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**An Assessment of the Input Approach to Estimate Household
Childcare the case of Plymouth, UK**

by

Hoayda Darkal

A thesis submitted to Plymouth University

in partial fulfilment for the degree of

Master by Research

School of Geography, Earth and Environmental Sciences

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AN ASSESSMENT OF THE INPUT APPROACH TO ESTIMATE HOUSEHOLD CHILDCARE THE CASE OF PLYMOUTH, UK

Hoayda Darkal

Abstract

One of the major limitations of the Gross Domestic Production (GDP) is its failure to record non-market transactions. Household childcare constitutes one of such transactions which are omitted in the GDP measure. Since 2003, an attempt has been made to account for this in the UK, on an experimental basis, in the Household Satellite Accounts (HHSa), using an output valuation approach. This study tests the application of the input replacement cost approach to estimate household childcare and its unreported contribution to GDP in the UK. A multi-method approach was used consisting of primary time-use diaries completion and in-depth interviews conducted in selected areas in Plymouth. This was supplemented with UK's Time Use Survey 2000 data evaluated at present day values, to improve representativeness of the results. Sampled households are families of married or co-habitant couples with children aged <15 years.

Results at the micro-level show that, the cost of household childcare is £17-23 thousand a year per household and 37-38% of this cost is devoted to talk-based developmental activities. Families spend an average of 7-9 hours per day on childcare activities, with longer time spent during weekend days and in households with more children. A multiple-childcare arrangement model is found to be adopted by the studied families influenced by factors such as: child's interests, parents' employment, parent's opinions of paid care, the high cost of institutional care and the availability of grandparents' help. In addition, the strong relationship between mother's employment and childcare settings has been confirmed. At the macro level, the estimated contribution of the monetary value of household childcare is found to be 9.1-12.13% of

the UK's GDP. Policy implications include improvements in employment policies enhancing flexible working conditions, longer maternity and paternity leave, and part time jobs; improved recognition of unpaid child carers and the nationwide development of advisory services that reach wider numbers of parents. This study also recommends research investigating factors influencing the time and cost of household childcare (e.g., ethnicity, religion, etc.), the employment of input approach in the UK's HHSA, and continuation of the UK Time-use Survey in the future to capture any changes taking place.

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Author's Declaration

At no time during the registration for the degree of Research Master has the author been registered for any other University award without prior agreement of the Graduate Committee.

Work submitted for this research degree at the Plymouth University has not formed part of any other degree either at Plymouth University or at another establishment

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A programme of five modules was undertaken, which included; Econometrics, Economics, Quantitative Analysis 2 - Bivariate Analysis, Research Methods and the Research skills.

Many skills development sessions were attended, which were; International Students-support with English Language, Overview of searching and accessing information Resources, SPSS, Introduction to EndNote, Research Methodologies, Writing for Research Publication, Getting the most from the conference, Project management, Developing writing skills, Making progress in Research degree, Research Methodology.

Relevant scientific seminars, in addition to workshops and conferences were attended;

- Poster presented at Plymouth University Postgraduate society Annual conference, June 26th 2012.*
- Project presented at the CARS research symposium at Duchy College, July 5th 2012.*
- Attended meeting on the Opinions and Lifestyle Survey User organised by ONS, London, May 29th 2013.*
- Attended of the Festival of Methods for Studying Perceptions of Time workshop, Edinburgh, June 26th 2013.*
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Chapter 1: Introduction

This research focuses on unpaid childcare provided by family members of the household. Care activities; whether they are for all household members, elderly, ill, disabled or children have significant importance as the most demanding feature of non-market production done by household members. That significance comes from the direct effect of caring activities on the wellbeing of household members (Folbre, 2001). Childcare in particular stands out as investment in the human capital of both the household and the society for the future (Folbre, 2008). Inputs of childcare such as time and money should be wisely used in order to produce a better future, otherwise destructive outcomes for the society might result (Ironmonger, 2004). Childcare may be usually provided in many forms including; formal paid care provided by experts such as nannies, child-minders, or by institutions like nurseries, and on the other hand childcare carried out by family members or friends, which is also sometimes paid (ONS, 2013).

Haveman and Wolfe (1995) argued that in order to achieve better investment in children's human capital three major elements must be improved: intervention by governments or local communities, which shapes the opportunities of both children and parents (i.e. social investment); decisions and childcare arrangements that are made by parents involving the allocation of both time and resources assigned for children (i.e. parental investment); and the way children invest in themselves when they reach adolescence (Haveman and Wolfe, 1995). The adoption of certain types of care is the parents' choice, yet governments can affect parents' choice by altering the availability and quality of the paid service (Brilli, et al., 2013). That could be seen quite clearly in the UK, with the encouragement of formal childcare, which was the policy of the British government from the late 1990s until 2010. As a result of such policy, formal childcare per child for those aged less than five years has risen considerably (ONS, 2013). This may be reconciled with higher rates of mothers' employment during the same period of

time. Still, records show that younger children in the UK, who are less than five years old, have much less time in formal care than older children (ONS, 2013).

1.1 Background to the current research

This study focuses on unpaid childcare that is done by family members of families with married or cohabitant parents and attempts to estimate the significance of its monetary contribution to the GDP. In addition, it investigates parents' decision-making processes and their time allocation arrangements. It is based on a case-study in the south west of England, in the city of Plymouth. By trying to measure the monetary value of household childcare in the UK, this study attempts to highlight the significance of the contribution of childcare to the national economy. This chapter brings together an overview of the study, introducing a brief rationale for its attention to the setting of national accounts and the presence of unpaid household activities. It continues to look at the features of household production and childcare activities. Then, the knowledge gaps are reviewed, delivering the basis for the objectives of this research, which leads to the research aims. At the end of this chapter, a summary of the structure of this thesis is given.

1.1.1 The System of National Accounts

In the conventional System of National Accounts (SNA), households are usually considered as the final consumers of the goods and services in society (Ahmad & Koh, 2011). Also, what the households produce for the market is included in the SNA, unlike the goods and services produced for the households' own consumption (Ahmad & Koh, 2011). The System of National Accounts (SNA) is a recurring group of macroeconomic accounts based on a set of internationally accepted concepts, classifications, accounting rules and objects of measurement, such as GDP. The applied accounts present sets of data, so they can be employed for economic analysis and policy-making. One of the most commonly used indicators of the SNA is Gross Domestic Product (GDP). GDP is the market value of all final goods and services produced within

a geographical area within a given period of time (EPCE, Public Health and Food Safety, 2010). GDP represents, in a single number, the whole value of all final goods and services produced in a specific country during a defined period of time. It provides a simple vision of market activity; and the shifts that occur in its value over time are pivotal in revealing the significance of that country's economic growth.

Moreover, it is used in facilitating economic comparisons at the international level (Lequiller and Blades, 2006). The goods and services are valued in GDP depending on the price and the quantity of their final value (EPCE, Public Health and Food Safety, 2010). GDP numbers are used to calculate government debt; moreover International policies are influenced by GDP figures such as the European Social Funds policy (EPCE, Public Health and Food Safety, 2010). Development aid policies and the effect of aid programs are measured by their impact on GDP growth. In addition, international programs for reducing poverty use per capita GDP to identify target regions and to assess the results of actions taken.

However, assessing economic growth by GDP leads to some controversies about its legitimacy as a proxy of social welfare and development (e.g. Arrow, 1973; Kuznets, 1941; Solow, 1974; Stiglitz, 2005; Sen, 1993, 2000). One of the critiques of GDP is that it does not include basic measures of people's well-being, such as unpaid labour. This is more likely to cause imprecise international comparisons of economic activity (Ahmad & Koh, 2011). In addition, GDP is more involved with current economic activities instead of economic and social capital assets (Kuznets, 1962; van den Bergh, 2007). Despite such limitations, GDP is still used and its findings are significant due to the simplicity of its measurements.

According to Frazis and Stewart (2010), including household production values as income proxies would produce a more equally scattered income measure because

unpaid work varies much less than paid work (Frazis and Stewart, 2010). On the other hand, there are those who claim that GDP should be separated from the welfare of the population (Cobb et al., 1995), and claims in favour of the exclusion of non-market services were arisen (Ahmaad & Koh, 2011). Yet, as an attempt to overcome the limitations of GDP, it has been suggested that approaches based on well-being, including sustainable development (United Nations, 1987) and happiness (Layard, 2006), should be included within GDP. Recently, as a consequence, the SNA has tried to widen the scope of the accounts to integrate indicators related to environmental and social factors (Jackson et al., 2005).

National accounts data are used by all policy, finance, public, institutions and international organizations. Many economic decisions which have a direct impact on the level of household income and expenditure are directly influenced by the data provided in national accounts (European Commission et al., 2009). Therefore, the accuracy of the data provided by these accounts should be a matter of concern. With this in mind, and since conventional National Accounts measurements, such as GDP, do not fully consider household non-market production as part of the household's final consumption, the SNA 1993 advised the development of a separate accounting framework - the Household Satellite Account (European Commission 2003).

The Household Satellite Account has been developed to provide the measure and value of unpaid goods and services produced by households (Holloway and Tamplin, 2001). It belongs to a group of satellite accounts, in which the production of domestic services by members of households for their own final consumption may be brought within the production boundary. This provides useful results for a more complete economic analysis (European Commission, 2003). The HHSA is basically a result of the expanded SNA production boundary to include non-market household production. As a result, the information given by the HHSA can be a useful source for policy makers wishing to acquire more holistic economic analysis (European Commission, 2003).

1.1.2 Household non-market production and SNA

The macro and the micro economy and welfare are affected in both direct and indirect ways by the productive activities in society, which include market and non-market production. The official statistical system, however, does not fully reflect this unpaid kind of activity. The current measures of well-being, whether by GDP per capita or by focusing on the rate of growth, are not wholly reliable when there is a significant amount of unpaid work or in cases where there is switching between paid and unpaid work (Weinrobe, 2005). This might cause an inaccurate picture of well-being and underestimate women's contribution to the economy.

Economists have argued that ignoring the income and wealth generated by non-market housework leaves gaps in the economic analysis. Moreover, some would debate that the national income is significantly underestimated by not taking into consideration income provided by productive household activities (Mitchell et al., 1921; Kuznets 1944; Clark, 1958). With the conventional measurement, the final consumption creates a misleading image of consumption when the goods and services produced by the unpaid labour of household members are not included (Kende, 1975). Disregarding unpaid household production activities could lead to distorted measures of poverty rates and income inequality (Abraham and Mackie, 2005).

Despite of being a contributing dynamic to economic welfare, the production of non-market services by household members is not properly measured by conventional GDP (Nordhaus and Tobin, 1972). Non-market production by household members, like housework, care (for children, the elderly, and the sick) and other forms of productive work have an impact on welfare, but are usually not included in GDP (Ironmonger, 2001). One third to one half of all economic activity is not counted in the traditional measures of well-being, such as GDP per capita (Miranda, 2011). Since there is no money being exchanged between buyers and sellers, the critical performances of care (childcare, eldercare, other home-based tasks, and voluntary work in the community) go completely unrecognized in the GDP.

Interestingly, much of women's household work, which tends more towards non-market production, is excluded from the accounting approach of the SNA- the reason being that this kind of work does not necessarily generate monetary income and hence its measurement is problematic. As a result, women's contribution to the economy and welfare of many countries is hidden (Eisener 1989, Ironmonger 1989, Goldschmidt-Clermont 1990 and Chadeau, 1992). The measured growth rates show upward trends as more and more women move into the labour market, but this only takes into account rises in market production and no assessments are considered for the consequential decline in non-market household production (Weinrobe, 1974).

Walker and Gauger (1973) claimed that the economic contribution of women to total production is not sufficiently represented by conventional statistics, even though women perform about two thirds of housework (Walker and Gauger, 1973). Consequently, there is a need to measure the non-market production of households in order to obtain reliable results from the accounts and, moreover, to ascertain the level of women's contribution to the National Accounts.

Non-market work matters to economists and policy makers, although each has different concerns. For economists it is important to recognise the reasons behind choices and decisions made by households, and to be able to foretell the prices on the time allocation in the labour market. Policy makers are concerned about the division of household activities among women and men in the household and they refer to women's attachment to household activities as a gender inequality (Folbre, et al., 2009). This appears to be a global issue since, as Miranda (2011) claimed, although the gender division of unpaid work is affected by the level of a country's development, women in general seem to be doing more of the non-market work than men (Miranda, 2011). 'New Home Economic' pioneers claim that non-market work raises the value of goods and services used inside the household (Becker, 1976; Gronau, 1980). However, the effect of non-market work on the value of household production combined with

monetary income has not been focused on (Frazis & Stewart, 2006). In addition, the relationship between the family's resources and needs is a household standard of living (Folbre, et al., 2009). Therefore, by estimating the non-market work, rather than depending on monetary income only, a better knowledge of the household's available resources can be gained. Moreover, the omission of any valuation of non-market work gives a false picture of economic growth and welfare, as feminists policy makers claim.

1.2 The Research Gap

As previously mentioned, the SNA has developed an extended branch of accounts, Household Satellite Accounts, in order to cover the shortage and limitations of excluding unpaid work in the conventional measurement of national and international production. The SNA 2003 suggests two means of valuing household non-market production; the input approach and the output approach.

The goods and services should be valued at their basic prices, as if they were offered for sale in the market. In order to proceed with this method, goods or services of the same kind must actually be bought and sold in sufficient quantities on the market to ensure that the market prices which might be assigned are both available and reliable. This is known as the 'output approach'. When reliable market prices cannot be obtained, a second procedure could be used, which is the 'input approach'. Here, the value of the output of the production activity is regarded as equal to the sum of the cost of their production i.e., the sum of intermediate consumption, compensation of employees, consumption of fixed capital and other taxes (European Commission, 2003).

The input approach is the most widely used method in measuring household childcare. This approach is based on the idea of assigning the value of the time devoted to the production activity.

That could be done by:

- *Calculating the opportunity cost: this is the wage that a person could have earned from a paid job during the period of unpaid work (Jackson, 1996; Folbre, 2008). Many have argued that this method should not be used for purposes of measuring household production. This is because with returns to labour and more hours of work, households with low monetary income may, with time-use based valuations, appear better off than they actually are (Goldschmidt-Clermont 1994, Blades 1997).*
- *Calculating the replacement cost: this is the wages of specialised workers in the market (Goldschmidt-Clermont 1994). The wages are based on the earnings of persons who could reasonably be used, on a market basis, to perform the non-market service produced in the household. Table (2.1) presents some attempts, which were made to measure childcare using the replacement cost of the inputs (e.g. Folbre, 2008 & Mullan 2010). However, replacement cost has some limitations; for example, it raises the necessity of choosing between using the wages of a specialised service producer or the wages of a general housekeeper for babysitting. Some would argue that household members provide lower quality services than specialised workers could provide, and that specialised workers are more productive than householders (Jackson, 1996). Furthermore, this approach is subject to both the availability of time use records for household work, and the complexity of getting the exact equal value of the household product in the market (Kulshreshtha et al., 1999). Time use surveys, for instance attempted to collect more data about household childcare by including some related questions. The questions were either about the time spent near a child “ who was with you?” or about the time spent being responsible for a child: “ was a child in your care?” or: “ were you looking after a child?” The latter was useful in finding out the passive childcare instead of being*

an activity in itself (Budig & Folbre, 2004). Yet, the productivity of time as an input varies according to the person who performs the productive activity. Therefore, output valuations are necessary (Kulshreshtha et al., 1999).

The output approach is mostly preferred in measuring household childcare, since it takes into consideration the final outcome of the production process and guarantees the inclusion of all the inputs, such as labour, capital and raw materials (Folbre, 2008). The output method is more frequently used in the rest of the National Accounts and its use in estimating household non-market production in general, and childcare in particular, provides more measurement consistency (ONS, 2013) In Table (2.1) few examples of the measurement of childcare depending on the output approach are provided, two of which were conducted in the UK i.e. ONS, 2013 & Mullan, 2010.

However, the outputs of productive activities in households are not easily characterised and valued (Quah, 1993), and identifying the outputs successfully is the main key to an effective output approach (Fitzgerald & Wicks, 1990). In the case of childcare, it is quite a challenge to determine and value the output of the activity. Generally, household childcare is one of the most difficult forms of unpaid work to measure precisely, due to the difficulties in gathering the necessary information.

Moreover, childcare is often passive and done while the carer is performing other tasks (Miranda, 2011). In the UK's experimental HHSA, the output method is used (Table 2.1), where the care provided at home is estimated by using the parallel cost of hiring a live-in nanny (ONS, 2013). Yet, by valuing the childcare as 'cared for child,' all childcare was estimated at the same rate (European Commission, 2003). The limitations of the output approach mentioned above imply that a well-managed input approach would be a preferable method (Abraham & Mackie, 2005).

It is acknowledged that, because of the challenging nature of the childcare estimation process, many economists were discouraged from launching such an estimate. The complexity of this procedure has been claimed to be due to the difficulty in measuring

the time dedicated for it and the problems surrounding decisions regarding the replacement wage for it (Folbre & Yoon, 2007). However, because of the vital significance of the time and quality of unpaid childcare for macroeconomics and public policy, and in order to put a monetary value on childcare time, a number of national statistical institutions are now attempting to gather time-use diaries from samples of the population (Folbre & Yoon, 2007). In addition, efforts and research to improve the measurement and evaluation of unpaid childcare have been promoted by many bodies such as the European Commission (2003) and the UK's Office for National Statistics. Therefore, this study attempts to rationally employ the input replacement cost method to estimate household childcare in Plymouth, UK; and it examines the results bearing in mind the existing childcare values of the UK's HHSA.

The aim of this research is to present an estimated value of household childcare by applying the input replacement cost method in the UK, whereas the current experimental HHSA depends on the output approach as the main measuring tool.

1.3 Research Aim and Scheme of work

The research concentrates on three dimensions; first, the childcare input replacement cost and the monetary value of household childcare in Plymouth and the South West of England, second, the household childcare and GDP in the UK, and third the exploration of parents' attitudes towards different types of childcare.

In order to achieve the basic aim this research has the following specific objectives:

- 1. To examine the application of input replacement cost approach in estimating household childcare at the household and national level.*
- 2. To investigate parents attitudes towards childcare in Plymouth.*
- 3. To draw the implications for household childcare measuring plans based on the findings of the research.*

Each objective is now considered in a little further detail as follows:

1) The first objective is to examine the application of input replacement cost approach in estimating household childcare at the household and national level. This is accomplished by means of a time use survey conducted in Plymouth and by assigning shadow wages to the recorded childcare time; and by subsequently assigning the same shadow wages to the published time use survey data on household childcare in the South West of England.

2) The second objective is to investigate parents' attitudes towards childcare in Plymouth. In addition, a revision of childcare policy schemes is carried out in order to obtain a deeper understanding and of the position of household childcare in British society. How much recognition is there? What are the childcare policies in the UK? How do parents see both formal and informal childcare? What factors dominate their childcare arrangements? How do they feel about it? What is the connection, if any, between the mother's employment and household childcare decision?

4) The third objective is to draw implications for childcare measuring plans based on the findings of the research. How to improve childcare measurement and who could work policies affect current household attitudes towards household childcare? Is there enough social and formal support for parents?

