

MSc in Public Policy

**IMPACT OF OPORTUNIDADES BENEFITS ON WORKING
INCENTIVES IN RURAL AND URBAN AREAS:
A PUBLIC POLICY PERSPECTIVE**

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ABSTRACT

There has been evidence in the economic literature that suggest that income aid programmes designed to alleviate poverty have had negative impacts on peoples working incentives, thus creating an aid dependency that could imply a poverty trap for beneficiaries. The aim of the present analysis is to evaluate if this proposition holds for a conditional cash transfer programme implemented in Mexico called OPORTUNIDADES.

Using the Mexican National Income and Expenditure Survey 2004 (ENIGH), the analysis is carried out by constructing a linear regression model with theoretically significant control variables, to test for differences between beneficiaries and non-beneficiaries on their average hours worked per household. It also analyses if there is a difference in hours worked between urban and rural beneficiaries, since the livelihood strategies for each type of settlement could be rather diverse. The main findings of this research are as follows:

- On average, beneficiaries work 1.56 fewer weekly hours per working age person of the household than non-beneficiaries, which could imply an approximation of 48 less days worked per year of one person of the household.
- This negative tendency on beneficiaries weekly hours worked per working age person of the household holds when including relevant control variables into the analysis.
- The social exclusion index shows that, on average, as a household localized in a more marginalized community people tend to work more, which presents the opposite tendency of that shown by being a beneficiary.
- On average, households with female heads work 2 weekly hours less per working age member of the household, than those with male household head.
- There was no statistically significant evidence that urban beneficiaries' work patterns are different from the rural beneficiaries' ones.

The analysis also recognizes that there are some limitations on the reach of these findings that will need to be considered when translating them into the decision-making process. Evenmore, the relevant findings of this research call for further studies on the subject.

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ACRONYMS

CCT	Conditional Cash Transfers
CONAPO	National Population Council
CTMP	Technical Committee for Poverty Measurement
ENIGH	National Household Income and Expenditure Survey
GDP	Gross Domestic Product
INEGI	National Institute of Statistics, Geography, and Informatics
NPM	New Public Management
OECD	Organization for Economic Cooperation and Development
OLS	Ordinary Least Squares
SEDESOL	Ministry of Social Development

INTRODUCTION

Poverty has become a more central topic in the social policy debate, not just in developing nations but also in the developed world. The establishment of the Millennium Development Goals and the importance poverty has gained in the international arena have imposed a particular pressure on national governments to deal with the problem in a more comprehensive and effective way. However, there is still an ongoing debate over the definition of poverty, its measurement, and the strategies to fight against it (Alcock, 1997; Miller 1996).

It is also an important subject for the world and national agendas, not only for the moral imperative that the fight against poverty imposes, but also due to the amount of budgetary resources that are allocated to this area of the public realm.¹ The evolution of the role of the state has gone beyond the classical Rousseau's *social contract*, aimed at reducing the fear of violence, broadening the concept of security including not just national security, but also the provision of a better life for its citizens. Furthermore, the historical role and sustainability of the state has shifted from the mere provision of security in military terms, to include the provision of a better life and opportunities for citizens. This broaden role of the government impacts the organization of the modern state, which has reached the point where the need to reassess the efficiency and accuracy in the provision of social programmes has become a priority, particularly those targeted to fight against poverty.

The purpose of this research is to contribute to the debate on poverty alleviation linking theory and evidence using a definition of the concept in a more comprehensive

¹ Refer to Annex 1. Figures 1 and 2, which illustrate the recent tendencies in Mexico's social spending.

manner. One fundamental aspect that needs to be incorporated not just in the theoretical debate, but also in governmental interventions, is considering peoples' reactions towards policies—as Amartya Sen (1995) does, looking at poor people as *agents* and not as *patients*—and link those reactions to the structure and implementation of governmental programmes developed to aid them.

In order to do this, it is imperative that policy evaluations observe whether there are any iterative changes in the structure of incentives that lead to behavioural modifications of receptors of government interventions. Making continuous assessments to identify adverse incentives in order to avoid distortions resulting from a single evaluation is critical, especially when there is relevant evidence from experiences in other countries that they could arise. Given the evidence of the impact of welfare programmes on work incentives found in some countries such as the US (Morfitt 1992; Sen 1995; Atkinson 1995; Blank 2000; Stiglitz 2000), it is important to assess if receiving conditional cash transfers from Mexico's internationally recognised poverty alleviation strategy Programa de Desarrollo Humano Oportunidades (formerly Progresas) has an impact on poor peoples' incentives to engage in working activities.

It has been argued that the condition of poverty is a vicious cycle, and in order to break it, governments plan strategies to intervene and convert it into a virtuous one. These strategies not only attempt to reduce vulnerability created by the shocks and stresses that emerge as consequence of the economic, political and social structures (Wratten 1995:17), but also to modify the capacities and incentives of people living in poverty, changing the ways in which they deal with their everyday life. Nevertheless, it is important to raise the question if the interventions are achieving its goals. Are interventions creating a dependency on government aid by negatively altering behavioural patterns inside the community? Are the

positive behavioural changes created to break the vicious cycle of poverty becoming embedded or are only observed during the implementation of the interventions? These are fundamental questions in the effort to attain a sustainable and effective strategy towards the alleviation of poverty and also for the sustainability and efficiency of the use of public finances.

The research presented herein evaluates if receiving cash transfers from a welfare programme generates behavioural patterns that change the incentives of beneficiaries from engaging in the labour market, and thus creating dependency on welfare, which could hamper the search to overcome peoples' vulnerabilities to stresses and shocks in their livelihoods. For this purpose, it will be assessed if these claims hold up for the programme OPORTUNIDADES in Mexico. This will be done through a basic linear model that looks at the impact of being a beneficiary on hours worked as a proxy to measure incentives, given that are characteristics that cannot easily be measured.

This research will be organized as follows: the first section reviews the theory behind work incentives and welfare programmes through evidence from other countries on the subject matter. In order to contextualize the case for Mexico, the second section broadly explores the characteristics and particularities of the programme OPORTUNIDADES. In order to make the link between the theory and the case of OPORTUNIDADES explained in the first two sections, the basis for this research will be set out. As a first instance, the theoretical model and its methodological basis will be presented, followed by the assumptions and the limitations that delimit the reach of the interpretations. The analysis will follow to report the results of the model and their interpretation. Finally, the analysis will explore not only the methodological interpretation of the findings, but also will state the limitations of translating them into the decision-making process.

WORK INCENTIVES AND WELFARE PROGRAMMES: A LITERATURE REVIEW

This section will carry out a broad overview of the contemporary debates over the definition of poverty and its implications on the kind of governmental interventions they call for. The section will proceed exploring the theoretical background of the relationship between welfare and work, as well as some empirical evidence that has been developed that prove the existence of negative work incentives as a result of welfare programmes. Finally, the section will outline a previous study of OPORTUNIDADES which will serve as guidance for the present research.

Authors like A. Sen (1995, 1999), S.M. Miller (1996) and most International Organization's literature focused on poverty have identified that how poverty is defined directly affects the type of interventions that governments implement. The extensive literature on poverty has called for a more comprehensive understanding of poverty, reaching definitions beyond the concept of lack of income and economic growth. Sen (1995, 1999) has been especially emphatic about this, searching for a more integrative definition focused on the importance of peoples' capabilities and entitlements to overcome their poverty condition. The need to incorporate the concept of vulnerability—understood as the inability of people to respond to risk, shocks and stresses in their livelihoods (DFID, 2001; Wratten, 1995)—has encouraged governments to design more comprehensive and critical interventions towards poverty.

The literature on poverty has tried to measure it by other means than income to incorporate this broader definition, especially by focusing on measuring expenditure of households as opposed to income as a more accurate form of identifying the poor. Nevertheless, the debate has still not found an agreement. However, there are new findings

which have suggested that for countries such as Mexico, where the condition of poverty is relatively acute, the difference between measuring poverty by income and measuring it by expenditure do not have a significantly different result, thus making income an easier and cheaper measure. (De la Torre 2005).

Even when there are significant differences in measurement between the two methodologies, income improvement and the stability required to overcome poverty cannot be forgotten or dependent greatly on government cash transfers. Being this the case would imply an increase in the probability of a return to poverty if aid ends. For this reason, looking at the embedded changes in household behaviour is one of the priorities for attaining long-term poverty alleviation strategies.

Recognising the need for a broader definition and explanation of the causes of poverty, Mexico has designed a programme not only focused on the transfer of income—which is also one of the elements of the programme—but also on the improvement of peoples' health and education that help them build the necessary capacities to overcome the condition of poverty. Still, income continues to be a fundamental element of welfare programmes and should not be forgotten, particularly in urban areas where the need for money for subsistence and the lack of income generating strategies additional to their labour force are more acute (Wratten, 1995). While income is not the only factor that defines poverty, recognizing its importance as a means to overcome the condition of poverty raises the question of the relationship between government intervention programmes, and their effect on beneficiaries' working incentives to assess if should also include and promote labour to support those strategies.

Income is still an important component of welfare programmes, thus, observing the behavioural changes that the cash transfer can create inside the household, be it positive or negative, should be an evaluation target. Stiglitz (2000) argues that one of the policy debates surrounding welfare programmes is its impact on the incentives to work, since increasing the family income through engaging into labour activities or by increasing the hours worked, could make them ineligible for programme benefits. The extra income gained by working extra hours would not compensate what was received by the welfare programme. In economic terms, “[b]ecause the marginal return—the extra net income received from working an extra hour—is reduced, individuals on welfare have less incentive to work” (*Ibid.*: 393).

Sen (1995) correctly points out that it is important to look at the incentives created by intervention strategies, understanding that beneficiaries of welfare programmes are “active persons” and not just “passive receivers”. Intervention strategies, such as poverty alleviation programmes, are aimed at changing the behaviour of the recipients in a positive way. Nevertheless, policy makers should also be vigilant of the possible negative outcomes that occur as side effects with all behavioural changes. One specific area of incentives that has been identified as a possible element of concern is the incentive structure created by welfare support on participating in labour activities. Considering the reactions from the beneficiaries (both in positive and negative terms) in the structure and re-structuring system of the programmes to assume an “active” vision of recipients of welfare programmes can illuminate policy design and make implementation more successful.

