
Partnered between Wave 8 and Wave 9		0.11**	
Number of benefits received at Wave 8 (ref: 0-2)			
3		-0.07	0.03
4+		-0.15***	0.08^
Changes to benefits (ref: no change)			
Benefits increased over the year (Wave 8-Wave 9)	0.12*	-0.09^	
Benefits decreased over the year (Wave 8-Wave 9)	0.10	0.05	
Child disability and its changes (ref: not disabled at Wave 8 or 9)			
Child became disabled at Wave 9	0.09*		0.01
Child disabled at both waves	0.01		0.07
Child disabled at Wave 8 but not Wave 9	0.06		0.09*
Mother's health at Wave 8 (ref: no problems)			
Non-limiting problem			0.02
Limiting problem			0.30***
Mother's health at Wave 9 (ref: no problems)			
Non-limiting problem	-0.03		
Limiting problem	-0.12**		
Use of childcare at Wave 9 (ref: none used)			
Formal only	-0.01***		
Informal only	0.06		
Mix of formal and informal	0.10*		
Changes to childcare between Wave 9 and Wave 10 (ref: no change)			
Started using	0.05*		
Stopped using	-0.04		
Base: Lone mothers not in employment at Wave 8			FACS 2006-2008

Table D.5 Selected results of the SEM of attitudinal change

	Direct effect of work entry on the change in attitudes
A1: Motivation to work	0.011
A2: Motivation towards parenting	0.026
A3: Social stigma of staying at home	0.023
A4: Parenting as a job	0.015
A5: Motivation towards combining work and parenting	0.060*

Base: Lone mothers not in employment at Wave 8 FACS 2006-2008

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This working paper presents findings from longitudinal analysis of c.800 lone mothers who responded to the Families and Children Study (FACS) between 2006 and 2008.

The analysis utilises data from the Choices and Constraints question set which was designed to capture the complexities of decision-making for parents around work and caring in order to better understand their decisions, motivations and barriers with regard to employment.

Structural Equation Modelling (SEM) was undertaken to explore the relationship between some of the background characteristics of lone mothers who took part in FACS and how these interact with their attitudes, perceptions and intentions, which in turn impact on their employment outcomes.

This analysis includes substantial technical detail as it was undertaken in order to explore the value of applying SEM to the Choices and Constraints question set. It was commissioned as part of the Lone Parent Obligations evaluation programme.

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