1.4 Structure of the Thesis

This thesis consists of six chapters. Chapter Two, 'the Literature review,' addresses the issue from the perspectives of households, children, and mothers, with or without paid work, fathers and grandparents. This chapter concludes by justifying the need for empirical study. Chapter Three, 'Methodology,' discusses the research strategy and data collection method designed for the study. Both secondary and primary data, which were used in this research, are explained along with details about the research sample. A framework for analysis is provided, which includes; assigning shadow wages to household childcare time and the outcomes of the in-depth interviews. Validity and

reliability are addressed through highlighting constraints and discussing the research process. Chapter Four introduces the study findings: description, and analysis with reference to the findings of the study. Chapter Five includes discussion. The data analysis outcomes and the emerging issues are discussed. These are then integrated with the literature to compare and contrast the two. Chapter Six, 'Conclusions and recommendations,' reflects on whether the aims and objectives of the research have been met. The findings are summarised and conclusions are produced with recommendations provided at the end.

Chapter 2: Literature Review

This chapter outlines childcare as a part of household production activities and the importance of childcare, both formal and informal. It discusses the relationship between childcare and the employment of women, fathers as main carers, and grandparents' role in childcare. A selection of literature sources are introduced relating to previous attempts to measure unpaid childcare. In addition, the linking themes of the research: parenting, gender, time allocation and childcare are discussed.

2.1 Household Production and Childcare Activities

In National Accounts, the household sector consists of all occupied households. These include institutional households made up of persons living in hospitals, retirement homes, convents, prisons, etc. for long periods of time. In this research, households are defined as the family who live in the same house. The performance of these fundamental units was disregarded by economists until the 1950s (Becker 1981).

By giving attention to the household, economists have been able to explore the causal means by which the rules of the market administer the consumption, production, and welfare of family members and the structure of the family itself. Households can be considered similar to firms; they are obligated by restrictions involving the physical capacity of members, available financial, time and socio-cultural morals (Bryant, 1995). However, it should be taken into consideration that profit maximisation is not always the sole ambition of households, as it is with companies. While household economists agree that financial benefits can explain much of the behaviour of householders, pursuit of happiness, health and comfort nonetheless has the potential to play a leading part (Bryant, 1995).

The term 'household production' indicates goods and services produced in the household by its members merging their unpaid labour with obtained durable and non-durable consumption goods (OECD, 1995). It is the production of goods and services by the members of a household, for their own consumption, using their own capital and unpaid labour. The process of household production engages the transformation of purchased intermediate commodities into final consumption supplies by household members, using their own capital and their own labour (Ironmonger, 2001). Households can also acquire goods and services from markets and boost their usefulness by choosing combinations of both market and home-produced goods, although that is a subject to access to technology and time availability (Bryant, 1995).

One of the first attempts to outline household production was by Margaret Reid. She said: 'If an activity is of such character that it might be delegated to a paid worker, then that activity shall be deemed productive' (Reid, 1934: p.11). Although that could only be said about the work itself, not the leisure that a household productive activity might bring to the person who performs it, the "third person criteria" does identify unpaid activities as work and does not just restrict them to the theme of leisure (Folbre, 2008). Still, the non-market production of that work is not represented in the conventional national accounts, even though that work includes such a wide spectrum of activities as providing accommodation, preparing meals, washing clothes, cleaning, repairs, taking care of elderly or disabled family members, providing transportation, gardening, maintenance of the house, and childcare.

2.2 Childcare

Household childcare is often designated as unpaid care. This usually applies to care given by family members, such as parents, grandparents and siblings, as well as friends (Holloway & Tamplin, 2001). Household labour devoted to childcare refers to the unpaid work that household members expend in taking care of children in different

ways, such as physical care, teaching, reading, accompanying, etc. The type, amount and quality of care that could be provided to children in the household is influenced by many factors, which include ethnicity, the employment or unemployment of the mother, the marital status and education level of the parent/s, the number of children in the household, the household income, the age of the children and whether the latter have special needs (NICHD early childcare research network, 1997). Childcare activities are often classified under the following categories (Equal Opportunities Commission, 2005):

- Physical care and supervision (e.g. supervision indoors or outdoors, feeding, dressing, etc.).
- Development care (e.g. helping with homework, providing guidance in doing something, reading, playing and talking with the child).
- Accompanying the child (e.g. to the doctor, a lesson or other activity).
- Other childcare, travel, preparing food, etc.

Despite the outstanding importance of the work performed by family members in taking care of the actual citizens of the future, who will be, for instance, the farmers, doctors, teachers or leaders of the society (Folbre, 2001), household childcare as a non-market productive activity, usually has no public documentation of its quantity and value (Dalenberg et al., 2004). Hence, there have been attempts to build up the methods, which could be applied in the measurement of unpaid childcare. These patterns of methods generally include: valuing the quantity of care as the number of children looked after a day; or by estimating the cost of putting the child into paid childcare (output); or by assigning the value of the labour dedicated to childcare (input) (Dalenberg et al., 2004; Ironmonger, 2001; Folbre, 2008).

In view of the fact that the time spent on unpaid work is "a cost" (Becker, 1965) most of these methods take time use as the base for the measurement. Household childcare time could be spent on three categories of activities: primary activity, secondary, and being with a child, which is defined as "passive childcare" (European Commission,

2003). Time use surveys are more often employed to estimate time spent on household work in general, including childcare, but the way in which it is recorded and measured has important implications for the total value of household production (European Commission, 2003). Yet, measuring childcare time, unlike other household activities, is not a straightforward procedure. Taking care of children is an ongoing responsibility that continues around the clock every day, and defining such time is a critical confusing issue to start with (Ironmonger, 2004; Budig & Folbre, 2004). Furthermore, as mentioned in Chapter One, the complexity of defining and measuring the time of household childcare has discouraged use of this method, in addition to the difficulty in deciding on the wage rate to assign such work (Folbre & Yoon, 2007).

It is important to point out that assigning a monetary value to household childcare time does not suggest parents should be paid for it. Doing so, however, aims to emphasise the shortcomings of the conventional measurements of parents' living conditions, which undervalues the degree of their influence on the economy as a whole (Folbre, 2008). Besides, it has been acknowledged that various skills which children obtain from both physical and interactive child care activities, especially in early childhood, have critical impact on their life chances as adults (Heckman, 2006). Both the quality and the type of childcare cause significant changes in children's development. Characteristics of childcare frequently noticed to be linked to behavioural development, are associated with the relationship between the child and the care provider (Hansen and Hawkes, 2009). Therefore, it is important to understand how much and in which aspects parental and formal childcare affect children.

2.2.1 Parental care

Parental childcare seems to have major consequences for the child's interest and wellbeing (Bonke & Greve, 2012). Some studies (e.g. Parke, Burks, et al., 1994) demonstrate three roles played by the parent in the child's life: an interactive partner

who helps in starting and keeping social relationships with others; a direct instructor who educates and supports the child in dealing with new situations; and a provider of opportunity who manages the child's social experiences outside of the family (Parke & Buriel, 1998; Morrison et al., 2003). These roles have a strong influence, by which parents form the child's social skills that impact on the efficiency of his/her school adjustment (Morrison et al., 2003).

Moreover, the warm, structured, and emotionally receptive parent-child relationship is associated to positive cognitive and behavioural benefits in children (Conell, et al., 2002). Early parent-child interactions help to predict children's success in adjusting to their tasks at school and their long-term social and academic success, not only in the early stages but also through advanced years, like the third or even the sixth grade (Pianta & Harbers, 1996; Pianta et al., 1991). Furthermore, changes made to the type of parent-child relationship during the preschool stage are significant in forecasting a child's later school readiness (Parker, et al., 1999).

Maternal care, particularly, provides an important infrastructure in a child's life. The mother- child relationship is the most common predictor of the child's social and academic outcomes in early school time (NICHD, 2002). Moreover, it is positively related to better school readiness at school entry, and also school achievement (Conell, et al., 2002). Different academic achievements and social behaviours of children, especially in the early to mid-elementary stages, may be predicted from different qualities of mother-child contacts (Morrison et al., 2003). The characteristics of the mother-child connection were found to be related to the child's ability to develop relationships with teachers and other adults (Pianta, 1999). The early relationship between mother and child, in particular, was found to be related to the child-teacher relationship, and the social processes at home seem to be linked to processes at school (Pianta et al., 1997). The influence of this relationship continue to be noticed in

children's later school years and in adolescence, which shows the importance of mother care in developing the tools for coping with school life, socially and academically, all the way up to adolescence (Morrison et al., 2003).

Mother and child factors, such as the supportive quality of parental instruction, child self-esteem and childcare, were associated with the child's behaviour and competence in the classroom (Pianta et al., 1991). Boys who were insecurely attached to their mothers were noticed to be more troubled in their behaviour and less competent than securely attached boys (Cohn, 1990). The quality of maternal care given to the child, as mentioned, has a widely recognised importance.

Care provided by the mother was found to be crucial mainly in the child's early years. Children whose mothers had a full time job in the first or second year of the child's life were reported to be more defective to adjust than children whose mothers were not employed during their first three years (Belsky and Eggebeen, 1991). In their study of non-Hispanic white and African-American children, Han, Waldfogel and Brooks-Gunn, (2001, p. 352) found that the cognitive outcomes of white children whose mothers worked full time in the first year of their lives were negatively affected (Han, Waldfogel and Brooks-Gunn, 2001).

2.2.2 Formal Childcare

Formal care, on the other hand, is also credited with some positive outcomes as well. Children at good childcare centres perform better on cognitive tests and have better colleague interaction skills than children at low quality childcare centres or those who get household childcare (Clarke-Stewart & Miner, 2008). Children joining childcare centres achieve more in languages, academic skills and are better at interrelating with their peers. A positive effect could be discerned for formal care provided to children of less educated single mothers (Bernal and Keane, 2007).

However, children who get formal care tend to be more aggressive and disobedient than children who are receiving household childcare (Huston, 2001) and even more anti-social (Sylva et al., 2004). Vincent et al (2008, p.12) found that the importance of a home based environment had 'class' effects. The shortage of resources made some working class mothers believe their children were better off in a nursery because of the ability to access important facilities that support their development. Middle class mothers, in contrast, were said to have wider social networks for support and greater economic resources for child rearing activities (Vincent et al., 2008). Nevertheless, the mother's activities have an important impact on the child's wellbeing and health, and the allocation of her time, in particular, has significant consequences (Popkin & Solon, 1976).

However, mothers' ability to have a sensitive connection with their toddlers could become more difficult in cases where formal childcare was the major sort of care provided to the child (Huston, 2001). Such an arrangement would not be the best for the child, since the mother's care and her interaction with the child had the credit for the social and academic success in early adolescence (Fergus, et al., 2003).

The duty of raising the upcoming generations, which family members often take responsibility for, is certainly beyond monetary value. For many parents spending childcare time with their own children is irreplaceable, and for a child such value is perhaps inestimable. The United Nations Convention on the Rights of the Child demands that " the nation shall provide appropriate assistance to parents in child-raising" (Folbre, 2006). This help is represented in the UK via many channels: benefits for families and children, help for families and children, benefits for maternity, benefits for paternity, benefits for adoption, help with the costs of a new baby – maternity grants from the Social Fund, benefits for children, Child Benefit, help for disabled children, Child Tax Credit, help with the costs of childcare, Child Trust Fund, and other help with the costs of bringing up children (Adviceguide, 2013).

Yet, this help only covers a part of total childcare costs (Folbre, 2006). Given the fact that whoever is performing the unpaid childcare is not only spending money on the process, but also time which could have been spent doing a paid job and contributing to GDP instead. Still, if children were not provided with proper child rearing, institutions would not be able to educate them, businesses would not be willing to employ them, and therefore governments would not be able to tax their incomes when they become adults to help repay any public debt (Lee and Miller, 1990; Folbre, 1994). Thus, having rough estimates of the monetary value of household childcare could highlight its importance and help in addressing the actual help that parents need.

2.3 Previous estimates

Many researchers have focused on the measurement of household childcare (for example, Ironmonger, 2004; Folbre, 2008; Mullan, 2010). However, given the complexity of such a procedure, further research has been always embraced. In addition, many organisations and official bodies are urging for more efforts to improve estimation methods. In Table 2.1 some previous measurements are presented, and the area, elements of estimate, year, method and limitations are displayed. As discussed in the first chapter, the output approach is the most preferable method, yet in case of childcare the output is difficult to identify. Therefore, in most countries feasible and well planned input approach was adopted instead. In Finland, by including all primary childcare activities without supervisory activities, the contribution of household childcare to the GDP was 4% (Varjonen & Aalto 2006). By following the output approach constructed by Ironmonger, both Australia and the UK have attempted to evaluate household childcare and results were 27% of the Gross Market Production, and 23% of the Gross Domestic Production respectively. However, this approach is in progress and its results are still deemed as experimental (ONS, 2013).

Table 2.1 Some of Previous Estimates

		ONS (2013)	Mullan (2010)		Folbre (2008)	Ironmonger (2004)
Year of estimation		2010	2005		2000	1999
Country		UK	UK		USA	Australia
Approach		Output	Input (replacement cost)	Output	Input	Output
Element of estimate	The included childcare activities	All	<ul style="list-style-type: none"> Primary Physical+ teaching+ accompanying. Combined physical and teaching activities. All care jobs. 	Being with parent/s	Primary care including supervisory	All
	The measured time	Child per hour	time spent doing the included activities	Time with parent/s	time spent doing the included activities	Child per hour
	The used wage	Live-in- Nanny	<ul style="list-style-type: none"> 10th percentile for teaching professional + Average of child-minder. Twentieth percentile of a child-minder's. Average of child-minder's+ twentieth percentile of a child-minder's. 	Average hourly wage of child-minder per child	Average hourly wage of childcare worker for physical care+ kindergarten teacher for developmental care	Live-in nanny
Outcomes of estimation		23% GDP	1.8-3.5% GDP 3.6-6.9% GDP 11.8-22.8% GDP	7.8% GDP	20000 \$ per child per year	37%Gross Market Production
Time use data		Residual approach	UK's TUS 2000 (adults' & Childs' diaries)		USA's TUS	Australian TUS 1997
How it differs from the methods of this current study		<ul style="list-style-type: none"> Not only unpaid child care provided by family members. Number of children cared for not who provide care. Child per hour 	<ul style="list-style-type: none"> One weekday+ weekend day. Only for households with adult's & child's filled diaries. Children aged >13. Variation in quality of care. 	Child per hour.	Children aged <12	Number of children cared for not who provide care. Child per hour

2.4 Childcare and employment

Childcare has a significant effect on the child, parents and on labour supply (Baker, et al., 2008). It was claimed that the potential labour supplied by women, could be influenced by the cost of childcare (Brayfield, 1995). On the other hand, the child's cognitive outcomes could be very closely related to the employment of mother. Han and Waldfogel (2001) found that working for long hours i.e. more than thirty hours a week during the first nine months of the child's age, has undesirable consequences for the child's development, even when the quality of home environment and childcare plus maternal sensitivity were controlled for (Han and Waldfogel, 2001).

In the UK, Childcare is a key policy issue, since about three-quarters of working parents stated that their childcare arrangements were not ideal (La Valle et al. 2000). Many UK policies highlighted the importance of increasing the employment rate among families with children in order to reduce child poverty (Viitanen, 2005). This has, some would argue, put more women in a situation where paid work was attractive and more accessible. However, challenging family poverty through employment could support the notion that only paid work is important and diminish the value attributed to unpaid care work, which promotes a further proposition, that formal childcare is better than household care (JRF, 2003).

" Many women do informal work for which they receive little credit, most notably the care of children and family" (Monroe & Tiller, 2001, p.819). Yet 54% of children living in poverty are in households where at least one adult is in paid work (Grover, 2007, p. 538) and 22% in households where a single parent works full time (Gingerbread, 2010). The relationship between the employment of people who have children, mothers in particular, and the childcare process tends to be strong. For example, Cheng (1996) found that having a child can discourage the employment of the caregiver adult (parent – guardian) (Cheng, 1996). Furthermore, the paid working hours of the parent are influenced by childcare costs (Connelly and Kimmel, 2003).

2.4.1 Women, Childcare and Employment

As for mothers, the decision to join the non-domestic work market is usually associated with the decision to employ formal care (Viitanen, 2005). However, many factors need to be considered before this option is chosen, such as the price of formal childcare and also the expected wage (Viitanen, 2005). A Childcare Cost Survey in the UK (2012) indicated that nursery costs had grown by nearly 6%, while 44,000 fewer families were getting help with childcare costs since the tax credit cut in April 2011. Meanwhile, wages have continued to be almost stationary, increasing by only 0.3% (Family and Childcare Trust, 2013). Yet, there has been a transfer away from household childcare towards formal childcare for children aged less than five years old, as the latter increased by 36.4% between 1995 and 2010 (Fender, et al., 2013). Remarkably, less than half of working mothers had used any formal childcare in 2001 (Woodland et al., 2002). Three quarters of all families, including those with lone mothers and non-working households, used informal childcare, most commonly care provided by the grandparents (Woodland et al., 2002).

More mothers in the UK are in the labour market and the employment rate variance with women without children has narrowed over the last fifteen years (ONS, 2011). This is due to many reasons but it is mainly because most women prefer to have children at a later age, which is the age with the highest employment rates, i.e., 35-49 years old. This rise in participation of women with children in the paid work market was especially in part-time jobs and in cases where the mother was in a partnership i.e., cases where shared childcare was a workable option. In addition, since the recession started, employment for younger women without children has declined significantly (ONS, 2011).

Does this mean that the time which working mothers spend with their children is threatened by their working hours? If that were the case, it could give rise to problems related to the child's performance both physically and psychologically, since maternal childcare time is believed to be a high quality resource of care, as mentioned earlier.

Interestingly, time use data found that women's employment had little effect on the time that mothers spent with their own children, since they reduced the time devoted to housework and sleep (Robinson and Godbey, 1997; Bianchi, 2000; Sandberg & Hofferth, 2001). This means that more pressure is placed on mothers with regard to other activities, such as other household production and/or leisure, by the increased market work of those of them who take on the most responsibility (Howie, et al., 2006). In other words, working mothers reallocate time spent on unpaid activities, so that childcare hours are kept similar to those done by unemployed mothers. For some mothers, the scenario would be different if they had someone with whom to share the informal childcare, such as the father, a partner, grandparents, friends, or neighbours.. More married or cohabitating fathers have increased the time spent with children (Bianchi, 2000).

However, in their study of parental and non-parental care in Australia, Bittman, Craig and Folbre in 2004 found that there is a progress away from 'gender specialization' in childcare, yet at a very slow rate (Bittman, et al., 2004). Moreover, despite the growth of men's participation in domestic labour and childcare, it is still not equivalent to the rise in women's activity in the labour market (Gershuny, 2000). Nonetheless, even though men's participation in unpaid work has escalated in proportion to women's access to the labour market, women still spend about twice as much time as men in unpaid child care activities (Gauthier, et al., 2004). In addition, single mothers, in particular, spend more time with their children than mothers with a cohabiting father or partner, which might be understood as an attempt to make up for the absence of another parent (Sandberg and Hofferth, 2001). Therefore, it is essential to look with more deeply into the effecting elements of mother's role in childcare.

In the developed countries, a decline in fertility levels has been recorded, and rates of maternal participation in paid work have been boosted. A significant proportion of

families with children are headed by mothers on their own, who often rely heavily on non-parental care (Bittman, et al., 2004). Additionally, even though the mother's time has become more rationed, it is spread among fewer children. Yet, women are not a homogeneous group but vary in many aspects, such as age, class, disability and race, and a range of life experiences helps in shaping a variety of feminist viewpoints (Williams, 1989). Such differing attributes have created opposing viewpoints and approaches to the question of whether women should join the paid labour market or remain on welfare. Libertarian feminism sees women's accomplishment in the paid labour market as the significant key to women's equality and emphasises their right to join the market in equal competition with men. Therefore, the shortage in formal childcare supply is seen as the main barrier to paid work. Welfare feminism, on the other hand, places less emphasis on the recognition of women's equality to men but regards highly their exceptionality as the caring sex. Interestingly enough, as Grover (2007) claims, some mothers are more likely to make the decision not to do a paid job as a moral one, by which they challenge the idea that paid work is the ideal condition and that all members of society should join the labour market (Grover, 2007).