Authors like Morfitt (1992), Sen (1995), Atkinson (1995), and Blank (2000) have identified that giving cash transfers to targeted groups may reduce the incentives of beneficiaries to engage in working activities, in order to maintain the characteristics that made them eligible, thus not improving their condition and creating a benefit trap. These

propositions encouraged the present research to question if this phenomenon developed in a programme with conditional cash transfers such as OPORTUNIDADES.

Furthermore, Besley and Coate analyze the shift from “welfare” to “workfare” testing two distinctive incentive arguments for imposing work requirements for recipients of poverty alleviation programmes: a *screening* argument, which says that work requirements may serve as means of targeting transfers to the most needed; and a *deterrent* argument, which identifies that they may serve as a device to encourage poverty-reducing investments (1995: 249).² They identified that these two reasons to support imposing work requirements serve better for development economies because: a) for the screening argument to work, governments may have limited ability to monitor recipients; b) for workfare to be a deterrent the amount of work demanded may be considerably in excess of that which poor people would do in the absence of intervention (*Ibid*: 260).

When looking at some empirical evidence about work incentives, Stiglitz acknowledges when analysing US Medicaid, along with some other income distribution programmes, “[l]oss of eligibility of medical benefits is cited as one of the main impediments to moving people from welfare to work” (2000: 394). Supporting this, Morfitt (1992) concludes that the incentive effects of the US welfare system show important evidence of the negative effects on labour supply and implies an increase in the participation in the welfare system. These conclusions have had important impacts on welfare policy reforms in the US in 1996, and have imposed the necessity to assess if there is a benefit dependency incentive caused by the social policy system in different countries. Rebecca Blank (2000) assessed that the reforms that followed the recognition of these adverse incentives in the welfare system

² The deterrent argument is also mentioned by Bourges and Stern, 1991, in Ahmad, Dreze, Hills and Sen (1991: 70).

have had a positive impact in the labour market enrolment of participants, particularly on women. This evidence shows that public policy responses to evaluations and assessments may provide more responsive and effective policy interventions.

Even though there is a vast literature in developed countries on the effects of welfare on work incentives, there is still no consensus over this subject. Bourges and Stern state that “[t]he empirical literature [on the reduction of effort, care and savings incentive] is hard to evaluate (Atkinson 1989), but in theory the possibility is real and may have claimed that the problems of incentives in practice have been very substantial,” (1991: 70).

The evidence found in other countries raises the importance of testing them in other countries and contexts, especially in a country with such levels of poverty as Mexico, because the literature devoted to explaining the phenomena have not been extensive and the availability of data has been improving greatly in the last decade. As Robin Burgess and Nicholas Stern, (1991) state:

“...incentive problems have, in many respects, dominated the econometric literature on social security for developed countries. (Atkinson 1989; Katz and Meyer 1990; Krueger 1990; Morfitt 1990). Empirical work for developing countries has been much less substantial. A major reason for this is lack of data.”(In Ahmad, Dreze, Hills and Sen, 1991: 70)

Skoufias and Parker (2000) had the same concern, analysing the impact of PROGRESA (now OPORTUNIDADES) on work and time allocation of its beneficiaries. This previous research will be central for the development of the present one. Putting aside the results of children’s’ incentives, their findings and conclusions reported that there had not been particular reductions in labour market participation rates for adults receiving the benefits from the programme. Their explanation of their findings relied on the argument that there is

no income effect on beneficiaries' time allocation because of the three years limit of PROGRESA's benefits, irrespective of family income (as opposed to what Morfitt (1992) found in the case of the US, where benefits depended directly on family income).

Although these findings could be regarded as discouraging to some of the claims proposed here so far, Parker and Skoufias' (2000) analysis requires further investigation due to at least two important elements. Firstly, their evaluation was carried out in the first stages of the implementation of the programme, when it was only implemented in rural areas. In recent stages, the programme has been expanded to urban settings, where a direct cash transfer could have a different impact on work incentives because of the different characteristics of urban poverty (Wratten, 1995). Given this recent trend in the expansion of OPORTUNIDADES it is important to reassess if the prior tendencies still hold true.

Secondly, they assumed that, according to the operation rules of the programme, the benefits had fixed period of three years established for the withdrawal of the cash transfer, subject to compliance of the corresponding conditions. However, given the structure of OPORTUNIDADES, the possibility of maintaining the benefits over three years is highly feasible because the operation rules also consider extending the benefits after that period, depending on the evaluation of the socioeconomic conditions of the household through a recertification process. These tendencies may have shifted the incentive structure and perceptions of beneficiaries about the programme, and thus may have an impact in work incentives. These two elements require the re-evaluation of previous findings, which is the task of this analysis.

If the results of this research corroborate the findings of Skoufias and Parker (2000a), this would mean that the structure of the programme has not just a positive impact in next

generation's opportunities, but also in this current generation's probabilities to improve their condition. On the other hand, if they lead to an observation of a negative impact on work incentives, there are other elements that would need to be considered in order to assess the possibility of inclusion of work promotion strategies in a programme as OPORTUNIDADES.

THE PROGRAMME AND ITS CONTEXT

The World Bank (2004: xix) revealed that in the last decade the condition of the poor in Mexico has very closely followed the macroeconomic and labour market fluctuations, particularly linked to the harshness of the economic crisis of 1994. Extreme poverty increased from 21% of the population in 1994 to 37% in 1996 (*Ibid.*). In 2002, extreme poverty was reduced to 20% of the total population, improving only by 1% the poverty levels reported before the 1994 crisis (*Ibid.*). This report further recognizes that, even though the labour market unemployment rates do not have a huge impact on poor households since most of them are employed in the informal sector, the low returns of working (either in self-employment or as wages) and sub-employment still remain as a fundamental characteristic of poverty (*Ibid.*). While the debate on poverty has reached a complexity and scope that goes beyond income explanations, these findings makes us look further over the implications of income and work into poverty alleviation programmes.

There is a worldwide consensus over the urgency of addressing poverty, yet governments are still far from reaching a consensus over the strategies to eradicate it. However, as has been recognised by International Organizations such as the Inter-American Development Bank and the World Bank, Mexico has been in the frontline to find intervention policies that address the issue in an efficient and effective manner. The aim of this section is

to provide the reader with a general context of Mexico's condition in terms of poverty and the characteristics of the programme to be studied. First the basic characteristics of OPORTUNIDADES will be outlined; in the second part, there will be a comparative view of public resources allocated for social spending.

In 2002, the Mexican government, following the methodology established by a high level Technical Committee comprised of academics and public officials (CTMP) established three poverty lines in order to identify the people that live in conditions of poverty. The *nutritional poverty line* is the threshold to identify those people who do not earn enough money to even satisfy their basic nutritional needs. The *capacity poverty line* identifies the people that aside from satisfying their nutritional requirements are not able to cover their basic needs, such as education and health. Finally, the *capital poverty line* addresses the people that cannot satisfy their non-nutritional needs like land and housing. (CTMP, 2002: 57)

OPORTUNIDADES –translated in English as *Opportunities*– was launched in 1997, with the name of PROGRESA. The programme initially focused on poor communities in rural areas, but since 2001 has been extended to incorporate urban areas. The strategy concentrates in building peoples' capacities through the provision of services and Conditional Cash Transfers (CCT) with the aim of improving nutrition, education and health of recipients, to stop the intergenerational transmission of poverty (Operation Rules of the Programme, 2005). It has been evaluated as a very successful strategy to reduce poverty, and even recognized by international organizations as a *best practice* intervention strategy.³

³ For further reference: Escobar, Agustín and Mercedes González de la Rocha (2003); Rawlings and Rubio (2003); Skoufias and Parker (2000a, 2000b).

One of its particularities is that it is an inter-ministerial effort to tackle poverty through a multidimensional approach, linking three key areas of development: nutrition, education and health. OPORTUNIDADES is coordinated by a special agency, linking three ministries of the federal government: the Ministry of Social Development (SEDESOL), Ministry of Education, and Ministry of Health. Each has assigned an independent budget dedicated exclusively for that programme.

Currently, the number of beneficiaries of this programme has rapidly increased from 2.6 million families in 2000 to 5 million families in 2005 (SEDESOL/ OPORTUNIDADES, 2005). The programme structure is as follows:

- Conditional cash and in-kind benefits, which are transferred preferably to the mother who has been identified as the best channel for aid to reach children;
- The conditionality of the transfers are dependent on attendance of children to school, regular visits to the doctor, and attendance to basic health and nutrition training talks;
- In order for beneficiaries to comply with the conditions, they are given access to the social security system.
- Scholarships and in-kind support are available for all school-age children;

For most developed countries there has been a recent change in public social spending. Since 1980, for OECD countries, the average GDP proportion dedicated to social spending⁴ grew, although at a more moderate rate than in the previous years, reaching a peak in 1993 of 23%. Since then, social expenditures has steadily declined—on average—by around 1.5 points of GDP by 2001, being non-health expenditures the ones that account for the entire decline (OECD, 2005a: 60). This trend has been more associated with developed countries. In the case of Mexico (a middle income country), the GDP proportion dedicated to social spending, although growing steadily, has never been near the average of the other

⁴ Social spending includes pensions, income support, health, and all social services (OECD, 2005)

OECD countries. While the total social public spending in Mexico reached 11.8% of the GDP in 2001, if the proportion of public resources spent in pensions for that same year are excluded, the figure drops to 4.2% (OECD 2004). Highlighting the distinctions in trends between countries is crucial to contextualize the reforms that have taken place in some developed countries. Moreover, with the context of Mexico in mind, one can learn and adapt from other countries experiences, recognizing, when necessary, the limitations in scope and applicability to the particular case.

Given the scarcity of governmental resources available to cope with all the responsibilities the state has, it is paramount to investigate if those resources are being used in an efficient manner. As Bourges and Stern recognize, “[l]imited revenues and high costs [of aid programmes] mean that sources of finance and the efficient use of resources should be central,” (1991: 73). Responding to the New Public Management⁵ approach to public administration, and given the increasing amount of public resources that social policy in Mexico is receiving, there has been a trend in the national and international arena of requiring programme evaluations in order to measure the results and effectiveness of government interventions.

Having broadly reviewed the literature that underlines the theoretical background of the relationship between welfare and work, and having described the characteristics and context of OPORTUNIDADES, the next section will proceed to the establishment of the basis for the present analysis. Before reporting the findings, it will be established the methodological and technical considerations upon where the model was constructed.

