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Female Participation in the Informal Sector in Brazil in 1996 and in 2005

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**Female Participation in the
Informal Sector in Brazil in 1996 and in 2005**

A Thesis

Submitted to the Graduate Faculty of the
University of New Orleans
in partial fulfillment of the
requirements for the degree of

Master of Arts
in
Sociology

By

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BA, Universidade Federal Fluminense, Brazil, 1995

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Abstract

Social and economic changes that happened in Brazil in the 1990s have changed the organization of female employment in the country. In this study, I examine the participation of women in the informal sector in Brazil in 1996 and 2005. Using micro-level data from the Brazilian Monthly Employment Survey, I find Brazilian female workers became older, more educated, and that female informal employment increased over the period studied. Although self-employment was reduced, an increase in wage-employment in informal manufacturing was noticed, which indicates growth in subcontracting. Higher share of female headed households, lower income and higher poverty levels were predominantly found among informal sector female workers. Large share of female informal work in disadvantaged conditions indicates the existence of a dual labor market in Brazil. Globalization and the adoption of neoliberal practices in Brazil seem to have exacerbated the underprivileged condition of working women in the country.

Keywords: informal sector; female work; Brazil;

Introduction

Informality rates among workers have been on the rise in Brazil in the last decades, and many women have entered the Brazilian labor market since the 1990s, often in informal positions. These two subjects have been well documented in the literature (Abramo, 2004; Barbosa-Filho, 2005; Botelho and Ponczek, 2006; Bruschini and Lombardi, 2000; Costa, 2005; Goncalvez, Perez and Wnajman, 2004; Lavinias, 1996, 1997 and 2002; Leone, 1999; Neri, 2002; Ulyssea, 2005; Wanjman, 1998). As part of the effort to better understand the link between the growth of the informal sector and the growth of female participation in the labor market, and to assess differences between women in the formal sector and women in the informal sector in Brazil, this study examines personal and work related characteristics of Brazilian women in the urban labor market in the years 1996 and 2005¹.

By comparing specific characteristics of women who hold jobs in the urban informal sector of the economy to those of women employed in the urban formal sector, this study examines whether there are significant differences between the two groups. Furthermore, it attempts to investigate the existence of a link between informal employment and poverty among Brazilian women. The endeavor is not to unveil specificities of the various groups of female workers, but to get a more general view of the situation of women in the Brazilian labor market at two specific points in time, and reflect on whether there have been any changes from one year to the other.

It is essential to begin with a definition of what is regarded as the informal sector. Even though definitions vary according to specific areas of study and research purposes, informal economy, informal sector and informal work usually refer to undocumented workers and

¹ Employment in rural areas and employment in agriculture are not considered in this study.

unregistered activities. It possesses a heterogeneous nature, ranging from home-based, petty commodity production, trade, and provision of services by poor women to highly-paid work provided by professional consultants. It can be of licit or illicit nature, from selling goods from a small shop to selling drugs on the streets. These types of jobs exist in every economic industry, encompass all occupations and share one common characteristic: it is not regulated, that is, there is no work contract between employer and employees. As a consequence, informal work is typically more precarious than formal work and offers virtually no protection to workers.

It is very difficult to identify who the informal workers are and measure the size of the informal sector. In the Brazilian case, this task is facilitated because a set of laws² regulate labor in the country. Legislation defines that a worker must have his/her work booklet³ signed by the employer, and by doing that it guarantees that standard formal labor contract is in place. Formal workers, as opposed to informal workers, are entitled to several benefits: wages as high as the minimum wage, yearly 30-day paid vacations, maternity leaves of 120 days, a maximum work week of 44 hours, minimum overtime premiums of fifty percent, and fines for unjustified dismissal, as well as guaranteed social security contributions. Informal workers contracts are implied and they are not protected or guarantee any legal rights. Activities that occur within informality are not registered anywhere and are not taxed by government. The informal employee or self-employed individual does not emit a receipt or report receiving income for doing the work. The firm or individual who hires the informal worker does not keep any documentation about the worker. It is like the exchange never took place and that worker never

² Contractual laboral relations in Brazil are governed by a decree known as Consolidation of Labor Laws (C.L.T.) promulgated in 1943.

³ This work booklet (*CTPS - Carteira de Trabalho e Previdencia Social*) is an identification card issued by the Ministry of Labor, in which the employment and related issues, such as raises in salary, vacations, and changes in occupation must be annotated.

existed. The Brazilian government goes after the big companies that evade huge amounts of money and the small informal economy remains free of any type of taxation.

As important as developing a clear definition of informality is to understand why women end up having informal jobs. Having an informal job might mean more flexibility and independence for the worker. Individuals may choose informal work as a way to escape responding to management, avoiding stressful situations, and to have more autonomy at work. Own-account work might mean more income for many workers. Home-based work arrangements are often sought by women who need to care for children and the house. The formal sector's inability to create enough employment opportunities coupled with the large numbers of women entering the Brazilian labor market are also forces that drive more women to the informal sector.