Demonstrating the social and cultural impacts on mothers' beliefs about paid work, division of labour and childcare choices, Duncan (2003) explored alternative ways of distributing paid work and family duties amongst mothers and partners. These ways differ from one social group to another. The study took account of the various ways that mothers allocated their time between paid work and care tasks, and how gendered responsibilities and divisions of labour are organized in two parent families, for example, whether fathers are involved in child caring roles.

Lister (2006) interrogates the importance of the change from the model of the 'male breadwinner' to the 'universal breadwinner' model where women participate in paid work together with men. Women as care givers were not substituted by a 'universal care-giver' model in which men combine paid work and care obligations in the same

way that women do (Lister, 2006). The care giver role is taken for granted and women are expected to combine this with paid work. Mothers do not see the care giver role as a restraint on paid work, but often concentrate on moral commitments, to the desire to give care to their children, before considering individual utility maximisation, and the economic costs and benefits of taking employment (Duncan, 2003).

Despite social and cultural groups expressing different preferences in childcare, many parents do not believe that formal childcare is best for their children. Many mothers see themselves as the best person to nurture their own children, with informal help from relatives and friends as the next best option (JRF, 2003). When it comes to a conflict between time devoted to paid work and household childcare, mothers prioritize particular sorts of activities with their children and reschedule their agenda to include them. Consequently, increased hours of maternal employment cause only slight reductions of time spent on activities with their children. This creates a move toward better quality care as developmental activities form a larger amount of childcare time (Bittman, et al., 2004).

2.4.2 Fathers and Childcare

The role of fathers in household childcare seems to be increasing and the 'gender gap' in this matter has narrowed (JRFs, 2000) yet the stereotype of the male 'breadwinner' still dictates the general views of parents and children towards parenthood. Mothers still perform most household and childcare activities, although in a few households where mothers are in full-time paid jobs, fathers are the main child carer. In general, the father's usual household activities include keeping discipline, helping with homework, organising excursions and visits, shopping, joining in computer games and watching or participating in sports (JRFs, 2000). However, in households where both parents have paid work, childcare duties are equally shared (JRFs, 2000).

Studies have stressed and argued many influences of the father's involvement in

childcare, such as children's wellbeing (Carlson & MaLanhan, 2004; Bonke & Greve, 2012); higher marital stability (Wengler et al., 2008; Sigle-Rushton, 2010); improved fertility rates (Duvander & Andersson, 2006; de Laat & Sevilla-Sanz, 2011); and work-life balance for fathers (Hook, 2006). Additionally, a father's childcare is more likely to facilitate their partners' further participation in paid work and diminishing income loss due to family duties (Boll, 2011; Light & Ureta, 1995). Considering such effects, parental leave for fathers has been established in European and most industrialized countries. Most fathers consider two points in deciding whether or not to take parental leave: the opportunity costs of the sacrificed wage in the paid work, and the partner's income (Reich, 2011).

2.4.3 Grandparents and Childcare

The British Social Attitudes Surveys show that there are nearly 100,000 children under 13 who are living with a grandparent (Richards & Tapsfield 2003). Moreover, this seems to be an increasing phenomenon in many Western countries, where more children are being brought up by their grandparents because of the inability of the children's parents to fulfil their responsibilities (Backhouse, 2009).

Grandparents' involvement in childcare, however, does not consist solely of taking over the parental role. A study by the Childhood Wellbeing Research Centre found that grandparents play an outstanding role in performing childcare functions and supporting maternal employment and study (Statham, 2011). That study revealed that 35 per cent of households with working mothers depend on grandparents as a part of their childcare arrangements. Grandparents' involvement was even higher in certain cases: low income families, single mothers who go back to work before their children are six months old, younger mothers, part-time working mothers, and during holidays when children are of school age (Statham, 2011). A study conducted in Newcastle by Wheelock and Jones (2002) of 425 working parents found that more than half of Newcastle parents had care support from grandparents at least once a week,

combined with formal care, and particularly in school holidays or when the child or parent was ill (Wheelock & Jones, 2002).

This kind of childcare results in positive effects on the children's development, especially in the critical early years (Goodfellow & Lavery, 2003). Also, children being looked after by grandparents in their first few years have better vocabulary skills (Statham, 2011). Grandparents, in general, enjoy taking care of their grandchildren but, by doing so for longer hours, may often experience a negative effect on their health and wellbeing. Hence, this positive role played by grandparents needs support and recognition (Goodfellow & Lavery, 2003). Still, the 'moral economy' of childcare that is provided by grandparents, is often given without complement by parents (Arthur et al., 2003). However, the option of having grandparents involved in childcare may be unavailable for more and more parents because of the geographical spread of extended families and the increasing employment rates of older women (Wheelock and Jones, 2002; Arthur et al., 2003).

2.5 Summary

By reviewing the existing literature, it may be seen that more research is required in order to develop estimation methods of household childcare. Given its importance, unpaid childcare needs more focus and by being able to present its monetary value, the required help and support towards such activity could be more effectively planned. Therefore, this study is trying to apply the input replacement cost method on both the household and national scales in order to investigate its obstacles and to estimate the potential contribution of household childcare to the GDP of the UK. Furthermore, according to previous studies, parents attitudes towards childcare have been influenced by many factors and childcare arrangements are much varied as a result.

Chapter 3: Research Methodology

This chapter explains the methodological approaches that were used to address the study aims and objectives mentioned earlier. Firstly, it discusses methodological approaches that are applied in social sciences, mainly quantitative, qualitative and multi-method approaches. Then it describes the chosen methods for this study. The details about data collection techniques are explained with a description of the limitations and problems faced. The ethical issues are discussed here also.

3.1 Methodological approaches

The methodological approach of any research directs the choice of methods to achieve the study aim. These methods can be decided according to the questions which the research is attempting to deal with (e.g., Shavelson & Towne, 2002, pp. 99–106). Some research methods are more suitable to specific types of research problems than others, and there is no such thing as ‘one right’ research approach (Denscombe, 2007). However, a good study will target the most feasible way to gain the best outcomes (Denscombe, 2007).

In this research, deeper information underlining the value of household childcare activities was required. Small scale quantitative and qualitative approaches were found to be both rich and feasible. The main element of data collection is to see how much time people spend on different childcare activities, how much the monetary value of that time is and what elements dominate household attitudes towards childcare. The multi-method approach is increasingly recognized as a helpful one in research that concentrates on complex issues. Thus, textual analysis of secondary data and available documents is used concurrently with time use diaries followed by semi -structured interviews.

3.1.1 Quantitative approach

In social sciences, the quantitative approach is considered as one of the essential research approaches. In this approach, consistent methods of data collection and analysis are often used in order to reach generalizations of the research outcomes (David and Sutton, 2004). The collected quantitative data is described in a numerical way, for example by numbers or percentages. This methodological approach includes a questionnaire survey, a time-use survey, experiments and observations. Time-use data are quantitative reviews of what people do over the course of a defined period of time (ESCAP, 2000).

However, the quantitative approach has some limitations which have been assessed by many social researchers, such as David and Sutton (2004) and Bryman (2008). For instance, Bryman (2008) focused on four critiques of the quantitative approach: its poor ability to distinguish human and social schemes from natural world issues; the artificially designed measurement procedure of quantitative research could make it less exact and inaccurate; the link between research and everyday life is omitted in the standardised research procedures; and the artificial variables usually give a static view of the social world that is far from the dynamics of people's actual lives (Bryman, 2008).

3.1.2 Qualitative approach

The qualitative approach can be constructive, time inductive and interpretive (Bryman, 2008). It comprises a series of specific research methods, such as observations, in-depth interviews, focus groups and text analysis. Interviews provide the opportunity for researchers to capture participants' viewpoints related to the study. Unlike the quantitative approach which emphasises numbers, these methods concentrate on the meaning of people's behaviours and actions and are based on the belief that the interrelated meanings cannot be cut off from their environments (David and Sutton, 2004). However, the findings and outcomes obtained are subjective, since they are usually produced from connections and relationships between the researchers and the

people studied (Bryman, 2008). Furthermore, the findings of qualitative methodology-based research are accepted as limited and not suitable for generalization on a wider scale (Bryman, 2008).

3.1.3 Multi-method approach

As mentioned before, even though quantitative and qualitative approaches are different to each other philosophically and methodologically, each has its own advantages and disadvantages. Hence, it is not recommended to totally depend on one approach rather than another in research. In order to overcome their limitations, a multi-method approach has been developed (David and Sutton, 2004; Bryman, 2008). In the multi-methods approach, a combination of quantitative and qualitative methods is employed within the same research in an attempt to gain the optimum complementary advantages from both. The strength of the multi-method approach comes mostly out of its triangulation. This means that quantitative and qualitative research are combined to triangulate results in order to have them both equally verified (Bryman, 2008). Additionally, the use of one method could facilitate the other more affectively (Bryman, 2008). Moreover, both quantitative and qualitative methods may play a complementary role to one other when they are used to connect different aspects of the study.

In view of the points mentioned, and since diaries 'can be natural and strong when used in conjunction with other methods' (Ball, 1981, p.100), this study applies the multi-method approach to achieve its aims and objectives, using the self-completed time-use diaries in order to get a record of the time people spend on household childcare. Moreover, in depth interviews were conducted with participants who agreed to share their experiences in childcare and fill in time-use diaries.

3.2 Primary data vs. Secondary data

3.2.1 Primary data

The data collected for a particular study by the researcher is called the primary data. The data collection method could be customised to suit the research aim, which guarantees that the study is consequential, and the collected data are more likely to help in meeting the objectives of the research. Primary data can provide three major points that every good research should have: validity, authenticity and reliability (Thompson, 2000). It is important to have good quality data for the research, which depends fundamentally on the choice of a representative sample. A good choice of sample makes the collected data valid for generalization for the entire population. The authenticity of the research can be improved with a judicious choice of interpretation approach that suits the data type and with no alteration to the information given by the source of data (Silverman, 2000). Primary data can be collected from different sources: experiments and surveys which can be conducted with questionnaires, interviews or/and observations. However, the primary data collection process is usually time-consuming and done at high cost.

3.2.2 Secondary data

Secondary data analysis is 'an empirical exercise carried out on data that has already been gathered or compiled in some way' (Dale et al. 1988:3). Secondary data enable the discussion of the background of the selected investigation. These data can be datasets, existing published case studies, academic findings and literature related to the research area. It could contain the data provided by systematic reviews, from documentary analysis and the results of large-scale surveys, such as the National Census. Even though official statistics are the most frequently used secondary data resources, they could be produced from other sources, such as business records, personal papers and academic research (Bryman, 2008). These materials can

accomplish a basic or supportive function to the primary data. Although secondary data might be not as familiar and manageable as the collected primary data, nonetheless using secondary data make large scale analysis more feasible.

3.3 Methods applied in this study

In this study, the multi-method approach is justified as an appropriate strategy for answering the research questions and meeting the objectives of the study. Both primary and secondary data were obtained. Firstly, time-use diaries were distributed among households in Plymouth to be filled in with a record of the time spent on household childcare. That process was followed by semi-structured in-depth interviews with parents, who agreed to talk about their childcare arrangements and share their opinions on different related matters. In addition, the UK Time-Use Survey data set was used in order to obtain the times of household childcare which people recorded in a survey conducted in 2000.

3.3.1 Time use diaries

In order to choose a time-use methodology, many issues have to be considered, such as accuracy of the data, the invasion of a participant's privacy and the cost of the research (Juster, 1985; Robinson, 1985; Pentland et al., 1999). Many qualitative methods, like ethnography, random spot visits, and participatory action research, can come up with deep and strong time-use data but these could involve high costs and low scientific validity (Juster, 1985; Moss and Lawton, 1982; Robinson, 1985; Pentland et al., 1999). Usually three basic techniques are used to gather time-use data: participant observations, recall data through interviews, and self-completed diaries (ESCAP, 2000). Although direct observation is mostly agreed to be accurate and useful in cases of illiteracy, it is nevertheless expensive; it cannot report multiple persons per household or include all activities of one participant person, and the actions of the participants could be altered by the presence of an observer (Robinson,

1985, Pentland et al., 1999; ESCAP, 2000). Recall data through interviews is cheaper, yet biased results are more likely to be provided due to the recall process, which could cause false time estimation and uncover some activities (ESCAP, 2000). Another time-use technique is time-use diaries, which come up with better quality data, but could represent a burden on the participants, leading to low participation rates. Therefore, the researcher needs to make sure that the period during which a diary is written should be long enough to acquire the studied behaviour while avoiding the risk of not having effective completion through imposing too heavy a task (Corti, 1993). Therefore, considering the characteristics of this research, self-completed diaries were used. The basic building blocks of time-use data are activity and time (ESCAP, 2000).

Time use-data "are usually generated from time-use surveys by recording the activities and measuring the time spent on them by individuals. Time spent on activity is measured in terms of number of minutes or hours in specified period a twenty four-hour day. Time use data paints a quantitative picture of who does what and what else simultaneously during the day, for how long, how often, at what time, in what order, where, with whom, and for whom" (ESCAP, 2000:4).

When is the time use diary method usually used?

Time use diaries are used in a wide range of research that concern different sorts of human activities, including trends and gender differences in housework (Bianchi et al. 2000), personal care, employment, education, domestic work, voluntary work, social and community activities, travel and child care (Paolisso & Hames, 2010). In addition, the data produced are used in a variety of social science studies, such as parental time with children (Sandberg and Hofferth 2001; Sayer et al. 2004), religious participation (Presser and Stinson 1998), leisure (Schor 1991; Robinson and Godbey 1999; Jacobs and Gerson 2004), community involvement (Putman 2000; Sayer 2001) and in exploring the trends of people's leisure activities (Robinson and Godbey 1999). Diaries

can be employed in studies that investigate changes over periods of time and to gather data about behaviours and lifestyle types (Moule and Goodman 2009). Time- use diaries can be managed in two ways (Pentland et al., 1999): either as “leave behind diaries” (Harvey and Singleton, 1985), where the participant completes the diary on his or her own; or as “recall diaries,” where the participant is asked to recall his or her activities for the previous day (Harvey et al., 1991).

Time-use diaries provide the best prospect for measuring activities related to household production (Gershuny, 1979). The data produced by employing time-use diaries have been significant in highlighting the huge amount of time that women spend in household production activities (Vanek, 1974). Time-use data have been used as tools to find out the time inputs of household production (Short, 2000).

What is good about time use diaries?

Pentland (1999) finds time use diaries “comprehensive for the time period” (Pentland, 1999: 169). Meth (2003), argues that: “diaries are very useful methodological tools within Geography. Using diaries as part of a multiple method approach within a social research project is strongly recommended” (Meth, 2003: 203). Furthermore, talking about the advantages of time use diaries, Robinson said: “data collected through a time diary may be less prone to recall error....time diary methods produce rather reliable accounts of time use at the aggregate level” (National Research Council, 2000: 83). Moreover, Paolisso and Hames claim that time diaries: “produce valid and reliable descriptions of daily, repeated, and routine behaviors. ...The result is a good assessment of the typical day of activities for the study individual” (Paolisso and Hames, 2010: 366). Considering the strong points of time-use diaries Paolisso and Hames (2010) say “time diary approach, if it is feasible to use, it is a very efficient method for collecting information on daily, routine behaviors, including their sequence and duration” (Paolisso and Hames, 2010: 371). Since feasibility is a significant factor,

participants must be happy to work with the researcher in the first place in order to produce a time diary that is “detailed, accurate, and covers the entire specified period of study... the accuracy of time diaries depends on the training, reliability, and motivation of subjects to make accurate, candid, and timely reports of their behaviors” (Paolisso and Hames, 2010: 371).

Are there limitations to the employment of time use diaries?

In addition to the errors faced in all survey methods, time use diaries are especially likely to have errors coming from the participant’s conditioned responses, incomplete noting of information and under-reporting, insufficient recall, unsatisfactory cooperation and sample selection bias (Corti, 1993). Mostly, participants record only what they want to report. Hence, some activities of a sensitive nature may not be mentioned precisely (National Research Council, 2000). Moreover, respondents usually report more activities on the first day, which may be because respondents change their behaviour as a result of having the diary, or become less careful than when they started the diary (ibid). Furthermore, if data are gathered for more than one member of a household, like other methods which require self-completion of information, illiteracy of participants could represent a vital limitation (Corti, 1993).

Paolisso and Hames (2010) find that the “time diary has sampling biases that result in better information on routine, daily behaviors, and less information on the infrequent or irregular behaviour” (Paolisso and Hames, 2010: 366). Regarding the private and personal nature of diaries in general, respondents could also find it an unpleasant demand: filling the diary can be “time consuming, frustrating and perceived as time-wasting” (Meth, 2003: 203). An important point made by Corti (1993) is that better response rates could be reached when participants are recruited by personal face-to-face contact, rather than by post (Corti, 1993).

Time use diaries in this study

For this research, the time-use diary was designed using Folbre & Yoon's (2007) terminology of supervisory and direct childcare. In addition, the approach for valuing the kinds of parental childcare activities, provided by Mullan (2007) categorises these activities according to their type and considers whether the activity was done solely or combined with others. Furthermore, both of the time-use survey diaries those were used in New Zealand and Germany 2004 were employed as a guideline in the process. However, The United Kingdom Time Use Survey diary, 2000, had the dominant influence on the final design of the diaries in this study. Hence, most of the data collected in this research can be seen in the context of national data sets of the UK.

Time-use researchers have developed three concepts to measure parental investments in childcare: primary childcare, secondary childcare, and time spent with children. Primary childcare is childcare that is done as the respondent's primary activity and typically includes activities in which a parent is directly engaged in caregiving or activities that promote children's well-being. Secondary childcare is time spent doing childcare as a secondary activity (Allard et al., 2007). These diaries required specific information related to the time spent on child care and the activities carried out at these times. In the time-use diaries of this study, activities were divided into:

- 1. Unspecified childcare: such as helping the child.*
- 2. Physical care and supervision: dressing, washing, supervision indoors or outdoors, etc.*
- 3. Feeding the child: breast-feeding, helping to eat or serving food.*
- 4. Other specified physical care and supervision, such as changing nappies, combing the child's hair, putting the child to bed, watching the child playing in the playground or/ and waking the child.*
- 5. Talk-based care includes teaching the child: helping the child with homework or guidance in doing things.*

6. *Reading, playing and talking with the child, such as playing with the child or reading a story.*
7. *Accompanying a child, for example, taking a child to the doctor or waiting at a sports centre.*
8. *Other specified childcare, such as listening to the child playing the piano.*

A pre-coded diary design was selected in order to reduce the effort needed by the participants to fill it in, to reduce the work required to analyse the gathered data and to focus data collection on particular areas of household activities i.e. childcare. The diary had three social contact codes (marital status, age and number of children) and nine activity codes. In addition, two columns were added to ask about the person who was doing the activity and the number of children with whom the activity was done. At the end of each day the participant was asked to rate the typicality of that day and to date it. The instructions were mentioned on the first page.