⁵ For a more in-depth exploration of New Public Management and its contemporary debates refer to Peters and Savoie (Eds.), *Governance in the Twenty-first Century: revitalizing the public service*. Canadian Centre for Management Development, 2000.

METHODOLOGY

Mexico has made important efforts towards the improvement of the data collection and evaluation efforts of government interventions. Furthermore, the strengthening of democratic institutions committed to accountability and transparency has opened access to the information that supports evaluations. This current trend should be used and exploited to increase the possibility of understanding characteristics and phenomena relevant to the country that may provide with more evidence in order to allow more responsive and informed decision-making.

Results of numerous evaluations of the programme have found that its main results have been positive.⁶ There has been a significant improvement in school attendance ratios and health conditions of the families receiving OPORTUNIDADES benefits, such as the reduction in urban and rural areas of 17% and 10% respectively on school desertion during the period of 1997-2004. Also, the people receiving benefits from the programme have increased high school enrolment by 24% in rural and 10% in urban areas. In health issues, there has been an 11% reduction in maternal mortality rates, and a 2% reduction in child mortality rates. (Government Innovation Office, 2005)

As stated earlier, OPORTUNIDADES is a programme aimed at improving the capabilities of peoples, especially focusing on next generations in order to stop the intergenerational transmission of the condition of poverty. However, the need to improve the capacities of adults through transferring skills to engage them in productive labour activities is also a complementary element to reinforce the impact of the programme. In order to

⁶ For more information in this regard please refer to: Escobar and de la Rocha (2003); Rawlings and Rubio (2003); Skoufias and Parker (2000a, 2000b), Parker (2003); Scott (2001); Bautista (2004); Cortés (2004)

support this claim and to consider the implications of incentives discussed in the literature, the reception of OPORTUNIDADES benefits must be evaluated to see whether they produce a behavioural change in labour enrolment in income generating activities.

This section will deal with the methodological basis of the analysis and establish the criteria of how the variables used here were constructed. An additional aim of this section is to point out the limitations of the results and inferences that can be drawn from this analysis, given the kind of data that was available for its development.

Using Skoufias and Parker's (2000a) research as reference and guidance it will be assessed if the same results still hold, now that OPORTUNIDADES has been expanded in urban areas. Nonetheless, the data and methodology used here diverts from Skoufias and Parker's (2000) since the resources they had access to, were far more detailed and tailored than the ones deployed here. In the case of this analysis, working activities will be the dependent variable, affected by receiving or not benefits from the programme and by living either in a rural or urban setting which will be, by definition, the independent variables. It will also be needed to observe some descriptive characteristics of the observations to understand its composition, and to select relevant control variables, in order to have better information about the specific impact of the programme on the household time allocation for work.

For the purpose of this research, labour activities will be defined as paid work or activities that generate an income for the household (labour market employment, farm working, and self-employment). Restricting the study to the participation in the formal labour market would undermine our understanding of the phenomena because there are many diverse ways in which poor people use their time in a productive manner in search for a livelihood.

Since incentives cannot be observed and measured directly, a quantitative proxy that could provide the required insight about the labour tendencies of beneficiaries needed to be identified. For this purpose a measure of the hours worked per household was created. As panel data was not available, which could have allowed us to observe the changes in hours worked for beneficiaries, the results need to be compared to the population not receiving those benefits, as a control group.⁷ Given that it is not conceptually accurate to compare all households to those who receive the benefits of the programme because of the differences in socio-economic conditions, a homogenization criterion was used for this purpose and will be explained further in this section.

Having identified the variables of analysis, the hypothesis of the present research is to observe if there is a difference in the behavioural pattern of hours worked between beneficiaries and non-beneficiaries, which would imply that receiving a cash transfer has a substitution effect on the hours worked per household. Having tested for the assumptions for using an Ordinary Least Squares (OLS) regression,⁸ the theoretical model will be as follows:

$$Y = \beta_1 X_1 + \beta_2 X_2 + \sum_{j=1}^J X_j + \varepsilon$$

⁷ The control group used in this analysis was not selected randomly, but through a selection criterion. This could impose some methodological problems that would need to be considered. For further reference on experiments and quasi-experiments see Stock and Watson (2003: 373-425)

⁸ All the different models analyzed in this research were tested for OLS assumptions. The linearity assumption of OLS is relaxed because the model contains binary variables that do not show a linear pattern. As it can be appreciated in the graphs displayed in Annex 2, none of them showed a tendency of heteroscedasticity and the mean value of the residuals is close to zero. It can also be observed that the residuals also showed a normal distribution pattern. Cross-validity of the model is good because the adjusted R² is almost the same as the R² (Field, 2000: 146). The Durbin-Watson test results show that the assumption of the independent errors is tenable (*Ibid*: 146). It is worth noting that the residuals distributions show a more corrected pattern for selected than unselected cases, providing a good statistical test of the case selection criteria that would be explained later.

Where Y measures the weekly average hours worked by a person of working age inside the household; X_1 is a dummy variable which indicates whether the household receives benefits from the programme OPORTUNIDADES; X_2 is a rural or urban community, where 1 represents rural and 0 urban areas; and X_j represents the control variables that will be used and explained further in the analysis.

While this research will be using a different source of information and a different and simpler methodology than the one used by Skoufias and Parker (2000), we could compare the tendencies in the results drawn from this research and the ones reported by them. Although the exact results cannot be compared, the differences in tendencies could shed some light over the issue of working patterns of beneficiaries and can be thought as a test of reliability of their previous findings.

Criteria for the Construction of Variables

The data used in this analysis come from the National Income and Expenditure Survey of 2004 (ENIGH) carried out by the National Institute of Statistics, Geography, and Informatics (INEGI). The ENIGH is the economic census used to measure poverty in Mexico and it is carried out every two years, with the 2004 survey being the most current one. For the purposes of this research this was the appropriate and relevant source because, since 2002, this survey also includes indicators about some governmental social programmes such as OPORTUNIDADES. The 2004 survey contains a sample of 22,595 households, of which 13.95% of the sample households receive benefits from OPORTUNIDADES, which when multiplied by the weighing factor equals to 13.61% of the total households (Table 1 and 2, Annex 1). It is important to acknowledge that all the results presented in this research will be weighted by

the inflation factor,⁹ as provided by the suppliers of the data set, in order to be able to make more precise inferences about the population in Mexico.

Since some of the variables in the survey are reported on a household basis and other reported as individual information, all the variables had to be translated into the same unit of analysis. In order to do that, some of the information had to be aggregated as a household average or just focusing on the information about a particular individual inside the household, most commonly the head of the household.

The dependent variable was constructed as an average of the weekly hours worked per household. However, since a regular average of hours worked by all members of the household would not be appropriate and would yield an inaccurate measure, it was more theoretically consistent to take the average of only those members that are old enough to engage in working activities. This average could have been constructed counting the number of people per household that reported to be working at the time of the survey, but this would not provide any information about the potential workers inside the household, such as housewives. It should be noted that the decision to work or not is both a personal and a household decision, however, since the unit of analysis of this research is the household, the inferences made will only be made using household information.

Although INEGI gives labour information about 12-15 years olds, they were excluded from the analysis because one of the programme's aims is to give incentives for children and adolescents (5-15) to continue their education. For this age group, reducing their participation

⁹ Each household is identified as a representation of similar households. "If the means are different by sector, we know that the un-weighted sample mean is a biased and inconsistent estimator of the population mean, and that consistent estimator can be constructed by weighting the individual observations by inflation factors, or equivalently by computing the means for each sector, and weighting them by the fraction of the population in each." (Deaton 1997: 67). The inflation factors in this data are already provided by INEGI.

in working activities is seen as a positive impact of the programme and, as stated earlier, has been reported by previous evaluations. Including this age group in the analysis would generate distortions on the results about the substitution effect in adults that is being evaluated here.

It should be recognized that this measure will not give direct information about working incentives, but will shed some light on the current working patterns followed by different families. We will be looking at the outcome of a decision driven by incentives, not of the incentives themselves. So, in a sense, some inferences about incentives could be made, but should be treated with caution when transferring them to the decision-making process, as will be stated further on.

The other independent variable used in this research is the identification of rural and urban areas. There is still a debate over the definition of what constitutes an urban or a rural area. The official classification of an urban setting is defined by the following official criteria:

- Settlement established in more than 100 square kilometres meters;
- More than 2,500 inhabitants;
- Municipal Administrative Units (*Cabeceras Municipales*) that do not fill these two requirements. (Adapted from Villalvazo, Corona and García 2002)

Although this definition is more comprehensive, for the purposes of this research, and for most statistical purposes, the criteria used herein is simpler, but compatible with the one used by the SEDESOL and the INEGI. The differentiation basically depends solely on the number of inhabitants of the particular community in question, considering rural communities of populations below 15,000 inhabitants. It is thought that the number of inhabitants is related to the economic activity and development of the area.

In order to control for some of the effect on weekly hours worked, some basic socio-demographic variables were used as instrumental variables, such as the sex, age and level of education of the head of the household, household size and exclusion index, all of which will be defined and explained throughout this section. As stated previously, all the information had to be aggregated or translated in household terms. It is assumed that the socio-demographic information of the head of the household, although not being as accurate as individual information, provide important characteristics of households for the analysis to control the effects of the independent variables.

Sex of the head of the household is a binary variable which assigns 1 for women, 0 for men. The level of education of the household head is measured as the highest level in formal education that the head of the household has achieved and ranges from 0 to 9; each increment in number denotes the termination of the previous education level, being these, preschool, primary school, secondary school, secondary school with technical specialization, high school, high school with technical specialization, teaching training specialization, and graduate and postgraduate studies. The social exclusion index is measured in a scale of 1 to 5, being 5 the greatest exclusion rate.

The social exclusion index is constructed by the National Population Council (CONAPO) and is a summary measure that identifies the municipalities by the intensity of their populations' deprivation (CONAPO 2001: 34). It accounts four structural dimensions of deprivation: level of education; housing characteristics; monetary income; and dispersion of the population (*Ibid*: 11). For the purpose of this research, this index allows controlling for regional differences in development of the population studied. The index ranges from 1 to 5,

with 1 being a low level of marginalization and 5 a highly marginalized municipality.¹⁰ This index will be fundamental as a control variable, because it allows accounting for some geographic conditions of the communities where the observation household are settled.