Brazil in the early 1990s

The 1990s was a decade of great social and economic changes in Brazil. The previous decade was characterized by high inflation, protected economy, government subsidized national production, large state owned enterprises, high public sector employment, and great migrations from poor countryside to developed metropolitan areas. The 1990s began with the first democratic presidential election by popular vote after 30 years. In order were liberalization of the Brazilian market and attempts to control inflation at any price⁴ that culminated with a presidential impeachment in 1992. The mark of this decade was the adoption of neoliberal practices. Privatizations in large scale led to a reduction in government participation in the economy and the shrinkage of employment in the public sector. The rise in imports of all types led to lower levels of national production. Inflation was successfully controlled in 1994 with the

⁴ It included a freezing of bank assets with no previous notice. The government specified the amount of money available to withdrawal, and it was the same for all individuals that had bank accounts.

adoption of the “*Plano Real*”⁵ but at the expense of a decrease in levels of production and a rise in unemployment rate. The economy became stable but also stagnated. Firms closed to business or merged with others to reduce costs and increase productivity. The share of manufacturing industry in the economy became smaller while the share of the service sector grew.

Unemployment rate was high and the levels of informality increased in the decade.

The social and economic changes that happened in Brazil were largely a response to global change. The opening of the economy was essential to gain access to global technologies and expertise to compete globally, but it had negative effects for many, particularly for unskilled and women workers. In Brazil, the restructuring of companies through technological modernization, subcontracting, redesign of processes, downsizings and other measures together with a period of economic stagnation and deregulation led to the elimination of more than one million jobs in the industrial sector alone (Costa, 2005). Globalization together with economic instability and institutional disorganization of the previous decade supported the development and growth of the informal sector in the country.

The increase in the level of employment in the trade and service sectors during the 1990s did not make up for the lost manufacturing jobs. Overall, the decade was marked by a continuous deterioration of the world of work in the country, with continuous loss of jobs and income, and a worsening of working conditions. Estimates say that the Brazilian informal sector increased 10% at the end of the 1990s over the previous decade, and that unregistered employees and self-employed workers accounted for approximately half of the Brazilian labor force in 2002 (Ulyseia, 2005). The consistent increase in the size of the informal sector makes cyclical explanations unlikely (Barbosa-Filho, 2005).

⁵ It was proposed by the economy minister who later became President: Fernando Cardoso de Mello.

Statement of the Problem

A substantial growth in female participation in the labor force occurred alongside the growth of the informal sector in Brazil in the 1990s. Researchers have attributed the increase in women's participation in the labor force to the need to complement familial income due to declining male wages, growth in size of the service industry, and to the increasing participation of women in social life in general (Goncalves, Perez and Wajnman, 2004). Family obligations do not allow many women to easily meet the terms of formal employment, and informal employment provides opportunities that are not available in formal employment. The participation of women in the informal sector brings some long-term adverse effects on their well-being as informal employment is usually related to lower earnings, no benefits and precarious work conditions (Barrientos, 2004). As informality among females grows, poverty and inequality, which are associated with the informal sector, also grow. Personal and professional improvements become remote objectives for these women since their economic position highly determines their access to educational, political and organizational resources (Ward, 1988).

Purpose of the Study

The purpose of this study is to examine the situation of women in the Brazilian Labor market in 1996 and 2005 with regard to their sector of work, and investigate whether there has been any change over that period. It seeks to verify the link between working in the informal sector and being poor for Brazilian female workers. The study presents a literature review on the informal sector and of the Brazilian labor market in the 1990s with focus on women's participation in the labor force. It presents a quantitative analysis of data from the Brazilian Monthly Employment Surveys collected in March 1996 and in March 2005. The study's nature is highly descriptive.

Research Questions

The main questions this study attempts to answer are how big is the presence of women in the Brazilian informal sector? Are women in the informal sector significantly different from women in the formal sector with regard to age and education? Is the female informal sector's segmentation of occupations similar to that of the formal sector? Do women in the informal sector work longer hours and earn less income than their formal counterparts? Are women who labor in the informal sector poorer than women who labor in the formal sector? Finally, has the situation of women in the informal sector changed in any way from 1996 to 2005? These questions were designed to investigate how women in the formal sector differ from women in the informal sector, to investigate if the second are more disadvantaged than the first, and to assess whether the situation of women in the Brazilian labor market has improved or worsened over this time period.

Significance of the Study

Many studies have been done on the informal sector and on gender inequalities but very few focus only on women and investigate the different characteristics they have with regards to work. This study concentrates exclusively on female work and attempts to investigate its particularities. The results are important not only for the matter of better understanding some aspects of the formal-informal segmentation for women in the Brazilian labor market but also for planning and defining policies for gender development and poverty reduction.