The diaries were printed on A4 papers and each side of A4 covered a 7 hour time period. Consequently, four pages made up each diary day and these were stapled together. Each participant was provided with an information sheet, consent form, an empty envelop and time-use diary for two days with the contact details of the researcher and Plymouth University. Most of previous time-use studies and during the process of analysing the data, times are often amalgamated into 96 slots of the day to create a 'time-points file' (Harvey 1999, p. 27). Therefore, each diary day was divided into 96, 15-minute time gaps. Seven days is the most commonly suggested period of time for the diaries to be filled in, since activities and obligations are scheduled over this time frame (Harvey et al. 2003), such as is the case with parental childcare. For most, household work, leisure and childcare activities are likely to be planned on a weekly rather than a daily basis (Fisher 2010). However, in order not to make the task of completing the diaries too arduous for the participants, in this study the period was

two days, with ten minutes slots. Participants were asked to fill the diary for one weekday and one weekend day of their own choice.

3.3.2 Semi- structured Interviews

Interviews provide very different types of data (qualitative) from the data collected by time-use diaries (quantitative). They are used, if interpersonal contact is needed, to make it easier for the researcher to go through the viewpoints of participants. Three types of interviews are normally used in research, structured, semi-structured and unstructured. Structured interviews are a list of fixed questions for participants to answer specifically without further explanations following. This kind of interview is less time consuming, but does not give an in-depth view of the given responses (May, 1991).

Unstructured interviews, on the other hand, do not require much arrangement and depend totally on how much elaboration and thought-sharing the participants wish to give. They are used when rich, in-depth information is needed (Lofland and Lofland, 1995). Consequently, using unstructured interviews can be quite time consuming, yet could provide the study with much in-depth understanding (May, 1991). As a combination of the two mentioned types of interviews, the semi-structured interviews are formed (Robson, 2011). This type usually contains a number of questions that drive the talk to the points of interest while giving the opportunity to discuss an answer or a theme in more detail (Britten, 1999). It could be seen as "a conversation with a purpose" (Flowerdew and Martin, 1997; p111). It is much more flexible than the structured interview and provides more in-depth exploration guided by the various questions. However, the quality of the responses is much more reliant on the interviewer's skills (Patton, 1990).

In this study, semi-structured interviews were found to be the most suitable type to help in achieving the aims and objectives of the study. After filling in time use diaries, eight

participants who agreed to give more related information were interviewed. Interviews took place in locations and times decided by the participants. In most cases participants chose their homes to be a place for interviews, while others preferred Plymouth University campus. Interviewees were given information sheets about the study and informed that anything they said would be anonymous. With the participant's agreement, interviews were taped and each lasted about 45 minutes (Appendix C). A number of questions were set in order to uncover parents' attitude towards childcare, to become better acquainted with the childcare arrangements, and to clarify the justifications behind such attitudes. Participants were asked whether they feel they received any recognition as child carer and, if there was any conflict between paid work and childcare schedules and then asked to talk about their experience in filling the time use diary.

3.4 The Study Area

This research uses the case study approach in order to address the questions raised. The use of a case study is the analysis of a specific situation at a specific location at a specific point in time. Yin (2003) describes the meaning of case study as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when, the boundaries between phenomenon and context are not clearly evident" (Yin, 2003:13). Stake (1995) says; "case study is defined by interest in individual cases". The case study approach provides a defined clear focus on a controllable portion of the studied society. Case studies can be seen as investigative, instructive and/or informative (Yin, 1993 cited in Tellis, 1997), depending on the aims and stages of the research.

Faced with an extensively analytical subject, it has been conventional practice for many researchers to restrict their focus of study and analyze a specific case within the research sample. In doing so, it has been widely advocated that the case study approach is one of the most suitable methods to use when conducting in-depth

analyses of the sample. The case study approach has been used as a common research strategy in different fields of science, especially in social and political sciences, business studies, economics, and planning (Yin, 1994). "The case study, like the experiment, does not represent a sample, and in doing a case study, your goal will be to expand and generalize theories (analytical generalization) and not to enumerate frequencies (statistical generalization)" (Yin, 2003:10). In order to make the best use of this approach, the cases that are selected "should be easy and willing subjects, a good instrumental case does not have to defend its typicality" (Tellis, 1997:p6).

3.4.1 Plymouth

The case study area of this research is the city of Plymouth. Plymouth is situated in the South-West of England. It is the UK's fifteenth largest city by population, with 256,700 inhabitants (ONS, 2010) and the average household size is 2.3 persons. It is a region with a low-wage economy (Gripaios and Bishop 2005). And there are several neighborhoods within the city which rank high on the National Index of Multiple deprivation (South West Observatory Core Unit, 2011). Plymouth is the largest city in the South West of England and has 47,023 persons between 0 and 15 years old (ONS, 2001Census). It provides a good case study for this research (Figure 2.1).

3.4.2 Plymouth Super Output Areas

Although Plymouth is situated on the south coast of England, the city population has lower than national, and South-West regional, GDP per capita. Its neighbourhoods include several amongst the top ten in the UK in the Index of Multiple Deprivation. The research has been carried out across different Lower Layer Super Output Areas (LSOAs) in Plymouth; spread by using a structured sample of respondents. The survey considered the number and ages of children per household, which differs between the multiple deprivation status, in 2010, of different communities within Plymouth, as in all cities. Data for analyses of these differences are obtained from the Census, the

National Statistics Office, and provided for the different super output area levels (see Figure 3.3). The advantage of this is to obtain the sense of probable similarity or difference in the time spent on household childcare in general according to the Lower Layer Super Output Area (LSOAs). Super Output Areas (LSOAs) were developed to provide layouts that are of roughly constant size across the country, and whose boundaries would not change over time. Each LSOA has a minimum population of one thousand and a mean population of fifteen hundred, and they are constrained by the boundaries of the wards used for 2001 Census outputs (South West Observatory Core Unit, 2011).



Figure 3.1 Plymouth & the South West

(Source: Google maps)

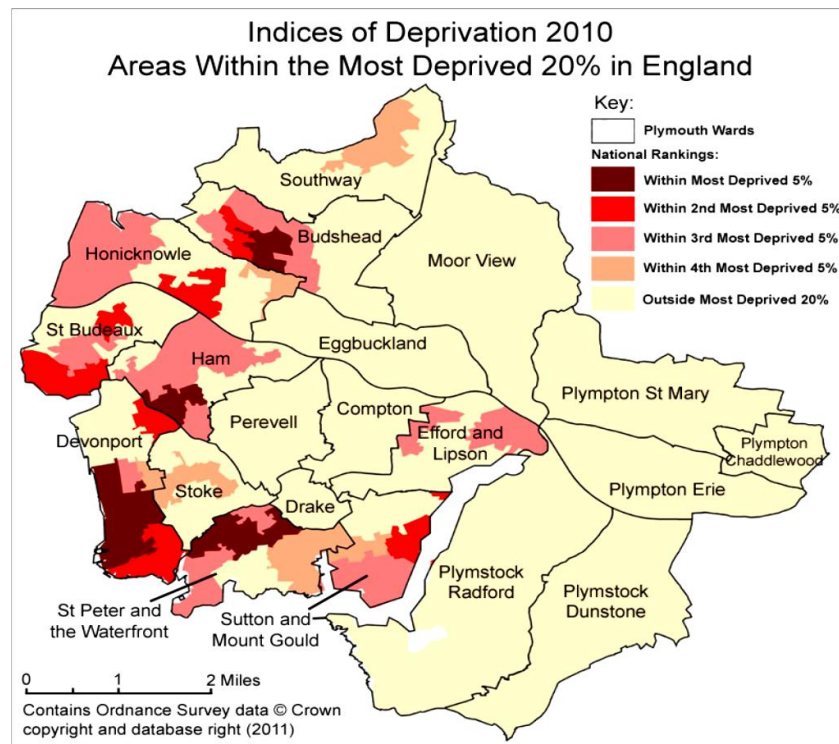


Figure 3.2 Plymouth's Most Deprived Areas (IMD 2010)

(Source: South West Observatory Core Unit May 2011)

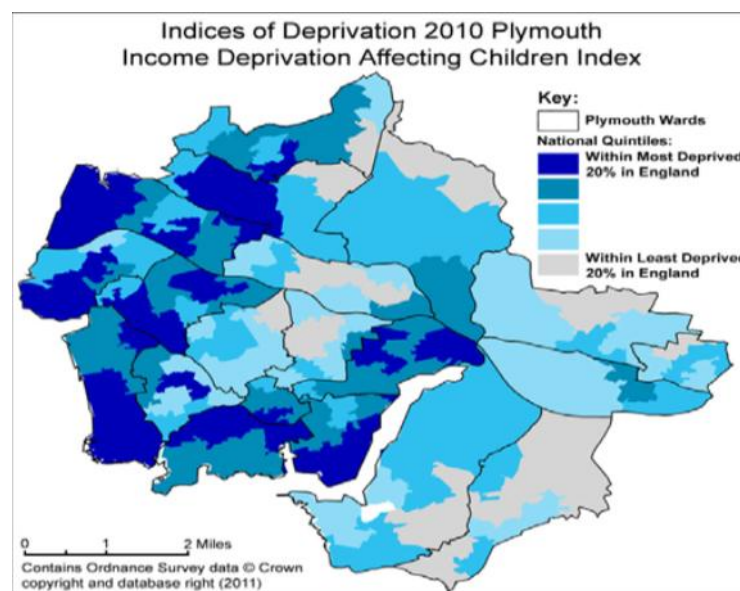


Figure 3.3 Deprivation by Domain and Sub Domain;

Income Deprivation Affecting Children Index

(Source: South West Observatory Core Unit May 2011)

3.5 Sampling

Sampling means choosing a portion of population to be investigated (Bryman, 2008). Sampling methods are classified as probability or nonprobability. In probability samples, every individual of the population has a probability of being selected. Probability methods include random sampling, systematic sampling, stratified sampling, probability proportional to size sampling, and cluster. The advantage of probability sampling is that sampling error can be calculated. Sampling error is the degree to which a sample might differ from the population. In non-probability sampling, the selected individuals from the population were chosen in non-random way. These include convenience sampling, judgment sampling, quota sampling, and snowball sampling. In non-probability sampling, the degree to which the sample differs from the population cannot be identified (Sarantakos, 2005; Bryman, 2008).

In order to collect the primary quantitative data i.e., time use diaries, this study used cluster sampling, which was found to be a suitable method to achieve the variety of the data, while remaining a feasible research project. Cluster sampling is a sampling method by which the studied population is divided into groups, or clusters and a random sample of these groups is selected.

All observations in the selected clusters are included in the sample. In this research, the ten LSOAs spread over the five deprivation groups within Plymouth were identified to provide a further focus. These groups range from most and more, deprived, to less and the least on the Index of Multiple Deprivation. Two pairs of LSOAs were selected from each group in order to provide areas that can be contrasted. Considering the household as the study unit, the time-use diaries were randomly distributed among forty households within each LSOA, counting six households as the interval between each.

The number of surveyed households within the LSOA was determined by:

$$n = \frac{NZ^2P(1 - P)}{Nd^2 + Z^2P(1 - P)}$$

Where; *n*: sample size, *N*: society size, *Z*: (1.96), *P*: (0.5), *d*: (5%).

Table 3.1 Sample Areas

Deprivation groups	LSOA	no. households
<i>Most deprived</i>	021A	629
	011A	664
<i>More deprived</i>	011B	658
	024D	659
<i>Deprived</i>	011D	666
	023C	559
<i>Less deprived</i>	016D	632
	017E	635
<i>Least deprived</i>	016E	623
	012E	613

Even though face-to-face contact was assured in the drop and collect method of distributing the diaries, the respondent rate was too low with very few filled diaries returned. That was likely due to the following: most of the approached households did not show any interest in participating at any level, seeing no immediate benefit in doing so; others had no children and therefore did not meet the initial requirement for the study i.e. having at least one child in the household. Although some participants who have children showed interest in filling the diaries, they failed to give the diaries back. That might be because they found the process too time consuming and demanding. Also, some may have felt that they might be judged as parents according to how much family time they spend, even though the confidentiality of information was confirmed and the objectives of the study were provided. However, the scheduled plan and

sample of the research was followed for two months in an attempt to reach a sufficient level of respondents. During the two months, households were approached at different times of the day and on different days of the week. As a result, four hundred diaries were delivered and one sufficiently completed diary was obtained.

With the intention of getting a better response rate, an attempt was made specifically to target households with children, again ensuring the anonymous nature and confidentiality of the data. Therefore, convenience sampling was chosen. Convenience sampling is used in research that is interested in getting an inexpensive estimation of the truth, and the sample is selected because it is convenient to the purpose and aims of the research. To select a convenient sample, nurseries and schools in Plymouth were contacted by phone, e-mail and personally. These were found on the Plymouth City Council and Day-nurseries websites. However, only eight nurseries agreed to help. Staff at these nurseries helped in asking parents to complete and return the diaries within ten days. One hundred and sixty-five diaries were given to the nurseries and twelve completed ones were collected.

With a poor rate of data, snowball sampling was followed next. With snowball sampling, a few individuals from the general population are recruited as participants and then asked if they can suggest more participants from the same population (Sarantakos, 2005). Thus, some participants, who provided their contact details were phoned or e-mailed. The contacted parents recommended other parents from their acquaintances that, they believed, would be happy to participate in such a study. More diaries were given to the suggested parents and interviews were conducted. With snowballing, participants' background and demography tended to be the same for some levels within the sample. Snowballing, however, helped in getting data from households which did not send their children to nurseries; therefore a spectrum of information was successfully achieved. That process came up with eight well filled time- use diaries

followed by eight in-depth interviews.

Literature review of studies on the time- use theme has shown that hardly any have been built on primary data. Given the difficulties confronting the data collection procedure in getting a sufficient response rate for this research, it was decided to extend it and adopt a dependency on time-use studies from secondary data sources in order to estimate household childcare in the South West and the UK as well. Although this study analyses and investigates the primary data, which was collected from Plymouth households 2012-2013, the UK time-use survey data set, which was proceeded in 2000, has been employed and assigned the current wages.

In order to measure the care time input on a larger scale and to investigate the context of Plymouth as a part of the south west region, the UK 2000 TUS was carried out in Great Britain and Northern Ireland by the Office for National Statistics and produced 20,981 diary records; with 1953 respondent households of all types of families that had at least one child aged 0-14. All participants in the targeted households who were eight to thirteen years old filled a child diary, and those who were fourteen and older filled an adult time-use diary for one weekday and one weekend day. Participants recorded the main and secondary activities they performed during the chosen days. The diaries had two hundred and fifty coded activities with ten minute time periods including eight separate distinct codes for “childcare of own household members”.

Although “the quantity of parental time is unrealistically low” (Folbre, 2008; 126) in the time diary results of such surveys, this study tried to measure the monetary value of the household childcare in the south west recorded in the UK TUS 2000. Since a similar type of time- use diaries were used in both surveys, both primary, (21 households diaries), and secondary data, (97 households diaries in the South West), were analysed.

This analysis was not used to compare the two time-use studies since the primary data is limited and therefore it could not be representative of household childcare time in Plymouth. Although the primary data of the time input was valued, it was mainly used for in-depth exploration of families' attitudes. Moreover, it facilitated closer observation of childcare arrangements, which helped to allocate the parallel paid careers for the valuation stage. In addition, it was sought to provide a sense of the monetary value of household childcare on such a small scale.

On the other hand, the UK's TUS 2000 records for both the south west of England and the UK were mainly used to estimate the contribution of household child care to the UK's GDP 2012. For this research, households that responded to the TUS 2000 were not all included. Focusing on the south west region only, adults' diaries were used and households with at least one child under fifteen years old were selected. Households that filled two diaries for a week day and a weekend day were only considered. Only diaries that were approved to be suitable for analysis by the source, i.e. ONS, were included. Then, households of married or cohabitant couples with children type were chosen. The resulting sample includes therefore 97 households. These selective considerations could be part of the limitations of the study has. Yet attempting to define the sample of interest helped in shaping a proper and feasible analysis for a master degree project.

3.6 Framework for analysis

This study sought to focus on two aspects: the monetary value of household childcare and parents' attitudes towards childcare arrangements. It started with collecting the amount of time that households in Plymouth spend on household childcare. Then, by assigning the shadow wages of parallel careers in the paid work market, the study tried to assess an amount in pounds sterling of what that time should cost. Using the same assigning strategy, household childcare time in the South West has also been valued.

This was followed by an attempt to estimate the contribution of unpaid childcare made by householders to the GDP of the UK. The in-depth interviews were analysed using thematic and iterative analysis, with the intention of obtaining a deeper insight into parents' childcare situation and their time allocation strategies at the same time focusing on the driving factors behind their attitudes. By conducting such deep interviews on a small scale, this study aimed to explore the depth of experiences and conceptualisations held by participants, which sometimes revealed points related to the stimulating literature on the subject and sometimes reinforced the need for further research.

3.6.1 Allocating shadow wages

As discussed earlier in previous chapters, many approaches were suggested for use in estimating the monetary value of childcare: output, input, opportunity cost and replacement cost. In this research, the input method in particular has been employed. In evaluating household childcare using the input approach, the difficulties have been in deciding on the right concept and measurement of the quantity of time input and the selection of shadow wages. This method has been constructed by applying the following equation:

$$V=Q \cdot P \quad \text{where } Q: \text{ is the quantity of time input, and } P: \text{ is the shadow wage.}$$

Considering the value of Q, time use diary data were used to collect the total daily time input to the household childcare process. Both the time when the child is sleeping and the indirect childcare, such as the other household production activities, e.g. preparing meals for the child or doing laundry, were not included in this analysis. In addition, the value of a second contributing carer was excluded and the time in which only one person was performing a care activity was valued.

In this study, the total childcare time has been valued according to its allocation in eight categories: unspecified childcare; physical care and supervision; feeding the child; other specified physical care and supervision; talk-based care; reading and playing; accompanying a child; and other specified childcare.

The time spent on the total and each one of the household childcare categories being identified and calculated, the selection of P was the next step. Assigning the wages of childcare-related careers in the paid work market to similar childcare activities in the house (replacement cost), is the method adopted in this study in order to place value on the time gathered by the diaries.

Folbre (2008) refers to the meaning of the replacement cost of parental time by asking the following: “if parents were unwilling or unable to provide care to their children, what would it cost to provide substitute care of acceptable quality?” (Folbre, 2008: 128). Even though the quality of parental care, which is usually built on a stable long-term relationship, is one of the hardest to be substituted, the minimal replacement norm would be the use of an equivalent of an average child care worker (Folbre, 2008). Data on earnings are drawn from the 2012 Annual Survey of Hours and Earnings in (ASHE). This data provides gross hourly wages for childcare workers in the UK and within regions. The data provide wage information for five occupations in the childcare sector: nursery nurses and assistants, child-minders and related occupations, play workers, teaching assistants and educational support assistants.

Table 3.2 Average & Median of Hourly Wages in the South West

Description	Mean	Median
<i>Nursery nurses and assistants</i>	<i>7.48</i>	<i>6.60</i>
<i>Child-minders and related occupations</i>	<i>8.76</i>	<i>7.96</i>
<i>Play workers</i>	<i>7.51</i>	<i>6.86</i>
<i>Teaching assistants</i>	<i>8.57</i>	<i>8.27</i>
<i>Educational support assistants</i>	<i>8.50</i>	<i>7.76</i>

Source: ASHE 2012

The wages and salaries vary for many different reasons. They vary from one region to another, according to the demand in the area and the level of proficiency that the provider of the service possesses. The reasons were not mentioned in the ASHE and most of the data on wages in the South West have a coefficient of variation that is unreliable, as the source mentions (see Table 3.2). By taking a closer look at the values of both median and mean for the wages of each care-related career in the South West, a positively skewed distribution of the values of the mean could be tracked.