Now that the methodology behind the theoretical model and the variable measures were explained, the analysis will proceed to report the findings. Understanding how the different variables under study are measured provides the background for the interpretation of the models.

MODELS AND RESULTS

This section will analyse the construction of the model and its criteria in the shifting effects of including additional variables to describe and understand the impact that being a beneficiary of OPORTUNIDADES have on the weekly average hours worked per working age member of the household. For this purpose, the results will be analysed as a more general pattern that could provide a further insight on the implications of the findings.

It must be noted that there are a number of factors affecting the individual and household decision of hours to be worked which are not directly considered in the analysis—such as the economic situation of the region, and those affecting the opportunities of work in the community where people live—which could cause some problems of omitted variable bias of the estimators. Nevertheless, the social exclusion index, even though it is a composite measure, includes these factors into the analysis. Aside from this composite index, all the

¹⁰ The social exclusion index was recoded in order to fit the model and give some meaningful information in the OLS regressions. CONAPO assigns codes according to alphabetical order, and not to the intensity of the marginalization.

information that the instrumental variables provide is almost free of manipulation, and thus contains very little error of estimation, which proves useful to this analysis and could yield more accurate controls to the impact estimation on the variability on the weekly average hours worked by working age members of the household.

Due to the kind of data available to carry out this research, an experiment with control and treatment groups could not be performed. Thus, in order to develop the present analysis and standardize as much as possible the population to be compared, there was a need to homogenize some characteristics, which could allow controlling other differences of the population, aside from benefit recipients and their settlement area.

The criteria used to homogenize the population to be analysed had the aim of identifying a single variable as a threshold under which the units of analysis would be somewhat more comparable. For this purpose the same net per capita income calculated by SEDESOL to measure poverty was used.¹¹ The construction of this income is built upon the indexed aggregation of the monetary and non-monetary income per household. To identify the per capita income threshold to be used to homogenize the observations of analysis, the maximum net per capita income of a beneficiary household was calculated and used as the limit upon where the observations were incorporated into the analysis. This criterion allowed incorporating all OPORTUNIDADES recipient households of the survey into the analysis.

Nonetheless, this threshold was significantly high for a person receiving OPORTUNIDADES (22,519 pesos per month, which is roughly equivalent to 2,090 USD), and would also include in the analysis the households that receive the benefit as an *error of*

¹¹ Using the STATA do-file distributed by the SEDESOL for 2004 poverty measurement and merged into the data set created for this research's purposes. As reported earlier, both data come from the ENIGH 2004.

inclusion (Cornia and Stewart, 1995) commonly present in targeted programmes. As an alternative, taking the mean of the net per capita income would leave out of the analysis a considerable number of beneficiaries, which would not allow observing their behaviour as a whole, and distorting the purpose of the present study.

In order to consider in the analysis the possibility for *error of inclusion* (Cornia and Stewart, 1995) and also have the highest number of beneficiaries included, we used the mean of the total monthly monetary income of the household, obtaining a threshold of 8,182.72 pesos (approximately 760 USD). Using this threshold would leave out of the analysis 217,197 households who receive OPORTUNIDADES, which represent the 6.2% of the total beneficiary households, and thus will reveal more moderate results of the findings (ENIGH 2004). It is important to point out that the results of the regressions using the two explained criteria showed the same tendencies in all the estimators, although the differences on the amount of impact over the dependent variable changed. For the stated reasons, the models described here respond to the more moderate homogenization criteria using the monthly monetary income as the selection variable.

The analysis will now proceed to report the results of the constructed models, as well as the interpretation and explanation of some of the main findings. The findings can be summarized in the following table, but will be explained throughout the section. The complete results of the regressions are reported in Annex 1.

Summary Table
(Tables 3 through 6, Annex 1)
Summary of Models' Coefficients of the impact of independent
and control variables on the weekly average hours worked
per working age members of the household

Week average hours worked	Model 1	Model 2	Model 3	Model 4
Beneficiary	-2.419104**	-1.70374**	-1.56007**	-1.68623**
Rural/Urban	1.140602**	2.069851**	1.888706**	1.954653**
Sex head hh		-2.02158**	-1.86708**	-1.87117**
Age head hh		-0.13187**	-0.12786**	-0.12767**
Education head hh		-1.35597**	-0.55651**	-0.55522**
Household size		0.08209	0.140832*	0.140158*
Exclusion index		0.690532**	0.684613**	0.683475**
Study and work			-5.14435**	-5.1431**
Urban beneficiary				0.606932
_cons	47.43605**	50.21881**	50.08428**	50.06081**

** $\alpha = 99\%$; * $\alpha = 95\%$

Source: ENIGH 2004

As a first attempt to explore the impact of being a beneficiary or living in a rural or urban community, *Model 1* shows a negative difference between beneficiaries and non-beneficiaries of 2.42 in the week average of hours worked per working age member of the household. On the other hand, it also finds that, on average, people living in rural areas work 1.14 hours more per week than urban people. Still, this information needed to be tested by including other variables into the analysis to observe if the findings on *Model 1* still hold through when other theoretically significant impacts come into play. It will also help us observe if the outcomes of those control variables are consistent with what was expected and provide a proof of the sustainability of the theoretical model.

Model 2 shows that by including the control variables outlined in the previous section, there is no change in the impact of the programme on the dependent variable. Although the coefficient for beneficiaries decreases from -2.42 to -1.70 week average hours worked, it is still statistically significant at an α level of 99%, and keeps its negative tendency. The mean value of weekly average hours worked is 47.05 (Figure 3, Annex 1); which for beneficiaries

drop to 45.74; and increases to 47.26 for non-beneficiaries (ENIGH 2004). As showed in Table 7 displayed in Annex 1, the distributions of number of hours worked between beneficiaries and non-beneficiaries are quite similar. Nonetheless beneficiaries have higher percentages on the lower tail of the distribution; and non-beneficiaries take the lead in the higher end of the spectrum—56 hours worked or more.

Furthermore, from households that received less than the previously defined income threshold, 8.27% reported not a single member engaged in a productive activity, 90% reported between 1 to 4 persons occupied and 1.74% reported having more than 5 persons occupied in the household (Table 8, Annex 1). On the other hand, from these same households analyzed, 11.24% reported no member of the household engaged in working activities; 88% reported between 1 and 4 persons working; and less than 1% reported 5 or more people working. Having a considerable difference in these two outcomes could outline some important potential estimation bias in the dependent variable weekly average hours worked, since they do not include other kinds of non-labour activities, as the first one does. But as can be seen the differentials are not great, and thus it can be said that this particular estimation bias would not severely undermine the findings of this research.

As it can be observed from *Model 2* in the summary table, *caeteris paribus*, a household with a female head works 2.02 less hours than one with a male head. This is consistent with what was expected, since households with female heads generally have had a higher burden to bear in terms of livelihood strategies, reducing the possible hours available to work. For households that receive less than 8,182.72 pesos as monthly monetary income, 78.9% of those with female head do not live with their partners, compared to only 10.35% of those with male head of household. (Table 9, Annex 1) Furthermore, the mean monetary income of a household with a female head is 19.1% less than the one received by a household

with a male head (ENIGH, 2004). These figures show a very strong differential, but it should be noted that sometimes, households with male heads not necessarily have more than one income, since the man supports the housewife.

Age of the head of the household does show to be statistically significant, and functions as an un-manipulated control variable showing that, holding all other variables constant, as a person becomes older, tend to work a little less than younger persons. Nevertheless, it needs to be acknowledged that productivity of each of those hours worked depending on age is not controlled in these models. So, for the purposes of this research it is assumed that age and productivity are the same for each working age member of the household.

The variable household size does not prove to be statistically significant, but will be kept in the analysis as a control variable, since we are considering the average of hours worked per working age person inside the household, and thus the variable is theoretically significant. The average household size is 4.03, ranging from 1 to 21 persons; the mean household size for beneficiaries is 5.1 persons; and 3.9 for non-beneficiaries (ENIGH 2004).

The Social Exclusion index shows a very interesting phenomenon and is consistent with the idea that people living in poverty tend to work more for a livelihood. This coefficient can be interpreted, *caeteris paribus*, as people that live in more marginalized areas tend to work more hours. But this effect is very interesting when it is contrasted with the resulting coefficient of being a beneficiary, which, as stated previously, implies that people receiving OPORTUNIDADES appear, on average, to work fewer hours per week. In order to understand this difference in tendencies it would be important to point out the fact that, although OPORTUNIDADES is a programme to fight poverty, since it requires people to comply with

certain conditions—like school attendance and visits to the clinics—the programme requires that the community where possible beneficiaries live have access to public infrastructure that allows them to comply with the conditions. This infrastructure is not necessarily localized in the most marginalized communities, so these two variables are not intimately related. However, this does not mean that the Mexican government does not attend to those people in more marginalized communities, but only that they are not attended by this particular programme.¹²

In order to further test the impact of OPORTUNIDADES, it was required to include an additional control variable that related adults' decision to study and the hours worked, since studying inherently reduces the total hours available for income generating activities. For this purpose, an interaction variable was built to count the number of adults that study and work at the same time inside the household. The purpose of including this variable was to test if this intuitively strong effect on hours worked created a statistical significance shift of being a beneficiary of the programme. In order to be consistent with the study and reduce the effects of younger people in the analysis, this interaction variable was calculated only for adults—people between 16 and 64 years old. As *Model 4* shows, although the study and work variable observes a stronger negative impact on weekly average hours worked—which is intuitively consistent—being a beneficiary of the programme still keeps the same tendency and similar coefficient, meaning that the inclusion of this control variable does not take away its effect over the independent variable.

If we aggregate the negative effect per year on hours worked per beneficiary compared to non-beneficiaries—considering an average household integrated by 4 people and

¹² For further reference on the diversity of social programmes implemented by the Government, please refer to www.sedesol.gob.mx

an average of 6.7 hours worked per day—we could be saying that a beneficiary household is working 324.8 hours less per year than a non-beneficiary, which would imply approximately 48 days of work of one person per household per year.

As a final attempt to test for the consistency of the impact coefficient of being a beneficiary of OPORTUNIDADES, another interaction was constructed to test the difference in impact from urban and rural beneficiaries, showed in *Model 5*. Taking away the effect of urban beneficiaries, which proves not to be statistically significant, the variable beneficiary still holds its tendency and its impact is even increased from the previous model. This finding demonstrates that there is not sufficient evidence to state that there is a difference in the weekly average hours worked between urban and rural beneficiaries.