Hence, the median would seem to be more appropriate to be used in valuation. However, the coefficient of variation for child-minder wages median is larger than 20% (ASHE, 2012). Therefore using the average wage value (CV > 5%) would be more reliable in this case. The median of wages ranges from £6.60 for nursery nurses to £8.27 for teacher assistants, while the average wage for child-minders is £8.76. Yet, to maintain the consistency of the analysis, both median and average wages of the care careers were employed and results were compared.

The person who does household childcare is usually performing a variety of activities. Therefore when estimating the value of that work, each of the activity codes mentioned in this research was given the hourly wage of the closest parallel childcare career in the market. Using the work identification in the National Careers Service, each of the seven

categories of childcare activities (all activities except the talk-based care includes teaching the child) was assigned the average and median wages for a child minder in the South West, £8.76 and £7.96. Then, focusing on the teaching activities, a comparable occupation in the ASHE was a nursery teaching assistant. The median of hourly wages for this occupation in the ASHE 2012 was £8.27 and the average wage was £8.57 (Table 3.2).

In this research, the collected data shows that both parents tend to share childcare duties and all of the studied households use a combination of childcare types during the week, where paid care is partly used along with some help from grandparents or friends. Participants recorded their activities on chosen days, which were mainly the typical ones. Therefore, the shadow hourly wages for all employee jobs are used instead of the female wages or part time wages.

In the most recent report of the experimental estimate of informal childcare in the UK, which was done by the ONS in 2013 using the output approach, live-in nannies were regarded as ‘ the closest market equivalent to care provided by parents and other informal carers’ (ONS, 2013). Although live-in nannies are usually required to do other housework along with childcare (Nannytax, 2013), this study attempted to use the minimum wages of a live-in nanny as well, in order to enable results rapprochement. The Nanny/Nannytax Annual Survey, 2010 gives average wages by geographical area and for the UK. In this research the minimum hourly wage used for live-in nannies outside London, without the cost of the accommodation and food that they receive, was £6.50.

3.6.2 Data on the Macro-level

Childcare arrangements are more likely to vary between weekend days, weekdays, holidays, school days, school breaks and emergencies. Yet, since all participants claimed that they chose typical days to record their childcare time, this study assumed the daily monetary values which resulted represented average estimates. GDP represents the goods and services a nation produces in a given period of time. In order to assess the contribution of unpaid childcare done by householders to the last estimated GDP of the UK, the assessed average monetary values of childcare were multiplied by 141 for the weekend day and by 224 for the weekday. That enabled the monetary value of household childcare for each household to be calculated for weekdays, weekends and holidays. Then, these values were added to give the household childcare value for a year.

The same procedure was applied to the South West region and results were presented as a percentage of the present GDP of the UK. Results were taken further by assigning the current minimum shadow wages of a live-in nanny career (£6.50) to the total of all types of unpaid childcare time, which was recorded in the TUS 2000 of the UK. The TUS sample size of 224 households of families with at least one dependent child for a married or cohabitant couples, out of 5.7 million of that type of families with children in Britain (ONS, 2012). The major obstacle here was that nannies' minimum wages vary significantly across the UK according to the region. The outcome figure therefore represents the ultimate minimum estimate contribution of household childcare to the GDP.

3.6.3 Interviews

Even though qualitative methods are regarded as acceptable because of their own internal logic and validity, they are often criticized for being disassociated from features of the real world (Hammersley, 1992). Yet, the aim of social research concerning

humans is usually to describe and understand the rich phenomena people are involved in. This description is set mainly in a specific social context and at a certain time. Therefore, social studies attempt to understand the current social relationships using the most suitable methods.

In this study, semi structured in-depth interviews were operated, where participants were asked definite questions in addition to open questions and were given the opportunity to express further thoughts. With the intention of analysing the data provided by these interviews, a thematic coding frame was organised (Broun & Clarke, 2006) alongside the transcribing process. Data was analysed for each individual participant and then the cross-case analysis was used for further exploration. After coding the responses these were classified into the related themes and a thematic map was produced. Finally, the selected extracts were related back to the literature.

Moreover, iterative analysis (Huberman & Miles, 1994) was applied by firstly cutting back data while some concepts were being developed. Then, data was summarised and put into diagrams in order to facilitate the comparison and triangulation process, which enabled results and findings to be finalized.

3.7 Ethics

It has been argued that people have different responses, depending on how they comprehend the interviewer (Denscombe, 2007, p.184). The type and amount of information that participants feel happy to provide might possibly be greatly affected by considerations such as the gender, age and ethnic origin of interviewers (Denscombe, 2007). In this study, neutrality and not revealing commitment to a definite opinion has been strictly adopted by the researcher in order to decrease the interviewer effect (Denscombe, 2007).

The research was carried out according to Plymouth University principles and ethical approval for the work programme was obtained prior to the start of the data collection phase. An ethics statement, which guarantees confidentiality and full anonymity during collection, storage and use of research material, was given to all participants. Furthermore, the research purpose was explained and information sheets were distributed. Each of the participants was asked to sign a consent form when they agreed to participate in this research.

Coming from a Middle Eastern Arab country and holding a foreign name, I made sure that I was aware of the cultural and religious differences during the data collection process and kept an open mind towards all kinds of unexpected and new aspects. At some point that could be added as one of the reasons why a few people were put off from contributing to this research. However, lodging in the UK with a native British lady during my study period and being involved in various events and activities with friends and several local families helped me to familiarize myself with the general cultural attitudes of British society, which consequently made the interviews and snowballing stages much easier.

3.8 Summary

The multi-method approach was applied in this study, where time use diaries were used to collect quantity of time spent on household childcare. In addition, in-depth interviews were conducted afterwards. The UK's TUS 2000 data set was employed as well. As a result, twenty one primary time use diaries from Plymouth, ninety seven diaries from the South West, and eight interviews produced the data used in the analysis. The mean and median wages of child-minders and teacher assistants in 2012 were assigned on the collected time from Plymouth and the South West. In addition, the minimum wage of a live-in nanny was applied.

The monetary value of household childcare in the UK, South West and Plymouth was produced as a percentage of the UK's GDP of 2012. The interview outcomes were analysed in order to get more understanding of the childcare under taken by participants, division of duties between partners and families' attitudes towards childcare.

Chapter 4: Results

This chapter presents the results from the collected data. It includes three main sections; the monetary value of household childcare in Plymouth and the South West of England, household childcare in relation GDP, plus the interview outcomes. Households with children in Plymouth were contacted by range of approaches as detailed in the previous chapter. Twenty-one diaries were filled with time spent on unpaid childcare and eight interviews were completed. By using the input replacement approach, the monetary value of childcare time was estimated. Time recorded in the South West from the UK's Time Use Survey 2000 was valued using the same approach.

4.1 Household Childcare Time

Participants in Plymouth were given time use diaries to record the time they spent on different household childcare activities for one week day and one weekend day of their choice. Twenty one filled diaries were reviewed and analysed, and the outcomes were as follows:

4.1.1 Weekday

The results in Figure 4.1 show that participants' total time of childcare ranges from one hour and thirty minutes as the minimum and reaches the maximum of eleven hours and forty five minutes, with an average of six hours. The total time is distributed over the various categories of care activities. Talk-based developmental activities with the child seem to take the greatest proportion of the carers' time, with an average of two hours and forty minutes per day. With a positive skewed data set, more families spent over two hours on developmental care. Yet, one family recorded seven hours on such activities during the week day. During the interview, the mother of this family illustrated

a conscious concern of the constant teaching activities, which she attempts to provide to her child. Figure 4.1 shows that the rest of childcare time was mainly expended on feeding and specific physical care.

Table 4.1 Weekday Childcare time (hrs.min) in Plymouth (n=21)

	<i>Feeding</i>	<i>Specified physical</i>	<i>talk-based</i>	<i>total</i>
<i>Mean</i>	1.30	2.20	2.40	6.20 SD 2.7
<i>Median</i>	1.30	3.00	2.15	6.15
<i>Minimum</i>	0.15	1.00	0.45	1.30
<i>Maximum</i>	3.30	3.00	7.00	11.45

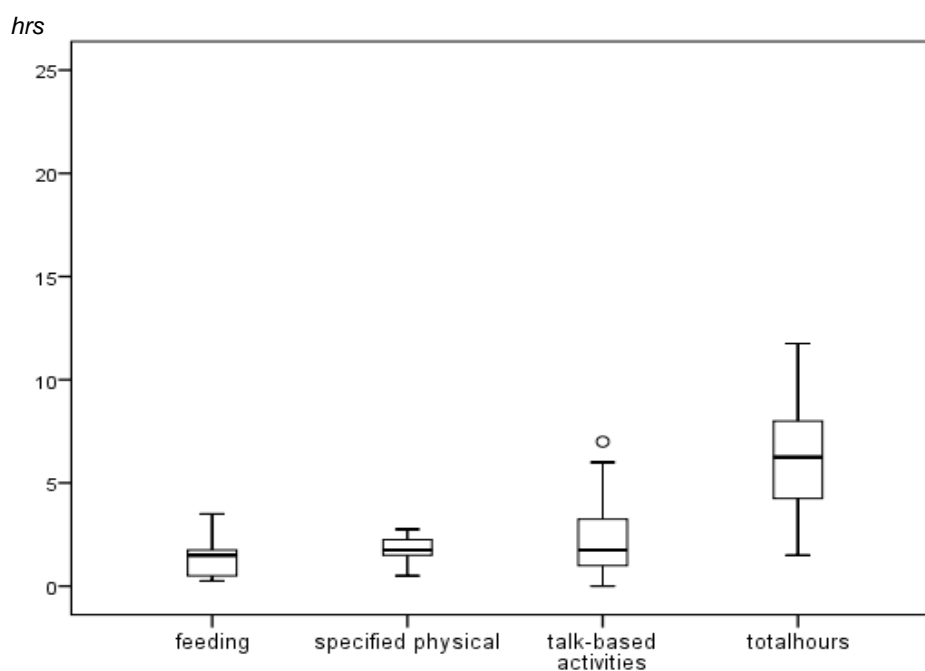


Figure 4.1 Weekday Childcare time (hrs) in Plymouth

Compared with Figure 4.2, which displays results of the South West of England, people spent on average about four hours during a weekday on household childcare. This represents two hours difference in the average total time for household childcare in Plymouth. Although the total childcare hours are different in the two surveys, talk-based developmental activities and specific physical care have taken the most of childcare

time, with an average of one hour per day for each in the south west.

Table 4.2 Weekday Childcare time (hrs.min) in SW (n=97)

	<i>specified physical</i>	<i>Talk-based</i>	<i>total</i>
<i>Mean</i>	1.00	1.17	3.53 SD 3.5
<i>Median</i>	0.00	0.66	2.66
<i>Minimum</i>	0.00	0.00	0.00
<i>Maximum</i>	1.33	12.00	21.33

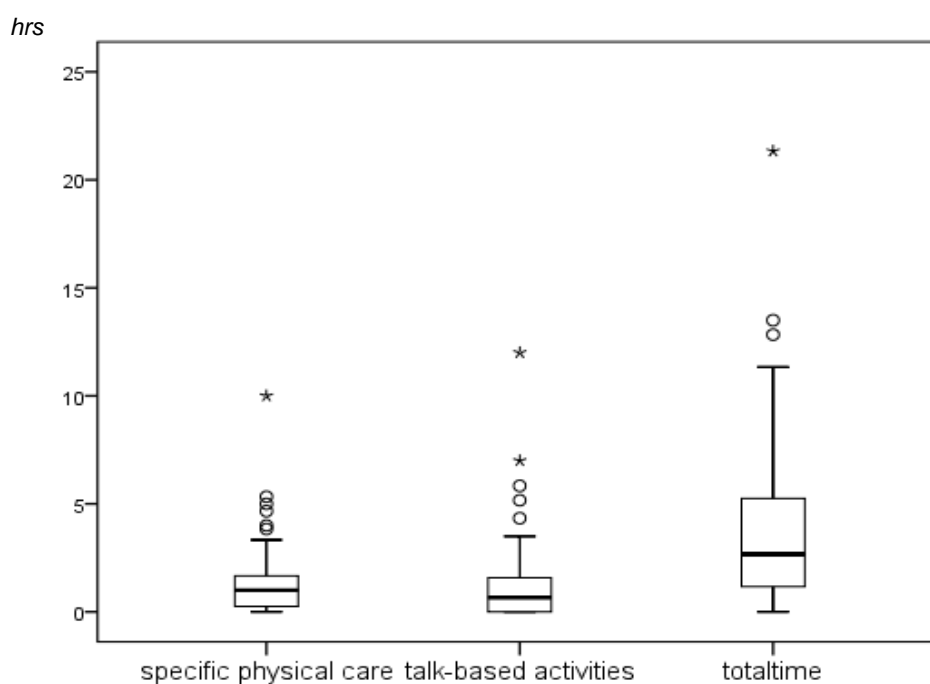


Figure 4.2 Weekday Childcare time (hrs) in the SW

In addition, it could be seen that many families recorded more time on household childcare than the majority of the surveyed families.

4.1.2 Weekend day

Participants in Plymouth were asked to choose one weekend day to record the time spent on household childcare. Results show more household childcare done during the weekend day than in a week day (figures 4.1& 4.3), with an average of almost nine

hours. Figure 4.3 shows that most of the care time was spent on talk-based care activities and specified physical care. More families spent with their children in total more than seven hours and forty minutes i.e. the median during the weekend day. Bearing in mind the weekday time, the time focused activities are the same in both days, however more households reported higher time than the median in each during the weekend day.

Table 4.3 Weekend day Childcare time (hrs.min) in Plymouth (n=21) _

	<i>feeding</i>	<i>specified physical</i>	<i>talk-based</i>	<i>total</i>
<i>Mean</i>	1.45	3.00	3.30	8.55 SD 2.8
<i>Median</i>	1.30	2.55	2.15	7.45
<i>Minimum</i>	0.45	0.30	0.30	4.15
<i>Maximum</i>	3.30	6.30	10.00	15.30

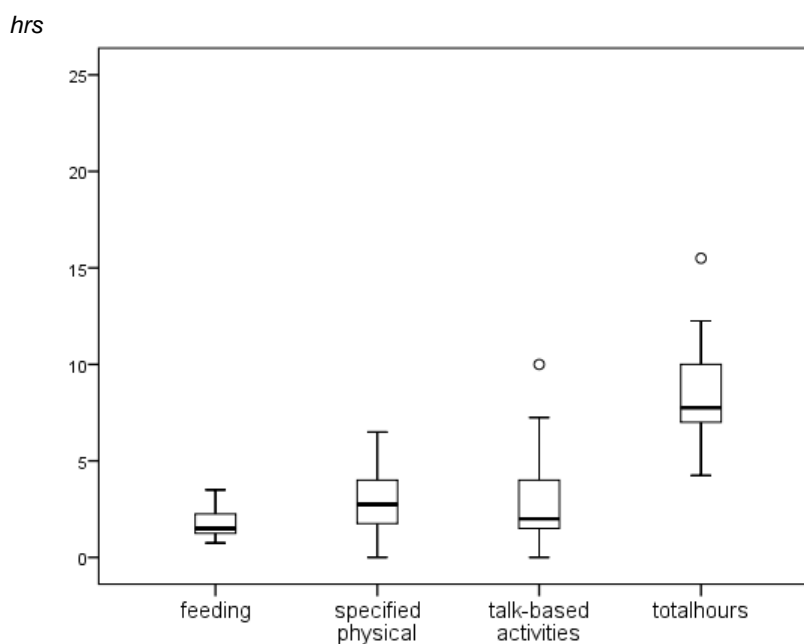


Figure 4.3 Weekend day Childcare time (hrs) in Plymouth

One family remarkably recorded much higher time of talk-based activities and total household childcare. Parents of this family were interviewed and reasons behind such reports were explained by the part-time jobs of both parents.

Looking back to the South West time use records in 2000 (Figure 4.4), parents

recorded more time in total during weekend days than in weekdays with an average of four hours and thirty minutes on a weekend day. That is four hours and a half time difference from the Plymouth 2013 small scale survey. Compared to the weekday data, more time was spent on talk-based activities, while unspecified activities such as watching the child playing in the playground and/or waking the child were seen with much presence during the weekend than on the weekday.

Table 4.4 Weekend Childcare time (hrs.min) in SW (n=97)

	<i>unspecified</i>	<i>specified physical</i>	<i>talk-based</i>	<i>total</i>
<i>Mean</i>	0.76	0.08	1.49	4.29 SD 4.1
<i>Median</i>	.013	0.00	0.66	3.33
<i>Minimum</i>	0.00	0.00	0.00	0.00
<i>Maximum</i>	11.17	3.33	7.83	19.67

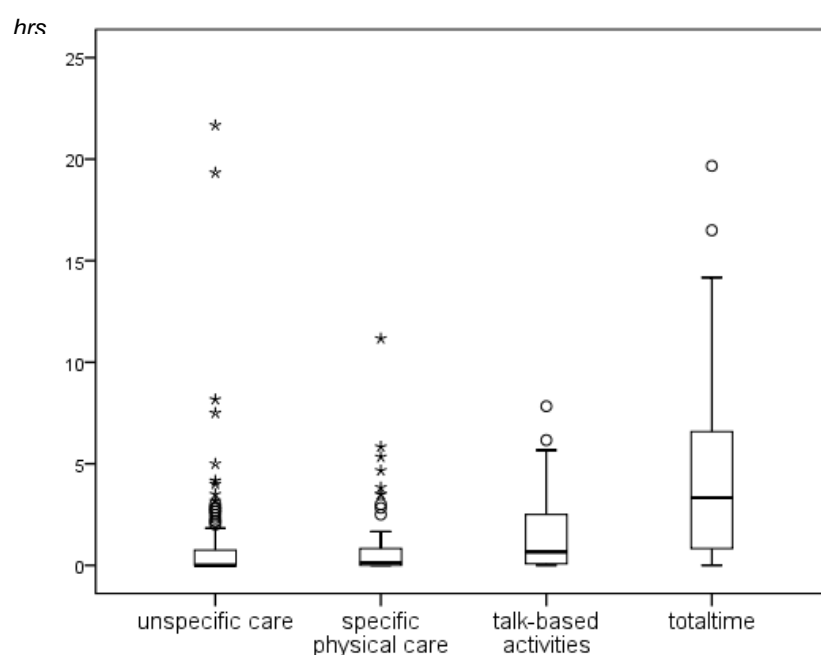


Figure 4.4 Weekend Childcare time (hrs) in SW

The outliers in Figure 4.4 represent families with outstanding time records, which exceeded the trend.

4.1.3 Time changes

Figure 4.5 shows the differences between household childcare time according to the day and the number of children in the studied households in Plymouth. It can be seen that more care time took place on a weekend day than on a weekday. The Boxplot illustrates that participants with more children (three children) spent more time on childcare activities than the average of childcare time of families with less number of children. Yet, among the studied households, only one out of the whole sample size (21 participants) had three children.

However, ten of the households had one child and the other ten had two children. The Figure shows that participants with one child spent on average more time on childcare during the weekend than on a weekday, but during the weekday more families recorded higher time than the median. That was explained during the interviews by the different paid working hours of parents during weekdays. Childcare time increases in families with two children with a higher median on the weekend day than the week day that could be related to more use of other childcare types during working days.