This finding goes against the intuition developed in the research question, which expected a greater effect on hours worked for urban beneficiaries. Since the implementation of OPORTUNIDADES in urban areas is in its first stages, it does not yet show enough evidence to have an impact on hours worked, and would need to be tested again in a few years time. This same effect was shown in the case for rural beneficiaries in the first stages of the implementation of the programme (Skoufias and Parker 2000), but now it has been seen that there is some possible substitution effect when being a beneficiary, which is statistically and theoretically significant, that could be showing some possible disincentives of beneficiaries engaging in the labour market.

In terms of the overall model, by looking at the t-statistics displayed in the model results on Annex 1, we can observe that the variable beneficiary has less explanatory power of the weekly average hours worked than most of the control variables. Nevertheless, this

research is not aiming to state that being a beneficiary will determine—neither to account for all the explanation of the variation in—the amount of hours worked.

Having acknowledged this, the previously analyzed models have, in fact, found that beneficiaries work fewer hours per working age person than non-beneficiaries. Although, there are some considerations that were not taken into account in the models, we have found that there could be a *substitution effect* that could disincentive beneficiaries to engage in labour activities, and thus could create a benefit dependency of some sort. Needless to say, these results would need to be taken with caution, because some of the mentioned factors that were left out from the analysis could prove to be fundamental in the determination of the outcome.

The next section will outline some important trends and debates in the task of measuring government performance, and some of the critiques and limits to what results of those measures can achieve in the policy decision-making process.

LIMITATIONS OF THE FINDINGS: A PUBLIC POLICY PERSPECTIVE

Although the findings of this research can be illustrative and observe a significant difference on the number of hours worked between beneficiaries and non-beneficiaries, there are some limits on their explanatory reach. These limits not just need to be acknowledged, but seriously considered when transferring them into the decision-making process. The purpose of this section is to restrict the scope upon where the findings can be interpreted. This section will also summarize the main findings of this research.

With the information reported so far, it cannot be stated that the difference between beneficiaries and non-beneficiaries' working patterns is a direct effect of cash transfers, or that it is intimately related to the operation of the programme. However, it does raise further questions about the possibility of creating a benefit dependency that could generate a "poverty trap, such that people have little inducement to increase their gross income" (Atkinson, 1995: 59) while receiving the programme aid.

Even if OPORTUNIDADES is focused on building up next generations' capabilities to help them overcome poverty, not regarding strategies to acquire an independent sustainable livelihood could hamper the possibility for next generations to utilize those capacities, having to support this generation's adults when they become elders. An additional consideration is the possibility that continuing to supporting families that could otherwise use their time for productive purposes may restrict the access to the programme to new eligible families.

The evaluation of governmental programmes has been further encouraged in recent years, not just driven by the efforts to find more efficient and effective governmental interventions, but also by the improvement of information access mechanisms developed by more accountable and transparent democratic regimes. Nevertheless, evaluation and measurement of government performance has not been without critiques, and it has been acknowledged that measurement is not the only element to be considered in the decision-making process (Pollit, 2000).

Social phenomena—and in particular some complex issues like poverty and the changes in the structure of incentives—are very difficult to measure, thus needing to find proxies that could help organizing our thoughts and understanding of what is around us. It has been recognized that it is important to link evaluation to policy decision-making, but should

also be considered the limitations of the usefulness of this link. As C. Pollitt (2000), “[f]or the more socially controversial or complex programmes, any feasible set of indicators will probably never be large and diverse enough to capture all the aspects which all the stakeholders deem to be important to them. Still less can they be safely aggregated to form some single index of how “good” things are...” (Pollitt 2000: 125)

Statistics provide empirical evidence about the functioning of governmental programmes under the conditions and assumptions established in each of the evaluations. However, decision-making cannot rely solely on those tools—in fact, they rarely do—and has to take into account other factors and the political context upon where the changes were to be made. Though, evaluations have proved to be enormously useful to inform and support the decision-making process. For example, as Deaton (1997) acknowledges when explaining modelling social welfare functions from income and expenditure survey data:

“It is important not to misinterpret a social welfare function in its context. In particular, it should definitely not be thought as the objective function of a government or policy agency. There are few if any countries for which the maximization of [a social welfare function] subject to constraints would provide an adequate description of the political economy of decision-making. Instead, it should be seen as a statistical “aggregator” that turns a distribution into a single number that provides an overall judgement on that distribution and that forces us to think coherently about welfare and its distribution. Whatever our view of the policymaking process it is always useful to think about policy in terms of its effects on efficiency and on equity, and [the social welfare function] should be thought as a tool for organizing our thoughts in a coherent way.” (Deaton 1997: 134-135)

Measurement is a tool for decision-making, not a policy driver. What should drive policy is a broader picture that considers those measurements, as well the contexts and the alternatives available. Government performance measurements do not make the decision-making process “automatic” (Pollitt 2000: 129). We still need public servants and politicians

who prioritize the outcomes to be pursued, and the course of action to be taken. As Pollitt mentioned the saying “to govern is to choose” (*Ibid*: 127).

Since evaluation has some inherent problems of measurement, when trying to assess the effectiveness of governmental programmes and their particular components, they should be carried out in different periods of time and with different methodologies to prove their reliability. However, as stated previously, these evaluations have to be carried out thinking about receptors of policy interventions as actors and not as patients (Sen, 1995), which will react to changes in their situation. Evaluation needs to focus on understanding the behavioural change of receptors of government programmes in positive and negative terms in order to assess their efficiency, given that the final aim of poverty alleviation programmes is to allow people to reduce their vulnerability, not just to shocks and stresses in their livelihoods, but also from government interventions.

Having said this, and linking it to the findings of this research, we could not state with certainty that the results can be linked directly to the functioning of the programme, and have recognized that other things would need to be considered. Furthermore, in terms of decision-making, the results of this research prove only to be a tool which indicates that there should be further analysis of the results previously illustrated, and would need to be contrasted with the good indicators of the programme on other aspects of its operation, as the ones reported in previous evaluations of the programme.¹³

As aggregation of information is sometimes necessary in order to find indicators, and as some assumptions needed to be made, we should be cautious when studies’ findings are

¹³ Refer to http://www.oportunidades.gob.mx/e_oportunidades/evaluacion_impacto/index.html, for an in-depth evaluation of different aspects of the impact and operation of the programme. It should be noted that these evaluations are in Spanish.

translated into policy decisions. In this respect, OPORTUNIDADES has issued some qualitative evaluations that corroborate the positive impacts in health, education, nutrition, and operation of the programme (CIESAS: 2002, 2003, and 2004). It would be pertinent to the corresponding for the findings of this research, if they were to be translated into a policy decision.

The next lines will explore some possible reasons to explain the finding that beneficiaries work, on average, fewer hours than non-beneficiaries. For this, and in order to further understand the phenomena of working incentives of social programmes receptors, it would be needed to observe and assess peoples' time allocation, as Skoufias and Parker do in their analysis (2000).

From the present model it was found that there is a difference between beneficiaries and non-beneficiaries on hours worked. However, since there are some assumptions made for the development of the analysis we can not be assured that this disparity is only related to the operation of OPORTUNIDADES. Even more, if we assumed that the impact was related to the programme, in order to understand the implications of the disparity, further studies would need to be carried out. Some of these considerations were not included in this analysis because of lack of data, such as the time allocation module used by Skoufias and Parker (2000), neither panel data that could allow making inferences about the changes in working patterns. It should be recognized that this study is a snapshot of the current conditions and patterns of the population.

For the purpose of their analysis Skoufias and Parker (2000) built up a *time use* module, carried out in a Certification and surveillance survey carried out in May 1999 (*Ibid*: 9), which allowed them to observe the allocation of time to work activities and leisure. This

research did not have access to such information, thus cannot make inferences about the allocation of time, and how beneficiaries are substituting those less hours worked than non-beneficiaries. Because of this, it cannot be stated, for example, if the findings are related to the mere fulfilment of OPORTUNIDADES' own conditional demands to receive the cash transfer, which would imply that the marginal returns of an additional unit of income are less than the marginal return of the cash transfer.

Another effect that would be worth looking at is the possibility of a multiplicative communitarian effect of those fewer hours worked by beneficiaries. It is plausible that if beneficiaries are in fact reducing the hours worked as a result of the programme, the labour demand inside the community is being satisfied by non-beneficiaries. Thus, the impact of the programme would be improving the opportunities not just for beneficiaries, but also for non-beneficiaries.

What can be said from the present research is that, although there are limits to the developed analysis, there is evidence that there are differences in working patterns between beneficiaries and non-beneficiaries. It has also been found that the social exclusion index showing the opposite trend on working patterns, corroborates that people living in more marginalized communities work more. By looking at this result, if poor people tend to work more, then this raises the question of why beneficiaries of OPORTUNIDADES work less hours. These are the kind of questions that cannot be answered by this research, but that open up plenty of room for analysing the nature of that difference in labour participation in order to fully understand why this is happening and to test if those results can be linked directly to the functioning of the programme.