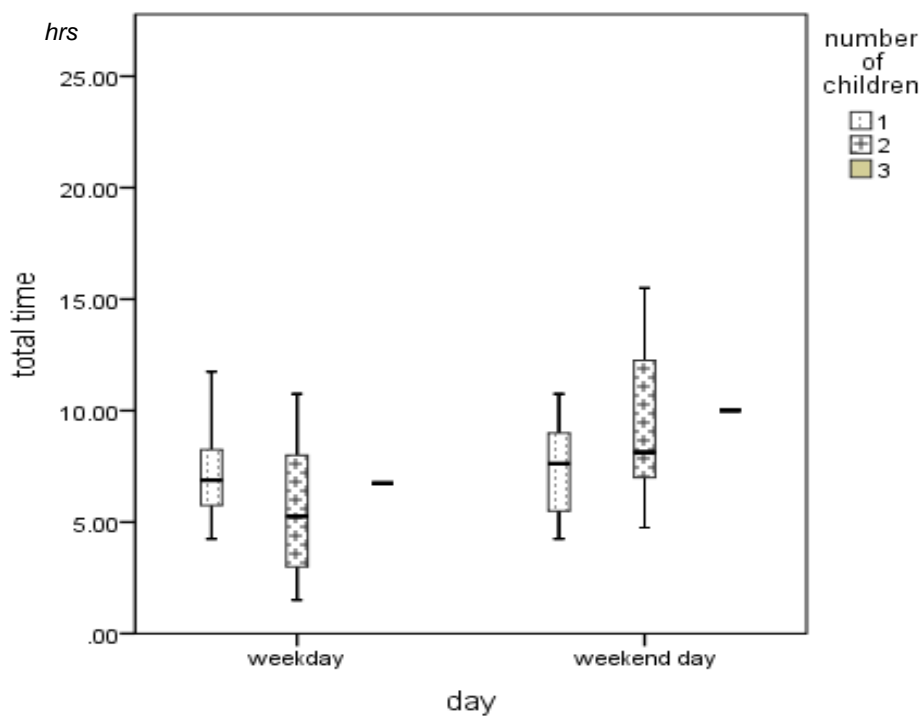


Figure 4.5 Childcare time in Plymouth

Looking at the total household childcare time records in the south west of England from the UK's TUS 2000, in comparison to the collected time in Plymouth 2012-2013, it may be noticed that time input varies between the two surveys. The two sets of data have different means, yet they both show the effect of number of children on the household time devoted to households' childcare activities. Interestingly, Figure 4.6 shows that more childcare time was recorded by families with three children than by ones with four. However, only 3% of the households in the sample had four children and 16% of them had three. The study primary data shows that two children are given more hours of care than one child, and the SW data presents households with three children as the one with the highest number of household childcare hours (Figure 4.6).

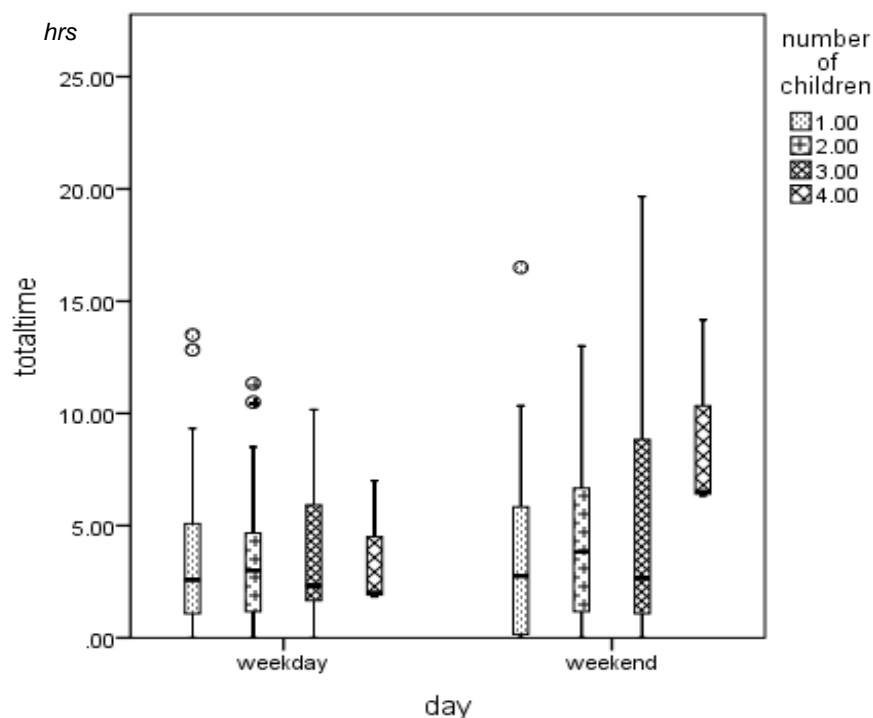


Figure 4.6 Childcare time in the SW

In summary, records of household childcare time illustrate that family spend different amount of time with their children according to the day (week day, weekend) and the number of children in the family. Families with more children spend on average more unpaid childcare time, and that was more on a weekend day than on a weekday. In

addition, childcare time is unequally distributed among the various childcare activities. Most families concentrate their childcare time on the developmental talk-based sort of care, specific physical activities and feeding. While, other categories consumed much less time.

4.2 Household Childcare Monetary Value

Attempting to set a realistic monetary value on household childcare activities, this study employed the input replacement cost method. In order to decide on the most suitable wages to be used, this research had to look for available paid careers which fulfil household childcare duties often done by parents and family members. Child-minders were found to be the closest option for most of the childcare activities, while teacher assistants were the parallel for talk-based developmental activities. Live-in nannies were considered by the ONS of the UK to be a similar childcare provider (ONS, 2013). Therefore, this study used the median and average wages of both child-minders and teacher assistants plus the minimum hourly wages for live-in nannies in the South West.

4.2.1 Monetary value

Household childcare monetary value on each of the two surveyed days in Plymouth 2013 and in the South West, 2000 was estimated. Outcomes which are displayed in Table 4.5 present different figures of household childcare depending on the choice of shadow wages.

Table 4.5 also shows that, when the average wages of child-minders and teacher assistants were used, the estimated values were higher than the values that resulted from applying the median of the same wages. When the mean wages were employed, household child care activities average value was £73.96 during the weekend day, while the average value on the weekday was equal to £55.65. On the other hand, when median wages were assigned on household childcare time, the average value was £68.74 and £51.73 during the weekend day and the week day respectively.

Table 4.5 Monetary Values of Childcare (£) – Plymouth (n=21)

	Weekday			Weekend day		
Value	M-wage	A-wage	Nannies	M-wage	A-wage	Nannies
Mean	51.73	55.65	41.63	68.74	73.96	55.33
Median	50.45	54.51	40.63	62.31	67.80	50.38
Min	11.94	13.14	9.75	33.83	37.23	27.63
Max	95.70	101.60	76.38	126.48	133.88	100.75

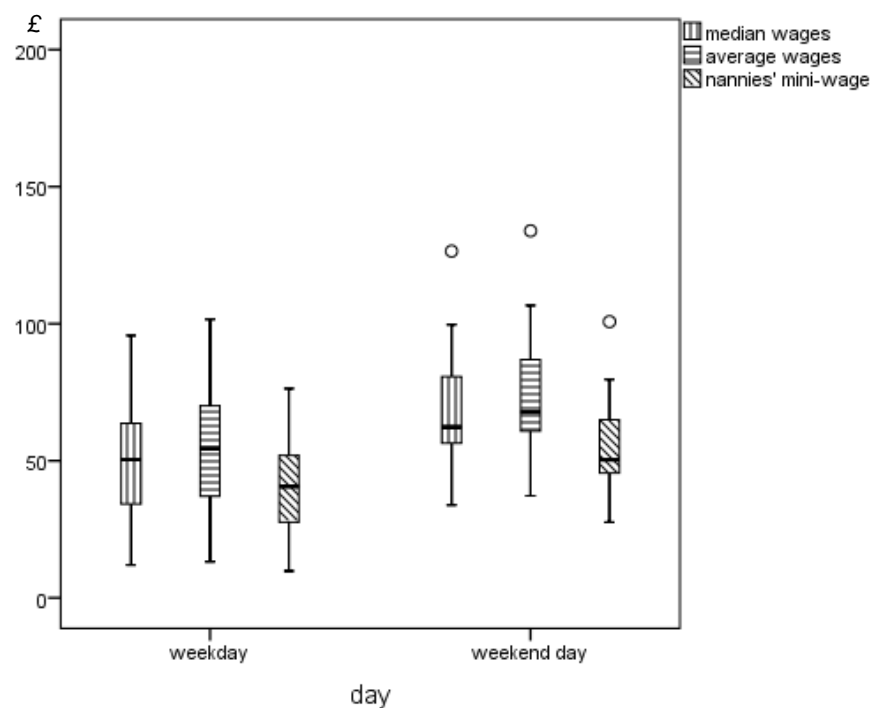


Figure 4.7 Monetary Value of Childcare (£) – Plymouth

Figure 4.7 displays the results showing more positive skewed data during weekend days i.e. more values of household childcare were higher than the median in each estimate. Compared to Figure 4.3, the family with outstanding amount of childcare time on the weekend day has produced the outlier value in all the estimates. By applying the same chosen careers and wages, household childcare time, which was recorded in the 2000 TUS of the South West, has been valued. Table (4.6) shows the results, which

stress that applying the average wages gives the highest estimates. In addition, when the minimum wages of live-in nannies are allocated, the lowest values resulted.

Table 4.6 Monetary Value of Childcare (£) – South West (n=97)

	Weekday			Weekend day		
Value	M-wage	A-wage	Nannies	M-wage	A-wage	Nannies
Mean	28.53	30.78	23.00	34.64	37.32	27.90
Median	21.59	22.89	17.33	27.31	28.73	21.67
Min	1.33	1.46	1.08	1.38	1.43	1.08
Max	173.53	184.60	138.67	156.65	172.22	127.83

Figure 4.8 presents the estimated values by showing how they differ according to the day and the employed wages. The majority of families achieved higher childcare monetary values, which were more than the median in each of the three estimates on both days.

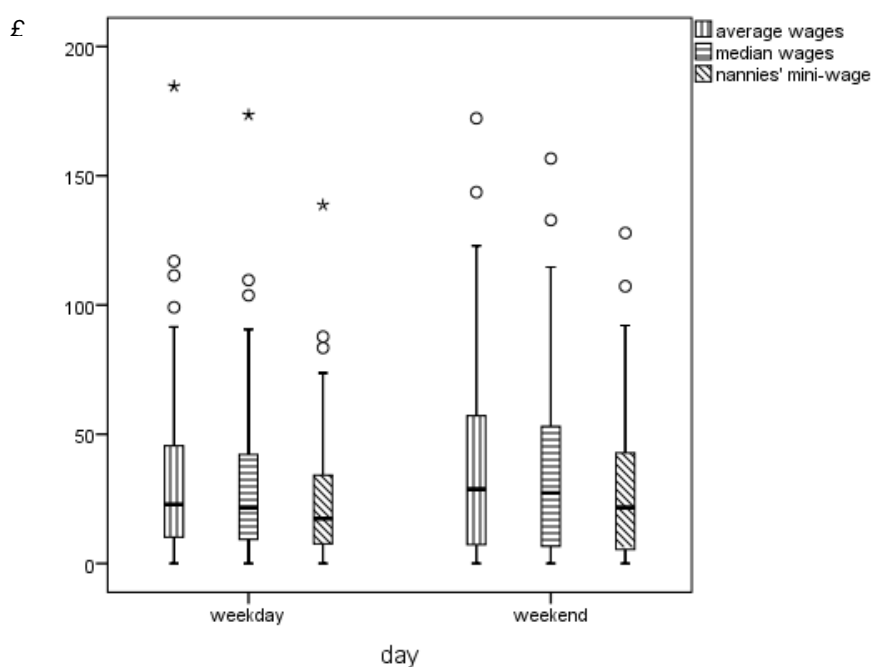


Figure 4.8 Monetary Value of Childcare (£) – South West

4.2.2 Household Childcare and GDP

The value of household childcare for a year was calculated as detailed in Chapter Three, which gave the results in table 4.7. It may be noticed that assigning different wages has definitely produced variation in the estimated annual values. Focusing on the small scale primary data from households in Plymouth, and on the larger scale of the South West sample, the use of the median and average of wages came up with about two thousand and one thousand difference a year, respectively.

Table 4.7 Household Childcare Average Monetary Value per family a year, (£1000)

	Plymouth			South West			UK
	Total	talk-based activity		total	talk-based activity		
		value	%		value	%	
Nannies wages	17	6	37.49	9	3	33.93	24
Median wages	21	8	38.79	11	3.9	34.79	30
Average wages	23	8.5	36.98	12	4	33.40	32

Looking at the UK's TUS 2000 data, it may be seen that a family of married or cohabitant couples with at least one child spent on average 3760 hours a year on household childcare (ONS, 2003). By assigning the 2012 minimum wage of live-in nanny at that time, the monetary value of household childcare for the sample is calculated as £24,000 Stirling pounds. And by assigning the average wages of both nursery teaching assistant and child-minder the estimate reached £32,000

Since talk-based developmental activities consumed the biggest share of childcare time, Table 4.7 also shows the monetary value of such activities. In addition, it displays how much this value represents of the total value of household childcare. Talk-based activities made up about 37-39% and 33-35% in Plymouth and the South West respectively.

Table 4.8 shows the contribution of household childcare to UK's GDP. This is done by assigning three different wages to the average time spent on household childcare per family a year in the South West. The number of families of married or cohabitant couples with at least one dependent child was 464,411 (ONS, 2013) and UK's GDP for the year 2012 was £1.5 trillion. Therefore, the contribution of household childcare by this type of family in the South West as a percentage of the UK'S GDP for 2012 has been valued at £4 billion for the southwest and £137 billion for the UK (Table 4.8). By employing the average and median wages, the contribution of household childcare to UK's GDP for 2012 was calculated at 12.13% and 11.4%, respectively. Even when the minimum hourly wage of a live-in nanny was applied, the contribution reached 9.1%. Multiplying the average monetary values per family a year in the UK, which are shown in Table 4.7 by the number of families of married or cohabitant couples with at least one dependent child i.e. 5,7million (ONS, 2013), the contribution of household childcare by this type of family in the UK as a percentage of the UK'S GDP for 2012 has been valued as Table 4.8 shows

Table 4.8 Household Childcare Estimated Contribution to GDP (2012)

	South West <i>£billion</i>	GDP%	UK <i>£billion</i>	GDP%
Nannies wages	4	0.30	137	9.10
Median wages	5	0.35	171	11.40
Average wages	6	0.40	182	12.13

To summarise, the monetary value of household childcare varies widely according to the time input and shadow wages. Nonetheless, the estimated participation of unpaid childcare to the national economy represented here in the GDP is quite significant.

4.3 Interviews Outcomes

Time use recording process was followed by in-depth interviews with participants who agreed to give further information about their childcare routines and attitudes. Questions mainly focused on four broad points: personal experiences with childcare arrangements, the way both paid and unpaid childcare are seen, the level of recognition that is felt by participants and, lastly, reflecting back on the process of filling the diaries.

In order to explore interviewees' points of view, each major point was approached by asking several open questions. That gave a wider space for participants to explain and share as many related ideas as they were happy to. Although interviews were done on a small scale, they revealed various ideologies, viewpoints and themes. Participants' responses were categorised into themes, triangulated and compared. Furthermore, participants' responses were a helpful tool in order to justify time records that they provided in the diaries. In all the eight cases, diaries were met with the attitude each interviewee expressed, in order to investigate how the claimed attitude affect or not the childcare time.

4.3.1 Childcare Arrangements

In each of the eight households, childcare was provided by the arrangement of different care options such as: maternal care, grandparental care, help from extended family, friends, nurseries, pre-school, father care and shared parental care-Table 4.9. The use of these types was altered according to the day of the week, the paid working hours of the parents, the availability of the care provider, the age of the child and the cost of the paid care.

Table 4.9 Childcare Major Pattern

Repeated idea	Frequency	The Major Outcome
<i>Parental care combined with grandparents help and institutional care</i>	7	<i>the use of multiple childcare options</i>
<i>Mother is the main carer, father and grandparents are the main careers for few days of the week</i>	6	
<i>Children receive formal care twice a week, go to their grandparents once a week, with the mother most of the remain days and cared by fathers mostly in the evenings and weekends</i>	6	
<i>Limited use of nurseries, support from in laws and extended family, but for five days parents are sharing the main carer role</i>	3	
<i>Even in the case of one stay at home mother, pre-school institutional care was integrated as a supportive care arrangement for two days a week</i>	1	
<i>While one child goes to nursery part time for three days, the younger child receives care provided by grand mother, father and mother all the day</i>	1	

4.3.2 Reasons for Unpaid Childcare

When interviewees were asked about unpaid childcare, various points were mentioned. Starting with the factors behind the choice of unpaid childcare, five parents said that living a short distance from their own parents or other family members was quite an influence on the way they arranged childcare duties. Seven out of eight did not believe in formal paid childcare, while the flexibility of the paid working hours of one or both parents was a major effect for all of the eight households. The high cost of institutional and paid care was stressed by seven of the participants, who found it too expensive. In addition, the availability of maternity leave and the strength of mother-child attachment had both contributed in shaping the choice of unpaid childcare for six of the households, Figure 4.9.

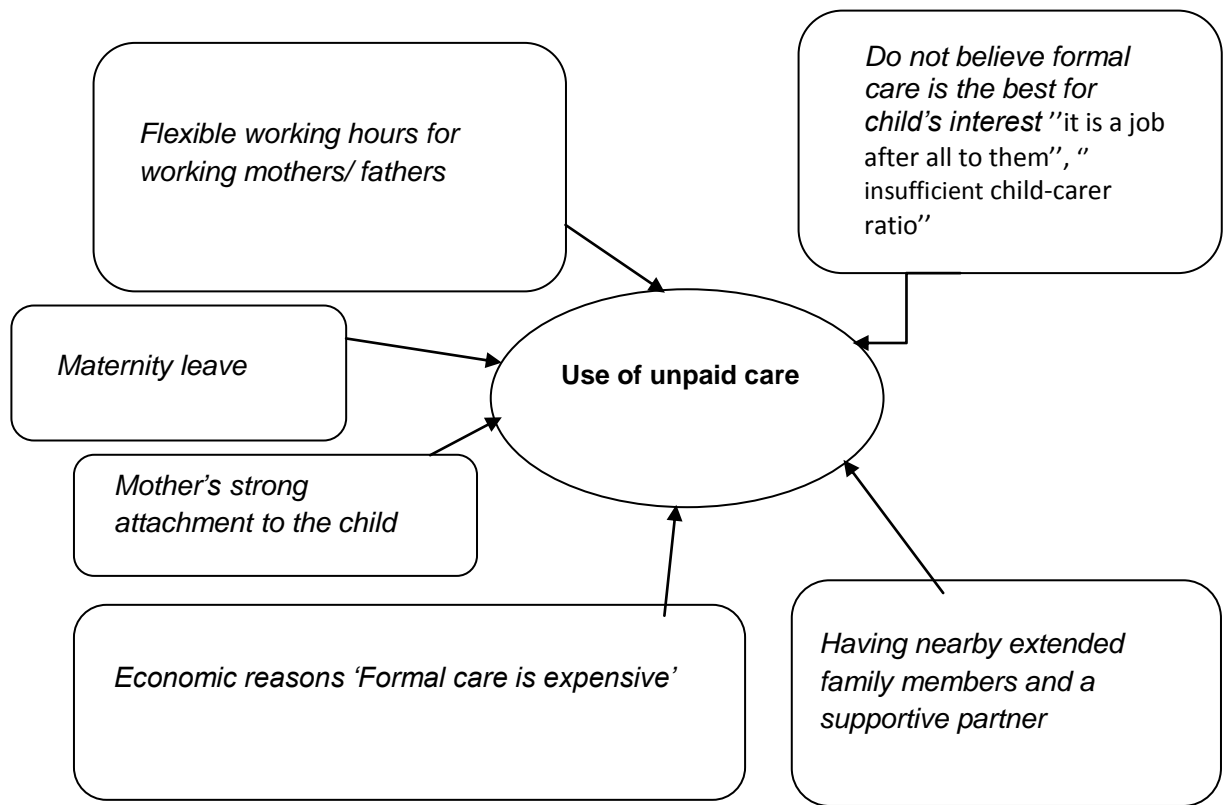


Figure 4.9 Reasons for Household Childcare

4.3.3 Household Childcare Pros & Cons

Household childcare, according to the participants, has both negative and positive impacts regarding the child, the care provider and the economic status of the household. Figure 4.10 shows the effects which were revealed by the interviewed parents.