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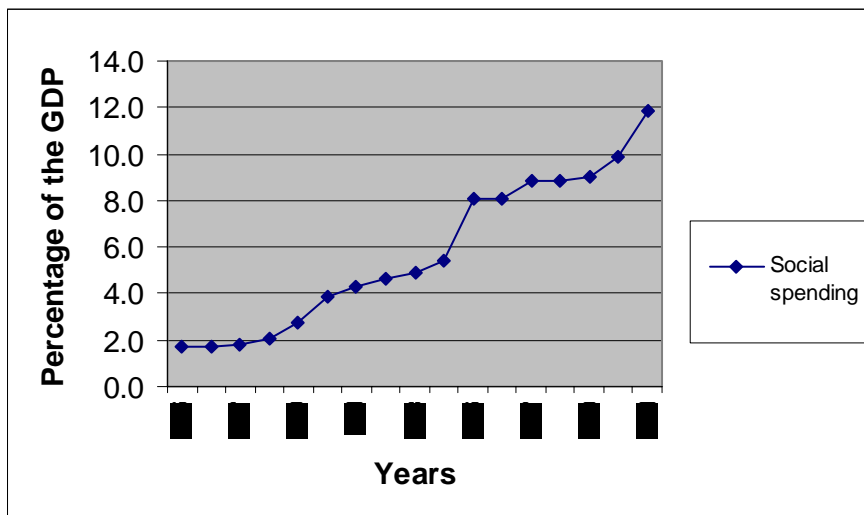
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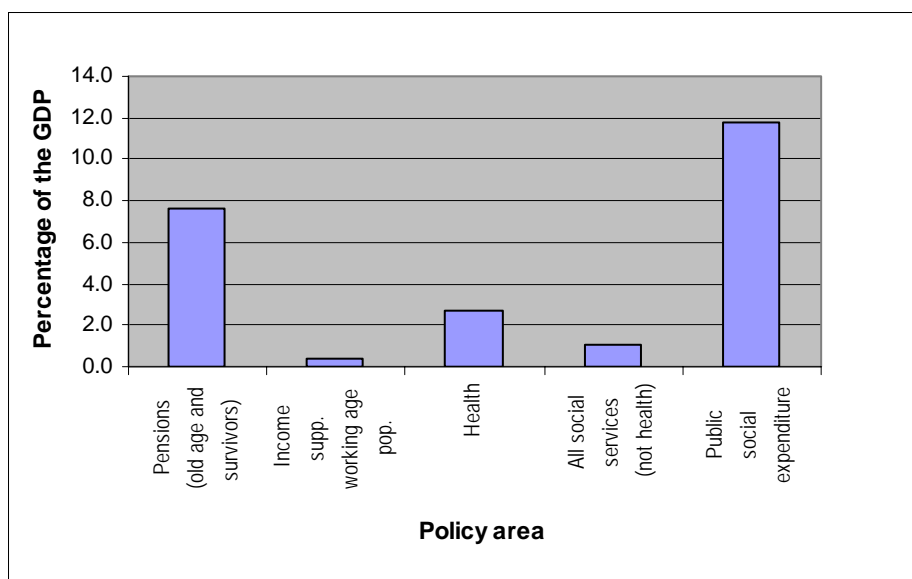
ANNEX 1: FIGURES AND TABLES

Figure 1
Trend on Mexico's Social Spending, 1985-2001



Source: Data obtained in Statlink: <http://Dx.doi.org/10.1787/138143773102>, in OECD, Society at glance (2005: 61).

Figure 2
Mexico's Disaggregated social spending by broad policy area: 2001



Source: Data obtained in Statlink: <http://Dx.doi.org/10.1787/138143773102>, in OECD, Society at glance (2005: 61).

Table 1**Number of Total Household
Beneficiaries of Oportunidades**

Total Households	Total	%
Non beneficiaries	22,328,266	86.39
Beneficiaries	3516815	13.61
Total	25,845,081	100.00

Source: ENIGH 2004

**Number of Sample Household
Beneficiaries of Oportunidades**

Sample Households	Total	%
Non beneficiaries	19,442	86.05
Beneficiaries	3153	13.95
Total	22,595	100.00

Table 2**Distribution of Total
Beneficiaries by Type of
Settlement**

Beneficiaries	Total	%
Urban	519,544	14.77
Rural	2997271	85.23
Total	3,516,815	100.00

Source: ENIGH 2004

Table 3**Effect of Oportunidades on weekly average hours worked per working age member of
the household**

Source	SS	df	MS
Model	10424.8	2	5212.398
Residual	2951379	13351	221.0605
Total	2961804	13353	221.8081

Number of obs	13354
F(2, 13351)	23.58
Prob > F	0
R-squared	0.0035
Adj R-squared	0.0034
Root MSE	14.868

Avge Hours Worked	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]
Beneficiary	-2.4191**	0.36184	-6.69	0	-3.128361 -1.70985
Rural/Urban	1.140602**	0.281532	4.05	0	0.588759 1.692446
_cons	47.43605**	0.172718	274.64	0	47.0975 47.7746

** $\alpha > 99\%$ * $\alpha > 95\%$

Source: ENIGH 2004

Table 4
Effect of Oportunidades with control variables on weekly average hours worked per working age member of the household

Source	SS	df	MS	Number of obs	13323
Model	86448.7	7	12349.81	F(7, 13315)	57.33
Residual	2868392	13315	215.4256	Prob > F	0
Total	2954840	13322	221.8016	R-squared	0.0293
				Adj R-squared	0.0287
				Root MSE	14.677

Avge Hours Worked	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]
Sex head hh	-2.02158**	0.319277	-6.33	0	-2.647412 -1.39576
Age head hh	-0.13187**	0.009157	-14.4	0	-0.1498201 -0.11392
Education head hh	-1.35597**	0.184975	-7.33	0	-1.718545 -0.99339
Household size	0.08209	0.071072	1.16	0.248	-0.0572224 0.221401
Exclusion index	0.690532**	0.140607	4.91	0	0.4149224 0.966141
Rural/Urban	2.069851**	0.351837	5.88	0	1.380201 2.7595
Beneficiary	-1.70374**	0.387394	-4.4	0	-2.463087 -0.94439
_cons	50.21881**	0.851832	58.95	0	48.5491 51.88853

** $\alpha > 99\%$

* $\alpha > 95\%$

Source: ENIGH 2004

Table 5
Effect of Oportunidades with control variables 2 on weekly average hours worked per working age member of the household

Source	SS	df	MS	Number of obs	13323
Model	106645.7	8	13330.72	F(8, 13314)	62.31
Residual	2848195	13314	213.9248	Prob > F	0
Total	2954840	13322	221.8016	R-squared	0.0361
				Adj R-squared	0.0355
				Root MSE	14.626

Avge Hours Worked	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]
Sex head hh	-1.86708**	0.31856	-5.86	0	-2.491503 -1.24266
Age head hh	-0.12786**	0.009134	-14	0	-0.1457686 -0.10996
Education head hh	-0.55651**	0.201859	-2.76	0.006	-0.9521773 -0.16083
Household size	0.140832*	0.071082	1.98	0.048	0.0015009 0.280162
Exclusion index	0.684613**	0.140117	4.89	0	0.4099625 0.959263
Rural/Urban	1.888706**	0.351104	5.38	0	1.200492 2.576919
Beneficiary	-1.56007**	0.386325	-4.04	0	-2.317317 -0.80281
Study and work	-5.14435**	0.529441	-9.72	0	-6.182129 -4.10657
_cons	50.08428**	0.848972	58.99	0	48.42017 51.74838

** $\alpha > 99\%$

* $\alpha > 95\%$

Source: ENIGH 2004

Table 6
Effect of urban beneficiaries on weekly average hours worked per working age member of the household

Source	SS	df	MS	Number of obs	13323
Model	106747.4	9	11860.82	F(9, 13313)	55.44
Residual	2848093	13313	213.9332	Prob > F	0
Total	2954840	13322	221.8016	R-squared	0.0361
				Adj R-squared	0.0355
				Root MSE	14.626

Avge Hours Worked	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]
Sex head hh	-1.87117**	0.318621	-5.87	0	-2.495707 -1.24662
Age head hh	-0.12767**	0.009139	-13.97	0	-0.1455791 -0.10975
Education head hh	-0.55522**	0.201871	-2.75	0.006	-0.9509208 -0.15953
Household size	0.140158*	0.07109	1.97	0.049	0.0008113 0.279504
Exclusion index	0.683475**	0.14013	4.88	0	0.4088001 0.958149
Rural/Urban	1.954653**	0.363911	5.37	0	1.241336 2.667971
Beneficiary	-1.68623**	0.42749	-3.94	0	-2.524166 -0.84828
Study and work	-5.1431**	0.529454	-9.71	0	-6.180905 -4.10529
Urban beneficiary	0.606932	0.880444	0.69	0.491	-1.118864 2.332727
_cons	50.06081**	0.849671	58.92	0	48.39533 51.72629

** $\alpha > 99\%$

* $\alpha > 95\%$

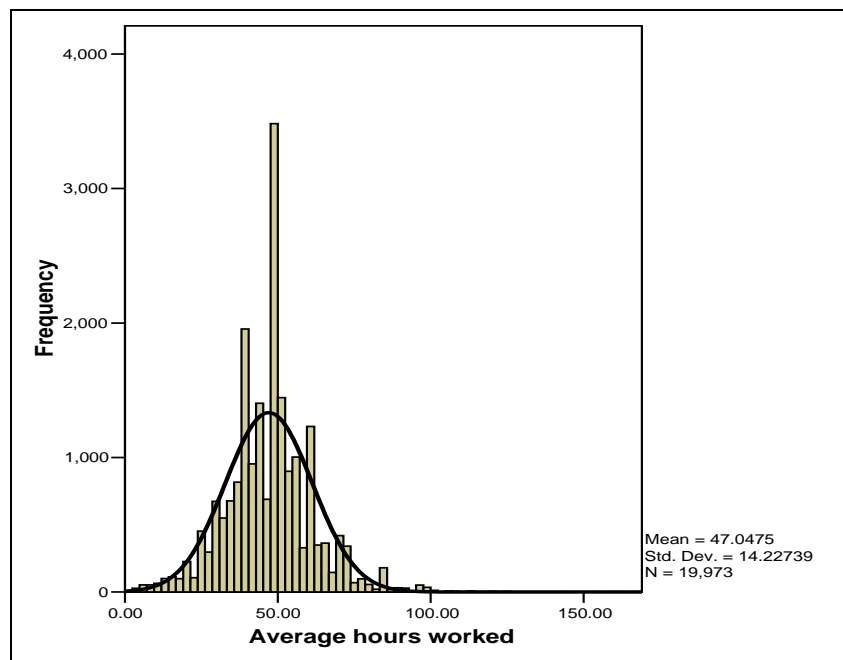
Source: ENIGH 2004

Table 7
Percentile Distribution of Weekly average hours worked per working age member of the household by Beneficiary/Non-beneficiary for Monetary income below 8,182.72 pesos

Range of Hours Worked	Non-beneficiary	%	Beneficiary	%	Total
0 hrs - 30hrs	1164352	7.64	337,726	10.24	1502078
30 hrs - 37 hrs	1313813	8.62	368,677	11.17	1682490
40 hrs - 45 hrs	396,001	2.60	116,908	3.54	512,909
45 hrs - 48 hrs	1901087	12.47	413,456	12.53	2314543
48 hrs	877,936	5.76	144,525	4.38	1022461
48 hrs - 51.5 hrs	3027472	19.86	647,902	19.64	3675374
51.5 hrs - 56 hrs	901,570	5.92	238,896	7.24	1140466
56 hrs - 64 hrs	1623691	10.65	321,426	9.74	1945117
64+	4035457	26.48	710,102	21.52	4745559
Total	15241379		3299618		18540997

Source: ENIGH 2004

Figure 3
Distribution of weekly average of hours worked per working age member of the household



Source: ENIGH 2004

Table 8
Distribution of the number of persons that reported having worked in the past week for households with monthly monetary income less than 8,182.72 pesos

No. Persons	Freq.	%	Cum %
0	2,084,469	11.24	11.24
1	9,272,139	50.01	61.25
2	5,170,911	27.89	89.14
3	1,438,656	7.76	96.9
4	436,402	2.35	99.25
5	112,654	0.61	99.86
6	15,462	0.08	99.94
7	8,928	0.05	99.99
8	1,376	0.01	100
Total	18540997	100	

Source: ENIGH 2004

Table 9

**Marital Status distribution by Household head sex for
households with monthly monetary income less than \$8,182.7**

Marital Status	Total male	%	Total women	%	Total
Not married couple	2442670	17.59	258,752	5.56	2701422
Separated	404,556	2.91	1174248	25.25	1578804
Divorced	75,367	0.54	238,072	5.12	313,439
Widow	517,347	3.72	1606484	34.55	2123831
Married	9855854	70.95	664,242	14.28	10520096
Single	594,824	4.28	708,581	15.24	1303405
Total	13890618		4650379		18540997

Source: ENIGH 2004

ANNEX 2

Descriptive Statistics^a

	Mean	Std. Deviation	N
Week average hours worked	46.9692	14.95236	13324
Beneficiary	.1965	.39736	13324
Rural/Urban	.3746	.48403	13324
Sex head hh	.2121	.40881	13324
Age head hh	43.6655	14.02028	13324
Education head hh	.0835	.73693	13324
Household size	4.2088	1.90361	13324
Social exclusion	3.8528	1.43483	13324
Study and work	.0598	.26581	13324
Urban beneficiary	.0302	.17106	13324

a. Selecting only cases for which Monetary income <= 8183.00

Variables Entered/Removed^{b,c}

Model	Variables Entered	Variables Removed	Method
1	Rural/Urban, Beneficiary ^a	.	Enter
2	Age head hh, Education head hh, Sex head hh, Household size, Social exclusion ^a	.	Enter
3	Study and work ^a	.	Enter
4	Urban beneficiary ^a	.	Enter

a. All requested variables entered.

b. Dependent Variable: Week average hours worked

c. Models are based only on cases for which Monetary income <= 8183.00

Correlations

		Week average hours worked	Beneficiary	Rural/Urban	Sex head hh	Age head hh	Education head hh	Household size	Social exclusion	Study and work	Urban beneficiary
Pearson Correlation	Week average hours worked	1.000	-.045	-.036	-.104	-.116	-.049	.025	.037	-.100	-.002
	Beneficiary	-.045	1.000	.482	-.062	.042	-.033	.301	-.560	.014	.357
	Rural/Urban	-.036	.482	1.000	-.106	.040	-.053	.175	-.705	-.034	-.137
	Sex head hh	-.104	-.062	-.106	1.000	.162	.046	-.161	.088	.064	.009
	Age head hh	-.116	.042	.040	.162	1.000	-.112	.031	-.036	.006	-.013
	Education head h	-.049	-.033	-.053	.046	-.112	1.000	-.069	.042	.413	.003
	Household size	.025	.301	.175	-.161	.031	-.069	1.000	-.226	.037	.105
	Social exclusion	.037	-.560	-.705	.088	-.036	.042	-.226	1.000	.016	-.001
	Study and work	-.100	.014	-.034	.064	.006	.413	.037	.016	1.000	.026
	Urban beneficiary	-.002	.357	-.137	.009	-.013	.003	.105	-.001	.026	1.000
Sig. (1-tailed)	Week average hours worked	.	.000	.000	.000	.000	.000	.002	.000	.000	.413
	Beneficiary	.000	.	.000	.000	.000	.000	.000	.000	.056	.000
	Rural/Urban	.000	.000	.	.000	.000	.000	.000	.000	.000	.000
	Sex head hh	.000	.000	.000	.	.000	.000	.000	.000	.000	.140
	Age head hh	.000	.000	.000	.000	.	.000	.000	.000	.251	.069
	Education head h	.000	.000	.000	.000	.000	.	.000	.000	.000	.354
	Household size	.002	.000	.000	.000	.000	.000	.	.000	.000	.000
	Social exclusion	.000	.000	.000	.000	.000	.000	.000	.	.029	.446
	Study and work	.000	.056	.000	.000	.251	.000	.000	.029	.	.001
	Urban beneficiary	.413	.000	.000	.140	.069	.354	.000	.446	.001	.
N	Week average hours worked	13324	13324	13324	13324	13324	13324	13324	13324	13324	13324
	Beneficiary	13324	13324	13324	13324	13324	13324	13324	13324	13324	13324
	Rural/Urban	13324	13324	13324	13324	13324	13324	13324	13324	13324	13324
	Sex head hh	13324	13324	13324	13324	13324	13324	13324	13324	13324	13324
	Age head hh	13324	13324	13324	13324	13324	13324	13324	13324	13324	13324
	Education head h	13324	13324	13324	13324	13324	13324	13324	13324	13324	13324
	Household size	13324	13324	13324	13324	13324	13324	13324	13324	13324	13324
	Social exclusion	13324	13324	13324	13324	13324	13324	13324	13324	13324	13324
	Study and work	13324	13324	13324	13324	13324	13324	13324	13324	13324	13324
	Urban beneficiary	13324	13324	13324	13324	13324	13324	13324	13324	13324	13324

a. Selecting only cases for which Monetary income <= 8183.00

Model Summary^f

Model	R		R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson Statistic	
	Monetary income <= 8183.00 (Selected)	Monetary income > 8183.00 (Unselected)				R Square Change	F Change	df1	df2	Sig. F Change	Monetary income <= 8183.00 (Selected)	Monetary income > 8183.00 (Unselected)
1	.047 ^a		.002	.002	14.93665	.002	15.019	2	13321	.000		
2	.167 ^b		.028	.027	14.74668	.026	70.083	5	13316	.000		
3	.185 ^c		.034	.034	14.69957	.006	86.501	1	13315	.000		
4	.185 ^d	.138	.034	.034	14.69974	.000	.682	1	13314	.409	1.860	2.003

a. Predictors: (Constant), Rural/Urban, Beneficiary

b. Predictors: (Constant), Rural/Urban, Beneficiary, Age head hh, Education head hh, Sex head hh, Household size, Social exclusion

c. Predictors: (Constant), Rural/Urban, Beneficiary, Age head hh, Education head hh, Sex head hh, Household size, Social exclusion, Study and work

d. Predictors: (Constant), Rural/Urban, Beneficiary, Age head hh, Education head hh, Sex head hh, Household size, Social exclusion, Study and work, Urt

e. Unless noted otherwise, statistics are based only on cases for which Monetary income <= 8183.00.

f. Dependent Variable: Week average hours worked

ANOVA^{e,f}

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6701.639	2	3350.819	15.019	.000 ^a
	Residual	2971963	13321	223.104		
	Total	2978664	13323			
2	Regression	82904.248	7	11843.464	54.462	.000 ^b
	Residual	2895760	13316	217.465		
	Total	2978664	13323			
3	Regression	101595.2	8	12699.401	58.772	.000 ^c
	Residual	2877069	13315	216.077		
	Total	2978664	13323			
4	Regression	101742.5	9	11304.724	52.317	.000 ^d
	Residual	2876922	13314	216.082		
	Total	2978664	13323			

a. Predictors: (Constant), Rural/Urban, Beneficiary

b. Predictors: (Constant), Rural/Urban, Beneficiary, Age head hh, Education head hh, Sex head hh, Household size, Social exclusion

c. Predictors: (Constant), Rural/Urban, Beneficiary, Age head hh, Education head hh, Sex head hh, Household size, Social exclusion, Study and work

d. Predictors: (Constant), Rural/Urban, Beneficiary, Age head hh, Education head hh, Sex head hh, Household size, Social exclusion, Study and work, Urban beneficiary

e. Dependent Variable: Week average hours worked

f. Selecting only cases for which Monetary income <= 8183.00

Coefficients^{a,b}

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	47.446	.165		288.241	.000		
	Beneficiary	-1.346	.372	-.036	-3.621	.000	.768	1.303
	Rural/Urban	-.567	.305	-.018	-1.859	.063	.768	1.303
2	(Constant)	51.738	.825		62.716	.000		
	Beneficiary	-1.440	.402	-.038	-3.583	.000	.640	1.562
	Rural/Urban	-.627	.377	-.020	-1.663	.096	.490	2.042
	Sex head hh	-3.119	.323	-.085	-9.655	.000	.936	1.069
	Age head hh	-.114	.009	-.107	-12.229	.000	.955	1.048
	Education head hh	-1.184	.175	-.058	-6.755	.000	.979	1.022
	Household size	.222	.071	.028	3.109	.002	.881	1.135
	Social exclusion	.144	.134	.014	1.071	.284	.439	2.279
3	(Constant)	51.548	.823		62.667	.000		
	Beneficiary	-1.361	.401	-.036	-3.396	.001	.640	1.563
	Rural/Urban	-.702	.376	-.023	-1.866	.062	.489	2.043
	Sex head hh	-2.970	.322	-.081	-9.211	.000	.933	1.071
	Age head hh	-.110	.009	-.103	-11.819	.000	.952	1.050
	Education head hh	-.439	.192	-.022	-2.283	.022	.809	1.236
	Household size	.271	.071	.034	3.790	.000	.877	1.141
	Social exclusion	.150	.134	.014	1.116	.265	.439	2.280
4	Study and work	-4.922	.529	-.087	-9.301	.000	.820	1.220
	(Constant)	51.540	.823		62.651	.000		
	Beneficiary	-1.533	.452	-.041	-3.393	.001	.503	1.987
	Rural/Urban	-.609	.393	-.020	-1.551	.121	.449	2.227
	Sex head hh	-2.972	.322	-.081	-9.216	.000	.933	1.071
	Age head hh	-.110	.009	-.103	-11.795	.000	.952	1.051
	Education head hh	-.438	.192	-.022	-2.279	.023	.809	1.236
	Household size	.270	.071	.034	3.776	.000	.876	1.141
	Social exclusion	.145	.134	.014	1.080	.280	.438	2.284
	Study and work	-4.925	.529	-.088	-9.306	.000	.820	1.220
	Urban beneficiary	.711	.861	.008	.826	.409	.747	1.339