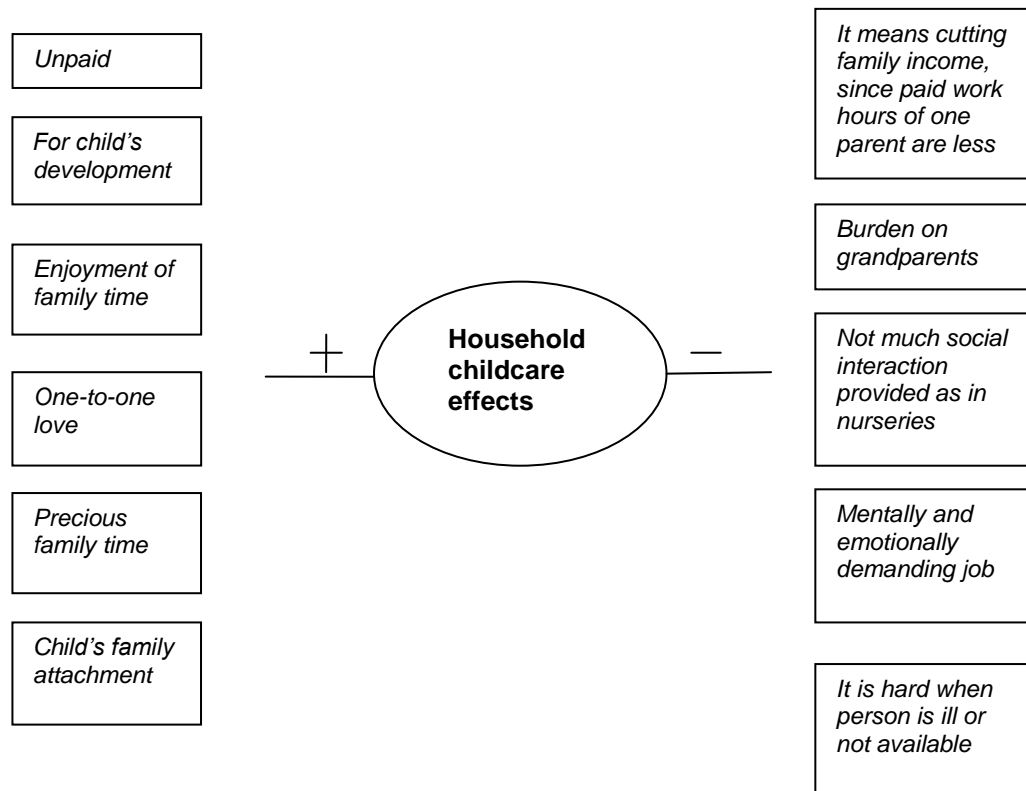


Figure 4.10 Household Childcare Impacts

4.3.4 Institutional Childcare

The eight interviewed parents stressed the importance of the quality of care provided for the child, whatever type of care that was. All the interviewees shared a positive perspective on using institutional childcare when the child is not younger than three years old, for a few days a week or a few hours a day. Four mothers expressed dismay at the idea of leaving a child at the nursery for a whole day every day of the week, stressing the unsatisfactory child-carer ratios at nurseries. The eight participants stated their feeling that nurseries were an expensive choice, yet were relieved to know that it was available in case their circumstances changed. One father viewed his opinion of nurseries as follows;

"...If you choose a good one and you put your child in it for full time option because you have to work full time...nurseries could be the perfect thing to choose.....If it is not the right nursery there would be disadvantages for sure.... I would like more time with him (the child)...but that is not possible if we both have

to work to earn our living....well...When we compare him with children who haven't been to nursery we could see that he is doing much more better socially..." (P8)

4.3.5 Career-Child Dilemma

In the eight of the households approached, having children was claimed to have a huge influence on the parents' career. In seven of these households both parents do have paid work, while in one, only the father does. When participants were asked if having children had any effect on their careers or if having paid work affected their childcare procedures, many impacts were mentioned as displayed in table (4.10).

Table 4.10 Career-Child Impacts

Positive career-child effect	Negative career-child effect
<i>More appreciation for parent-child time</i>	<i>Less chance for promotion</i>
<i>Healthy for parents to have some time away from their children</i>	<i>More pressure in scheduling working times</i>
<i>Make parents feel the importance to have a quality time with the child and put more stimulating and teaching into the available time</i>	<i>Limit contribution in work trips and trainings</i>
	<i>Working late is not an option anymore</i>
	<i>Less chance to take on more responsibilities at work</i>
	<i>Stressful to combine both</i>

In all interviewed families there was a conscious focusing on the 'quality time' idea, where one of the fathers explained:

" it is not the matter of how many hours you spend with the child, it is about how you spend it actually" (P8)

Having a child has changed parents' attitudes toward their careers. One mother has resigned from her successful thirteen years of paid work, and started to put herself last after her children's' needs.

"..Actually, I haven't worked now for seven years, I stopped working when I got pregnant....mmm...my career was brilliant, I loved my job... I had been doing it for more than 13 years...but I could never combine it with children.....till I got children I stopped thinking about money or spending it on me....I am different person now in good way I guess. My priorities are different....they are my priority now..." (P6)

Five mothers interviewed had experienced changes in their career paths, yet they didn't give up paid work entirely and did not show any intention of doing so. However, they strongly stressed the interests of their children while they are trying to keep a balance between the need to have a career as a person and to be a parent.

"...in my job, I was middle senior, if I am going to be lucky I would be able to have a part time work, but I won't be able to take more responsibility as a senior.....so I won't have the chance to progress (pause)..., till my children are at school. It is important for my child to have more time with me rather away....you see...My mother worked very hard so I got strong independent hard work history, therefore it doesn't make sence not to be out there working, and it is feasible for us for me to become a full time mum, but I don't want to lose my skills, and I hope to keep in it. I am happy to have breaks but not leaving it totally..." (P5)

Two cases showed different strategies in keeping the family-work balance. Where the mothers had more sustainable paid work with higher earnings, fathers cut down their working hours and took over the main carer responsibilities.

"...I had an eleven months maternity leave...when I came back to work my partner started doing the main carer job...it was a conscious decision, never to send our daughter at this age to a formal childcare....when I came back to work my husband resigned... but his work didn't want him to leave.. So he was offered a year off to look after our little girl..." (P2)

4.3.6 Childcare Arrangements Efficiency

The stated satisfaction of the eight parents interviewed corresponds to their present childcare arrangements; yet three mothers out of eight parents expressed their concerns about future changes to the current arrangements.

"...I am really lucky, but I am a bit worried about the near future...ah well, there is

a possibility that my husband's job will move so we have to look for someone we trust to help instead of the in-laws who will be away..."(P5)

This was due to the changes in their life setting, such as, moving house away from grandparents, a short maternity leave allowance, not being able to find a part time job when getting back in to work, and not having enough money to send the child into nurseries or to pay for a child-minder in case of emergencies, for example, when the usual carer is ill.

4.3.7 Personal Feeling of Recognition

When parents, more precisely speaking mothers, were asked if they have the feeling of general recognition of their role as carers and if the people who provide unpaid childcare were appreciated socially and formally, answers varied from "not at all" to "there is some recognition on the family scale not further though" and one thought that "there is some appreciation in general, yet not as much as doing this task needs".

In addition, one father expressed a deep feeling of under-recognition socially and formally for the role fathers are doing as main carer in many families these days.

Grandparents, as the main care providers, were focused on by most of the interviewees since they are supposed to be retirees who need to relax and to have someone to take care of them in some cases. Most parents felt that society does not really value the amount of work the army of grandparents is actually doing.

"...The society underappreciates the unpaid childcare... many people are using other family members to help like the grandparents in a regular rate... these are the active retirees.... When there is no possibility for that option, here comes the institutional care....Without unpaid childcare the system would collapse... so I guess the government is aware of it but not recognize it really..." (P2)

4.3.8 Time-use Diary Experience

Interviewees were asked about the way filling the diaries reflected on them. Each had a different response, yet all agreed that there should be more time devoted to the child's development activities. One mother said that it was good to know that she is actually

doing more than she thought she did, while another mentioned that she realised how much time she spent on housework, i.e. cleaning and cooking, while she thought she was taking care of her children. Another couple found it interesting to see how they had unconsciously divided their care duties and how good it was to know who is doing what.

One mother said:

"...it was interesting to see how we fitted into a certain routine without being aware of it...it made me notice how family-focused we are.... It made me think I should spend more time with other people for a bit...!" (P2)

Questions were asked about the participants' impression of the time-use diary design. Six out of eight said that the diary was easy to follow and not complicated at all. One mother found it hard to fill in the activities and divide them to categories since she tended to do many at the same time, while another mother preferred to reflect back on what she did, because she found it hard to keep track of each ten minutes.

'...I didn't find it complicated really ...because you are doing many things at the same time, it is quite difficult to put down on paper what you do hour to hour... it never stops really...you must need a camera to know exactly what is going on in the house...always there is demands and fun...it is never boring really..'" (P6)

4.4 Summary

The results of the data analysis provided that, by employing different shadow wages, the contribution of household childcare varied from 9.1-12.13% of the UK's GDP in 2012. The time expended on household childcare differed remarkably according to the day, number of children and the kind of activity. These differences were related to many factors, which were investigated and related to the diaries. The employment of parents and mothers, in particular, having extended family nearby, the cost of other childcare options, and parents' beliefs were the major influences.

Chapter 5: Discussion

This chapter represents the outcomes of the research. The topics which have evolved are discussed and the differences between valuing approaches are highlighted. Points uncovered relating to the division of work between men and women in the house and patterns of childcare arrangements in Plymouth households are also reviewed. The responses of participants are related to the literature in preceding chapters.

5.1 Household childcare and the input replacement cost method

This study found that household childcare makes a significant contribution to the national economy. In the European Commission report 2003, 'the accuracy of the recording and measurement has been widely recognized (European Commission, 2003). The results of this study support such a statement by showing the variation in both the allocation and amount of care time between weekdays and weekends in the South West and in Plymouth households (Figure 4.1, 4.2, 4.3, and 4.4), with different estimates of the monetary values of that time depending on the kind of shadow wages applied i.e. mean, median or minimum wages (Table 4.5, 4.6, 4.7, and 4.8) and the choice of the parallel paid careers i.e., child-minder, teacher assistant or nanny.

Looking back at table 2.1, which displays previous studies' attempts to measure unpaid childcare in different countries by applying various approaches, it appears that the outcomes of this study are difficult to reconcile with those results. This is because of the different assumptions made, the region, the year and the methods employed. For instance, in the most recent estimate by ONS 2013 of informal childcare in the UK for all types of families, the contribution of informal childcare to the UK's GDP that year was 23%. The estimate was accomplished by applying the output approach and assigning the minimum hourly wage of a live-in nanny, whilst in this current study the contribution is found to be 9.1%. In addition, the replacement cost approach was the

main method for the measurement of childcare, which focused solely on families consisting of couples with children. Hence, the comparison of the outcomes of both would not be precise.

This study could be seen as slightly closer to part of Mullan's study in 2010. Mullan used both approaches i.e. input and output methods, in order to find the monetary value of household childcare for all family types in the UK. In addition, the childcare activities were divided into three groups, depending on the categories included within each. Consequently, this gave multiple results and the unpaid childcare contribution to the GDP varied remarkably. The current study estimated childcare activities, which included all the categories mentioned earlier, as in Mullan's third group of activities, which including all categories of childcare activities. It used the minimum wages of live-in nannies and the mean and median of child-minders for the entire childcare categories except the talked based ones, which were assigned the mean and median of teacher assistants.

On the other hand, Mullan depended on different percentiles of child-minder's wages to be assigned to most of the categories and the tenth percentile of the teaching profession for the teaching activities. While this study estimates the contribution of childcare to GDP at 9.1-12.13%, Mullan's estimates range from 1.8% to 22.85% by applying the input approach to the three different groups of activities, and 7.8% by using the output method. By focusing on the third group of the input approach results, i.e., 11.8 – 22.8% the findings of this research is meeting a close value. However, the different assumptions made by each study would give misleading comparison results.

The attempt to present an estimate of household childcare, which is done in families of married or cohabitant couples, has faced many obstacles. The major difficulty lays in capturing the time spent on childcare, its allocation among different activities and the combination of performers. Moreover, the basic point of defining which activities to

include in the estimate is a huge concern. Additionally, most babies need care during the night. In this study this was included and the wages of both live-in nanny and the child-minder were assigned on such hours. Yet, these hours are much closer to on-call career, which in turn adds more complexity to the measurement process.

The majority of previous studies depended on the time records in national general time use surveys. These surveys are not designed for the purpose of unpaid child care in particular, yet the design of the diary in the UK's TUS 2000 was found to be the most accurate (Folbre & Yoon, 2007). When this current research tried to employ the same definition and diary design as the UK's TUS diary, its simplicity and complete coverage of the various activities that childcare includes, was confirmed. Moreover, the process of filling the diary was claimed by the eight interviewees to be straightforward.

Furthermore, taking care of a child usually implies many activities at the same time, which made it unclear for participants to decide what to record in the diary. That issue arises particularly when more than one child are being cared for at the same time, even though childcare could still be the primary activity, yet it might include activities from many categories. Hence, diaries with shorter time plots will be much more precise in capturing the reality, but that will increase the burden on the participants to get it recorded. The residual approach that was employed by the ONS in the UK 2013 has been suggested to solve such a problem. However, it is still based on general assumptions for the time children of different ages spend at paid care.

In addition, the choice of the right wages to be assigned is found highly critical and differs remarkably, which consequently produces different results. By assigning the minimum wage of live-in nanny the estimate would lack a precise result. Given the fact that childcare involves many types of activities, which are usually done by different paid workers in the parallel paid market, assigning a specialist's wage to each activity is

found to provide a more accurate estimate. Still, bearing in mind the variation in the quality of care provided by parents and the one performed by professional paid care workers, finding a replacement cost is still a significant limitation.

5.2 Childcare time allocation

By asking participants to record their household childcare time followed by interviews, this study tried to capture time allocation and reasons behind it. For instance, employed mothers priorities particular sorts of activities with their children and increase the hours of better quality care as developmental activities (Bittman, et al., 2004). In both data sets the higher time reports seem to be devoted to the child development activities. This confirms the findings of Bittman, Craig and Folbre. In the small scale sample of Plymouth families, parents were consciously empowering such an attitude. When diaries were compared to the interview responses, many interviewees expressed their intentions to put effort into providing much quality time with their children, during which talk-based and developmental activities were mainly performed. These certain activities were found to represent 37-39% and 33-35% of the total childcare monetary value in the sample taken from Plymouth and secondary data of the South West respectively. Furthermore, Folbre 2008 claimed that time use surveys usually underestimate the real childcare time (Folbre, 2008). The results confirm such a claim by showing higher records in the small scale primary data from Plymouth than the South West's TUS of time spent on household childcare (Figures 4.1, 4.2, 4.3, and 4.4).

5.3 Households' attitudes towards childcare.

The in-depth exploration of participants' attitudes towards childcare provided further justifications for the varied time allocation among different childcare activities. Moreover, it helped in gaining a deeper understanding of the childcare arrangements of the interviewees and to elaborate the diaries' records.

Although household economists agree that the acquisition of financial benefits can

explain much of families' behaviours, nonetheless seeking happiness, health and comfort have the potentials to be among the main driving influences (Bryant, 1995). The research found that, even in a small scale sample, childcare arrangements were decided not only by taking economic factors into consideration, but also by considering the best interests of the child along with the stability and enjoyment of family life, Figure (4.10).

A number of studies suggest that there has been a transfer away from household childcare towards formal childcare for children aged less than 5 years old (e.g. Fender, et al., 2013). However, the results from the few interviews done in Plymouth scarcely justify such a suggestion. All participants with young children under four years old tried to avoid the possibility of using paid childcare as much as possible. During interviews, many mothers articulated a firm position against leaving the child with someone who is just "doing a job," every day or even for only few days a week during working hours, especially in the child's very early years.

Moreover, even when nursery was a possible way to manage, it was used for older children, and for a small number of hours in a day and for a few days a week. Many reasons were given by participants for this attitude. For example, the child-carer ratio at nurseries, the belief that children are more vulnerable to illnesses at nurseries, and, above all, the high cost of paid childcare. The interviewed Parents explained that although household childcare is a highly demanding, around-the-clock job, keeping the precious family time element in the child's life makes it worthwhile. The results imply that studied parents believe household childcare is a type of unpaid care which strengthens the child's family attachment by supplying one-to-one love (Figure 4.10). On the other hand, the responses indicate that it is a relief for parents to know that institutional and paid care 'is an option', which could be helpful when the first choice of informal care is not available. Furthermore, most of the parents in the in this study agreed that good paid care for children older than three years has beneficial effects on

the child's social and academic development.

5.4 Considerations behind childcare arrangements

The type of care differs according to many factors, including ethnicity, the mother's employment, the marital status and educational level of the parent/s, the age and number of children, the family's income and having a child with special needs (NICHD Early Childcare Research Network, 1997). Although in this research, parents depended on a mixed type of childcare, they often showed preference towards informal household childcare: this preference was influenced by various circumstances, beliefs and influences. In a study done by the JR Foundation (2003) many parents were found not to believe that formal childcare is best for their children (JRF, 2003). The results of this current study on such a small scale confirm that parents see themselves and other family members or friends as providing better quality care for their children than any paid carer. This belief had a powerful positive effect on the use of informal childcare. In addition, for mothers with careers, having the ability to work flexible hours could allow them to perform childcare duties, as demonstrated by the findings, that most of the mothers in this small scale sample had either changed to a part-time job or increased help provided by other family members, Figure (4.9).

The high cost of putting the child into formal care constituted a significant obstacle which deterred most parents from using paid childcare. A 2012 survey in the UK indicated that nursery costs had grown by nearly 6%, while 44,000 fewer families have been getting help with childcare costs since the tax credit cut in April 2011. At the same time, wages have continued to be almost static, and have increased by a lower rate of 0.3% (Family and Childcare Trust, 2013). The few Interviews of this study suggest that informal childcare was fulfilling for small children's care needs, and working mothers managed to provide such care when maternity leave, along with family members' help, was accessible. However, the high cost of paid care is a matter of concern for many

parents, since it is seen as a 'safety net' in case the unpaid childcare resources were not available for some reason at any time. Also, paid care is found to be considered as the right alternative childcare type to be offered for children over four years old by the some of the interviewed parents, for example (P8 respond).