a. Dependent Variable: Week average hours worked

b. Selecting only cases for which Monetary income <= 8183.00

Excluded Variables^d

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	Sex head hh	-.110 ^a	-12.663	.000	-.109	.989	1.012	.762
	Age head hh	-.114 ^a	-13.281	.000	-.114	.998	1.002	.767
	Education head hh	-.052 ^a	-5.957	.000	-.052	.997	1.003	.766
	Household size	.042 ^a	4.682	.000	.041	.908	1.101	.719
	Social exclusion	.009 ^a	.700	.484	.006	.441	2.270	.441
	Study and work	-.101 ^a	-11.690	.000	-.101	.998	1.002	.766
	Urban beneficiary	.011 ^a	1.114	.265	.010	.749	1.335	.586
2	Study and work	-.087 ^b	-9.301	.000	-.080	.820	1.220	.439
	Urban beneficiary	.008 ^b	.760	.447	.007	.747	1.339	.438
3	Urban beneficiary	.008 ^c	.826	.409	.007	.747	1.339	.438

a. Predictors in the Model: (Constant), Rural/Urban, Beneficiary

b. Predictors in the Model: (Constant), Rural/Urban, Beneficiary, Age head hh, Education head hh, Sex head hh, Household size, Social exclusion

c. Predictors in the Model: (Constant), Rural/Urban, Beneficiary, Age head hh, Education head hh, Sex head hh, Household size, Social exclusion, Study and work

d. Dependent Variable: Week average hours worked

Residuals Statistics^{a,b}

	Monetary income <= 8183.00 (Selected)					Monetary income > 8183.00 (Unselected)				
	Minimum	Maximum	Mean	Std. Deviation	N	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	27.3302	52.0724	46.9692	2.76344	13324	25.8963	52.7570	46.9451	2.92804	6617
Residual	-48.56880	118.38564	.00000	14.69478	13324	-43.85269	103.47085	.24996	12.58462	6617
Std. Predicted Value	-7.107	1.847	.000	1.000	13324	-7.626	2.094	-.009	1.060	6617
Std. Residual	-3.304	8.054	.000	1.000	13324	-2.983	7.039	.017	.856	6617

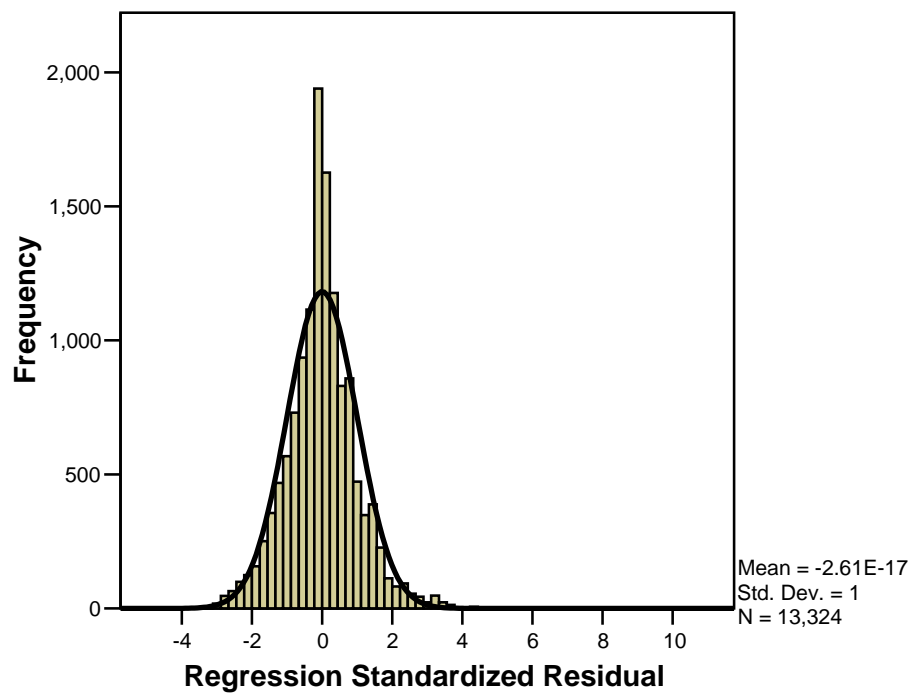
a. Dependent Variable: Week average hours worked

b. Pooled Cases

Figures

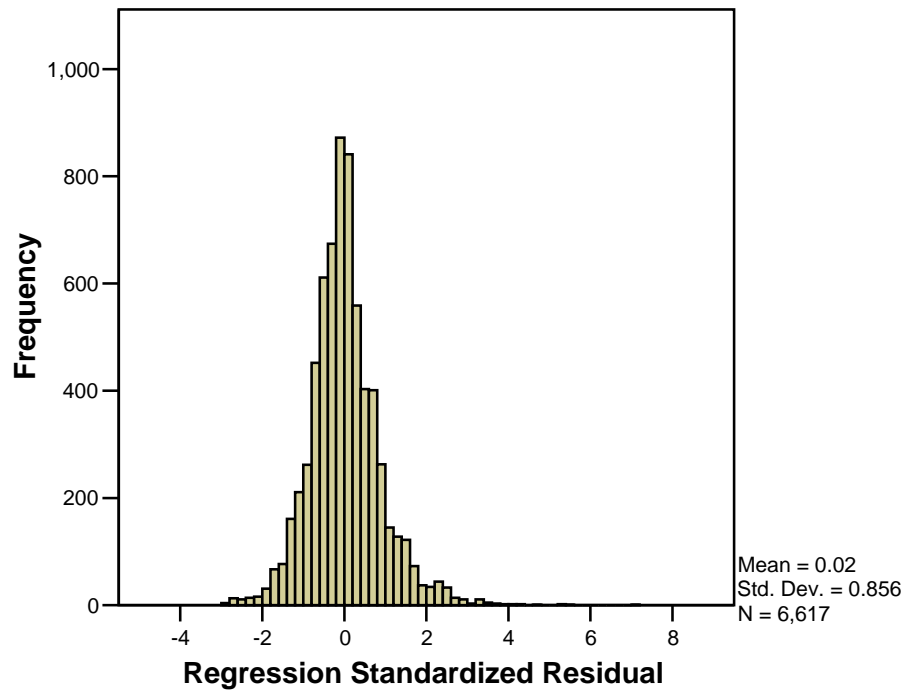
Histogram of Selected Cases

Dependent Variable: Week average hours worked



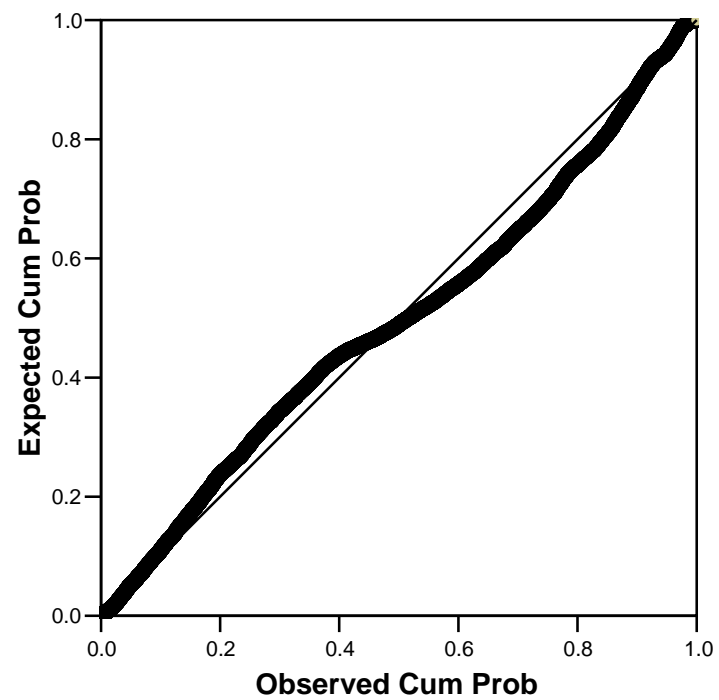
Histogram of Unselected Cases

Dependent Variable: Week average hours worked



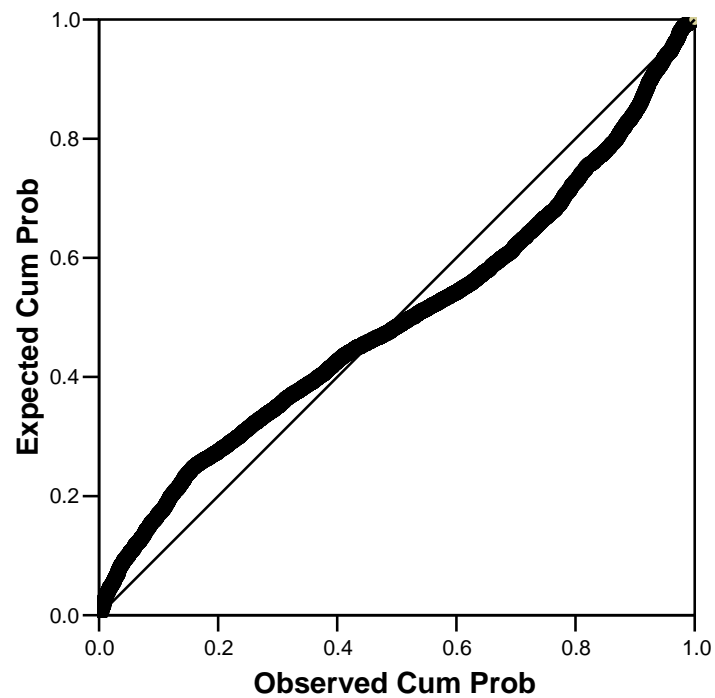
Normal P-P Plot of Standardized Residual for Selected Cases

Dependent Variable: Week average hours worked



Normal P-P Plot of Standardized Residual for Unselected Cases

Dependent Variable: Week average hours worked



Scatterplot

Dependent Variable: Week average hours worked