5.5 Household childcare performers

By having a column in the diary asking who performed childcare in the recorded time, this study was able to find that all families in the sample depended on types of mixed childcare, carried out by parents, grandparents, extended family members and paid childcare. Parents who were interviewed expressed an attitude, which supported what they had recorded in the diaries, where both parents shared childcare responsibilities and got the help of other family members, or put their children into institutional care for part of the day or for very few days of the week.

Although in a few households where mothers are in full-time paid jobs and fathers become the main child carer, generally mothers still perform the main carer duties (JRFs, 2000). Both the interviews and diaries completed by parents of the small scale sample of families in Plymouth suggest the same point, which is that, while mothers played the main carer role, fathers stepped in during the weekends and the evenings. Moreover, some fathers even took over most of the childcare responsibilities when their partners had a full time, more stable and highly paid career.

Grandparents play an increasingly important role in performing childcare functions, supporting maternal employment and study (Statham, 2011). In most of the few observed families in this study, grandparents were the main providers of childcare for at least one day a week, not only in families with working or studying mothers, as most of the literature claims, but also to give mothers, and sometimes both parents, time for other activities such as keeping appointments, practicing a hobby, travelling, or even by

offering a space for relaxation.

Arthur et al., (2003), suggested that the 'moral economy' of childcare provided by grandparents is usually met with no complement by parents. However, this research shows that it is not the case in the studied families, where some participants expressed the need for more recognition of the role of grandparents. The matter of finding a way to show their appreciation was a major consideration for many of the participants. Interestingly, some parents have mentioned that one of the inhibiting factors in getting grandparents' help with their children is that the parents often feel guilty for putting such a burden on the older generation of the family.

Grandparents in general enjoy taking care of their grandchildren (Goodfellow & Lavery, 2003). This has been observed in the present study, and has been mentioned by some participants, who, after deciding to change their usual childcare arrangements, which involved the children's grandparents, were asked by those grandparents not to deprive them of the pleasure of looking after the grandchildren.

Although grandparents provide a good option to facilitate the balance of work/family life for many families around the UK, where 70% of childcare is done by people aged over 45 (Tunaley et al., 1999), this option is not available when grandparents live far away from the family (Wheelock and Jones, 2002; Arthur et al., 2003). In a number of the few studied families studied this was initially the issue, i.e. none of the grandparents or other members of the extended family lived nearby, and, as a consequence mothers in this sample were limited to part-time paid jobs or gave up their careers, while others had to put their children into paid childcare.

5.6 Childcare and mothers' employment

Duncan (2003) declares that mothers do not see their care-giver role as a restraint on paid work, but often concentrate on the desire to give care to their children before

considering individual utility maximization and the economic costs and benefits of taking employment. Mothers prioritise particular sorts of activities with their children and reschedule their agenda to include them. As a result, increased hours of employment of the mother causes only slight reductions of time spent on activities with their children. This creates a move toward better quality care, as developmental activities form a larger amount of childcare time (Bittman, et al., 2004).

The results displayed in (Table 4.10) in fact corroborate with both claims which shows the related viewpoints of the interviewed working mothers' who stressed that to what extent having paid work makes mothers and both parents realise the paramount importance of spending quality time with their children. However, they found it is stressful for working parents and mothers in particular, to combine the duties involved in both pursuing a career and childcare.

This could be due to the extra effort involved in meeting the standards of both roles, while focusing on quality childcare time. These results tend to confirm the findings of other researchers, who have stated that more pressure is placed on mothers with regard to other activities, such as other household production and/or leisure, by the increased non-domestic work of those among them who take on the most responsibility (Howie, et al., 2006).

5.7 Recognition of Unpaid Childcare Performers

This study has found that, despite the enormous duty and responsibility of looking after the next generation, which unpaid childcare providers, especially mothers, take on, they generally have the strong impression that their efforts are unrecognised both formally and socially, and even by other family members. This concurs with the findings of Monroe and Tiller, who assert that "Many women do informal work for which they receive little credit, most notably the care of children and family " (Monroe & Tiller, 2001, p.819).

The few interviewed mothers in Plymouth spoke of the pressure they experienced, above all with the first child, and the demands and worries at the time of having the second or third child. Most of the families in the study received support from their partners, parents, in-laws and friends. Some mentioned the support they received from local mother and child groups and the emotional and physical effect on them of that support. Interestingly, both the records of time-use diaries and the interviews in this study show that fathers contribute much more comprehensively to household childcare than is commonly realised. Moreover, fathers who are carrying out the main carer role expressed deep disappointment with the low appreciation they receive, and wished for more acknowledgment at both an informal and an official level.

The sample of parents in this study showed their dissatisfaction over the lack of governmental support, especially in relation to support for grandparents, work legalisation, and maternal/parental leave.

5.8 Limitations of the study

The research aimed to measure the monetary value of household childcare in Plymouth by applying the replacement cost input method. Such an aim has been acknowledged as a challenging process, which discouraged similar research. That sort of claim along with the complexity of the estimation procedure has been a major difficulty of this study. The research aimed in addition to draw a detailed picture of the nature of childcare in Plymouth families, based on the in-depth investigation of families' childcare arrangements.

Difficulties in data collection that have been mentioned in Chapter Three led to the main limitation, which was the lack of probability sampling. With the small scale of data collected from Plymouth, the outcomes of primary data analysis did not enable generalizations about the population. Many efforts were made for period of six months to raise the response rate but, because of the time limits, changes were made and secondary data considered.

The secondary data of the UK's TUS 2000 were used for the purpose of estimation in order to measure the care time input on a larger scale and to investigate the context of Plymouth as a part of the south west region. The thirteen-year gap between the time, during which the TUS and the time of this current research were conducted, represents a probable limitation of the data used. However, the survey data used were considered the most suitable and dependable data available.

Furthermore, providing participants with a prefilled time use diary as an example along with the already given information letter and the assured face-to-face contact, could have helped in getting higher response rate. Moreover, primary data were mainly employed to explore in depth the nature of childcare in some Plymouth families. Nevertheless, by using the snowball-sampling method, the variation in participants' demography and social standards was limited. A wider range of childcare arrangements models was achieved, however, by contacting parents who did not send their children to nurseries. This would not have been achieved if the data collection had depended entirely on convenience sampling with the help of childcare institutions, and this may be of use in further research in this subject area.

Finally, this study used time-use diaries to measure the time spent on childcare activities. The application of time use diaries is more likely to provide conditioned responses and to suffer from an unsatisfactory level of cooperation. Moreover, some activities might not be precisely recorded. Still, this study overcame such issues by ensuring face-to-face contact with participants, providing clear information about the study aims, and following the completion of time-use diaries process with in-depth interviews. Although interviews were found to be time-consuming and relied on the interviewer's abilities in obtaining the required information, they enabled the research to assess the reliability of the records. That was accomplished by comparing data which were collected from diaries to the context of participants' responses to the questions during the interviews.

Chapter 6: Conclusion

This chapter provides an overview of the study and reflects back on whether the aims and objectives of the research have been met. It provides a summary of the study and its findings, followed by suggestions and recommendations for policy and further research.

6.1 Reflecting on the research

This study aimed to introduce an estimate of the household childcare by applying the input replacement cost method in the UK. Time use data were collected from number of households of couples with children in Plymouth, and used along with the UK's TUS (2000) data. Then, these records were valued by assigning shadow wages of parallel paid career i.e. child-minder, teacher assistant and live-in nanny to measure the contribution of household childcare as a percentage of the UK's GDP for 2012. Results came out supporting the complexity of such estimates due to the complications in defining childcare activities; and the lack of comparable paid work of the unpaid childcare done by family members. Nonetheless, the resulting estimates show the significance of such household production with about £137-182 billion in year 2012 i.e. 9.1-12.13% of GDP. Yet, this important portion of the national production is totally unrepresented in the figures of GDP, which generates lots of questions about the reality of the claimed decline in GDP and the need for the current recession policy.

In order to investigate parents' attitudes towards childcare in Plymouth, this study faced the limitation of low response rate. Therefore, its findings could not be used in drawing generalisations to the whole of Plymouth. Yet, the small number of interviews enabled the research to relate data, which were provided by the completed time-use diaries, to the opinions and attitudes expressed during the interviews. Also, interviews' outcomes enabled to elaborate diaries' records. As a consequence, time allocation and variation

have been explained, and a further exploration of parents' perspectives has been achieved. A multiple-childcare arrangement model was found to be the major trend the studied families. Many factors seem to influence such arrangements: the child's interests, parents' employment, their opinions of paid care, the high cost of institutional care and the availability of grandparents' help. In addition, the strong relationship between mothers' employment and childcare settings has been confirmed. Besides, more recognition has been required of unpaid childcare performers i.e. mothers, fathers and grandparents for the quite demanding and stressful duty they are fulfilling towards society by taking care of the future citizens.

6.2 Recommendations

6.2.1 Policy implications

- *For the measurement of childcare in the UK's HHSA, it is highly recommended to employ a specialist shadow wage for each component of the childcare activities, instead of the general career of a live-in nanny.*
- *Since the failure in defining the output of childcare activity is a critical limitation in applying the output method in measurement, the application of a well-managed input approach is more encouraged confine the state by (Abraham & Mackie, 2005).*
- *A policy that supports a second centrally funded TUS in the UK is strongly needed. One of the many benefits of such a survey is that it will provide a better and up to date data base, which in turn would enable capturing any patterns and changes on childcare time input.*
- *Considering the strong relationship between having a child and parents' employment, for mothers, in particular, work policy to be amended in order to ease the parental childcare task. For instance, longer maternity and paternity leave is suggested, which would allow*

parental care to be more feasible during the first and very significant years of the child's life. In addition, policies which encourage businesses to provide more flexible working hours during school days, are recommended for a better well-being of the children and their parents.

- *It has been noticed during the few interviews that, despite the various formal and community help resources currently available, some parents are either misinformed or totally unaware of the support that is offered. Therefore, the development of better advisory tools is suggested in order to reach a wider number of parents and child carers nationwide.*
- *'Based on the small number of parents in the sample, a sense of the need for greater recognition of the role and cost of such household work, not only for working parents but also for those staying at home and other unpaid carers. The current government has been in favour of supporting institutional childcare and working parents, which is a positive step towards families' wellbeing in Britain. Yet, such support could not reach its good aims without recognising that the family forgoes actual and expendable income when a parent takes on a full time childcare job; therefore they need further support as well.*

6.2.2 Recommendations for Further Research

- *A larger and specifically childcare related time-use data set is recommended to be conducted. In addition, some sort of incentives to potential respondents is believed to facilitate other surveys and data collection for similar research in this subject area (3.5 Sampling; 5.8 Limitations of the study).*

- *It is preferable to take into consideration the different intensity of the various childcare activities while deciding on the shadow wages i.e. wages on different percentiles, which will enable the progress toward more accurate estimate of the household childcare, which has been recommended also by (Folbre et al. 2005).*
- *Although the input approach involves a number of limitations, it is still theoretically more applicable than the output method in measuring unpaid childcare. With the few number of studies, which attempted to employ these methods (output in particular), many complex points in the problematic measurement are still unsolved. Therefore, more research is still needed in order to get a precise monetary value of unpaid childcare.*
- *As the type and quality of childcare provided by the family differ according to many factors such as ethnicity and religion (NICHD early childcare research network, 1997), studying the influence of these elements on the monetary value of household childcare is suggested for further research.*

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Appendix A: Information Sheet

UNIVERSITY OF PLYMOUTH

FACULTY OF SCIENCE AND TECHNOLOGY

RESEARCH INFORMATION SHEET

Name of Principal Investigator: *Hoayda DARKAL*

Title of Research: *An Assessment of The input Approach to Estimate Household
Childcare the case of Plymouth, UK*

Aim of research:

- 1) *To examine the application of input replacement cost approach in estimating household childcare at the household and national level.*
- 2) *To investigate parents attitudes towards childcare in Plymouth.*
- 3) *To draw the implications for household childcare measuring plans based on the findings of the research.*

Description of procedure: *Households will be asked to fill in the diaries for two days (a weekday and a weekend day) and to use the pre-paid envelope to send them, as soon as they are finished, by the end of this month.*

Participants who agrees to be interviewed, will be asked questions related to experience and opinions on both the paid and unpaid childcare, and the integration of what is important to the child, family and communities. Questions about how the childcare arrangements affect the paid work decisions will be asked. The filling of the time-use diary process will be discussed as well. The interview will last for about 40 minutes.

Description of risks: *NONE*

Benefits of proposed research: *The research would be helpful in three dimensions; putting the unpaid childcare activities in the spot light, valuing the non-monetary household work and assessing the National system accounts.*

Right to withdraw: *the following statement will be used in the survey instrument: You are free to withdraw at any time, at which point all previous responses will be discarded and will not be used in any way. All the information that you provide will be treated as confidential, in so far as none of your responses will be directly attributed to you. Your personal details will be anonymous and destroyed when the project is completed.*

If you are dissatisfied with the way the research is conducted, please contact the principal investigator in the first instance: telephone number: Hoayda Darkal 01752 585933. If you feel the problem has not been resolved please contact the secretary to the Faculty of Science and Technology Human Ethics Committee: Mrs Paula Simson 01752 584503.

Appendix B: Time-Use Diary

Instructions

Thank you for participating in our study. The main objective of this study is to assess two ways to estimate household child care in the UK; the time and the costs.

An important part of our research is to find out how much time household childcare activities take. The Diary is a listing of the childcare activities that are carried out in your house during one weekday and one weekend day. These diaries will help me collect the most accurate information possible.

- *Please fill out the Time Diary for each **day (one weekday and a weekend day)** where appropriate.*
- *Please use **one line** for each activity and write in what the exact childcare activity was performed.*
- *Please indicate who was doing the activity with the child or who was in the same location with the child.*
- *Please indicate if the carer was doing any **other** activity at the same time.*
- *Please fill out the diary for the entire 24-hour time period, starting with midnight on the specified day and running until midnight on the next day for a week.*
- *Your information remains confidential and anonymous. You are free to withdraw at any time, at which point all previous responses will be discarded and will not be used in any way.*

Please after you complete filling this diary put it in the pre-paid envelope and send it by the 10th June.

Any questions? Please Call 07858 870112

e-mail: hoayda.darkal@plymouth.ac.uk

Childcare Activity Diary Day Date.....

Day 1

Who is filling –in the diary i.e. parent, sibling, grand, relative, a friend? ____

** Please mention when the child is sleeping*

Time		Unspecified care e.g. helping the child	Physical care e.g. washing, supervision	Feeding	Other physical Care e.g. changing nappies	Talk-based e.g. teaching	Reading & playing	Accompanying	Other	number of children	Who is looking after the child
hr	min										
12 a.m											
1 a.m											
2 a.m											
3 a.m											
4 a.m											
5 a.m											
6 a.m											
7 a.m											

time		Unspecified care e.g. helping the child	Physical care e.g. washing, supervision	Feeding	Other physical Care e.g. changing nappies	Talk-based e.g. teaching	Reading & playing	Accompanying	Other	number of children	Who is looking after the child
hr	min										
8 a.m											
9 a.m											
10 a.m											
11 a.m											
12 p.m											
1 p.m											
2 p.m											
3 p.m											

time		Unspecified care e.g. helping the child	Physical care e.g. washing, supervision	Feeding	Other physical Care e.g. changing	Talk-based e.g. teaching	Reading & playing	Accompanying	Other	number of children	Who is looking after the child
hr	min										
4 p.m											
5 p.m											
6 p.m											
7 p.m											
8 p.m											
9 p.m											
10 p.m											
11 p.m											

a) How typical was this Day? (Please mark an X in the box)

Very
Typical.....Not at all
Typical
☐1 ☐2 ☐3 ☐4 ☐5

b) On what date was this diary completed?

_____ (MONTH) _____ (DAY) _____ (YEAR)

Please, complete filling- in the diary →

Childcare Activity Diary Day Date.....

Day 2

Who is filling –in the diary i.e. parent, sibling, grand, relative, a friend? ____

** Please mention when the child is sleeping*

time		Unspecified care e.g. helping the child	Physical care e.g. washing, supervision	Feeding	Other physical Care e.g. changing nappies	Talk-based e.g. teaching	Reading & playing	Accompanying	Other	number of children	Who is looking after the child
hr	min										
12 a.m											
1 a.m											
2 a.m											
3 a.m											
4 a.m											
5 a.m											
6 a.m											
7 a.m											

time		Unspecified care e.g. helping the child	Physical care e.g. washing, supervision	Feeding	Other physical Care e.g. changing nappies	Talk-based e.g. teaching	Reading & playing	Accompanying	Other	number of children	Who is looking after the child
hr	min										
8 a.m											
9 a.m											
10 a.m											
11 a.m											
12 p.m											
1 p.m											
2 p.m											
3 p.m											

time		Unspecified care e.g. helping the child	Physical care e.g. washing, supervision	Feeding	Other physical Care e.g. changing	Talk-based e.g. teaching	Reading & playing	Accompanying	Other	number of children	Who is looking after the child
hr	min										
4 p.m											
5 p.m											
6 p.m											
7 p.m											
8 p.m											
9 p.m											
10 p.m											
11 p.m											

a) How typical was this Day? (Please mark an X in the box)

Very Typical.....Not at all Typical
☐1 ☐2 ☐3 ☐4 ☐5

b) On what date was this diary completed?

_____ (MONTH) _____ (DAY) _____ (YEAR)

• Marital status:

☐ Married / remarried

☐ Single (never married/ separated / divorced/ widowed)

• Age and Number of Children at the household:

Child's age	0-2	3-4	5-9	10-14
Number of children				

• Are you happy to be interviewed:

- ☐ Yes, your contact details.....
- ☐ No.

• The information you provide in this diary will be used only for research purposes.

• If you have any questions or want to withdrawal, Please contact Hoayda DARKAL hoayda.darkal@plymouth.ac.uk

•

Thank you very much for filling- in this diary

Appendix C: Interview

Date:

Place:

I want to thank you for taking the time to meet with me today.

My name is Hoayda Darkal and I would like to talk to you about your experiences with both paid and unpaid childcare activities and associated arrangements.

The interview should take about 40 minutes. If you are in agreement, I will be taping the session for the sole purpose of ensuring that I do not miss any of your comments.

Your responses will be kept confidential in as far as they will only be used by me for the purpose of this study and I will ensure that any information I include in the study does not identify you as the respondent. Please remember, you don't have to talk about anything you don't want to and you may end the interview at any time.

Are there any questions about what I have just explained?

Please, sign the consent form if you are happy to participate.

I have three main areas of interest in the provision of childcare and so my questions are structured in four sections, as follows:

1. *Your own experiences with child arrangements for your children*
 - *What have been the arrangements? Have they been the same for all children? If not why have there been changes?*

- *Main factors influencing your choice of arrangement? Which were the most important?*
 - *Would you have preferred some other arrangement? If so what would this have been and why?*
 - *How could having a child and a career (paid work) affect each other? Could you please talk about your experience?*
2. *Your opinions of the advantages and disadvantages of unpaid and paid childcare arrangements, from the perspective of the provider (parent or other related person) and from the perspective of the child.*
- *What do you think about unpaid childcare? Pros and cons?*
 - *How about the paid childcare? What do you think about it?*
 - *Do you use any? Do you consider using it? Would you mention the advantages and the disadvantages of it?*
 - *How important do you believe the type and quality of childcare could have in terms of the child development generally?*
3. *Your opinion on the current degree of recognition of unpaid childcare provided by either/both parents or another person related to the family.*
- *How much appreciated is it socially and formally?*
4. *Your experience in filling in the diary;*
- *While you were filling in the diary, how did it reflect on you?*
 - *Do you have any critical feedback on the diary itself?*

Thank you very much