Delimitation of the Study

This study specifically examines Brazilian women aged 15 to 65 years that declared they had paid work in the period surveyed. The primary purpose is to identify differences between women that work formally and informally in the Brazilian labor market with regards to demographic and work related characteristics and to investigate how these characteristics have

changed from 1996 to 2005. It does not cover illegal activities performed in the informal sector, such as those related to crime and prostitution. It excludes women that are small business owners and focuses instead on formally and informally employed and own account female workers. It concentrates on the dynamics of women's work and does not investigate how female work is different from male work in Brazil.

Review of Literature

Informal employment constitutes a large proportion of the labor market in developing countries such as Brazil. Most large cities in these countries are filled with street vendors and unregulated small businesses abound in the outskirts. From barbers and shoe repairers to small produce shops and automobile body shops, there is a huge variety of informal businesses from which workers earn their main income. The informal economy is very diverse and heterogeneous with regard to location of work, industry and status of employment, and is diverse across these segments, by social group and gender (Chen, 2003; Chen, Vanek and Heintz, 2006). Informal workers, however, share a common characteristic: they lack formal recognition and protection.

A lot of attention has been given to the phenomenon of the informal sector. The literature on this subject is vast, but it is also somewhat disconnected and not well organized. Plus, it is mostly focused on economic aspects of informality. While the intention here is not to give an extensive account of the development and dynamics of the informal economy, in the section that follows I focus on key aspects with regards to definitions and perspectives about the informal economy, the links between informal work and poverty, and presence of women in the informal economy. Then I present an overview of the Brazilian informal labor market.

Definition

The term 'informal sector' was first coined by Keith Hart (1973) in his study of informal income opportunities and employment in Africa in the early 1970s. Since then, although the informal sector has been widely studied, researchers have used various definitions according to their research interests. There has not yet emerged a consensus about the definition of informal sector, the role it has in the economy and the effects it has on workers.

The literature indicates the existence of multiple definitions for informal sector and informal economy. The International Labor Organization indicates that informal work comprises non agricultural activities that produce goods and services with the main objective of generating work and income, with five employees at most, urban, and that are not for self-consume (ILO, 2004a). Recently, the term informal economy has been used mostly as it represents a more comprehensive concept, with a focus on the nature of employment rather than on characteristics and size of enterprises. Portes (1989) define it as a process of income-generation occurring outside of regulatory institutions and mechanisms of the formal-market system. Informal economy comprises employment without secure contracts, worker benefits, and social protection, both inside and outside informal enterprises, and includes self-employment. It also includes employers and unpaid family workers in informal enterprises. The main characteristics of informal work are low age, unstable employment, non-compliance with labor legislation, the absence of worker's organizations such as unions, small units of production and home-based rather than factory based work (Tuominen, 1994). The lack of a consensus on the definition of what is informal, however, makes it difficult to grasp informality entirely. Sachs (1993) reflects that the reason might be just that the simple dichotomy "formal/informal" does adequately capture the complexity of the economy.

A key issue is to identify what defines activity as informal. In some cases it is solely the legal nature of work that characterizes it as formal or informal. Activities that occur outside the official legal framework are considered informal. These activities may be of a legal nature in the sense that they do not constitute crime, but they are conducted without following the fiscal and labor laws that regulate the economy. Ease of entry, low resource base, family ownership, labor intensive, adapted technology and informal processes for acquiring skills are their major

characteristics (Garcia-Bolivar, 2006). Barbosa-Filho (2005) notes, however, that besides the legal framework, whether or not the worker individually contributes to the social security system must be taken into consideration before deeming a worker formally or informally employed⁶. Yet, he acknowledges that the percentage of workers with informal ties to their employers that contribute to the social security system is only 5%, and he points out that these two measures are highly correlated.

Workers can be fully or partially informal (Garcia Bolivar, 2006; Chen, 2003). Fully informal self-employed and employees perform activities that are unregistered, do not pay taxes and do not collect any benefits they would be entitled to if formally employed. They are ‘invisible’ for government and society in those terms. Partially informal self-employed and employees are those who individually pay social security taxes or who are subcontracted by formal enterprises. Yet, all these workers are considered to be in the informal economy and are subjected to its boundaries.

Theoretical Approach

Informality is a growing phenomenon worldwide and it accounts for an important share of employment. Three major approaches explain the existence of the informal sector and how it is connected to the formal economy: dualist, structural, and legalist.

Structuralism is one of the major theoretical approaches to explain informality and associate its expansion to economic crisis and restructuring. It claims that it is the nature of capitalist development that explains the existence and expansion of the informal economy. By engaging in informal relationships with workers, enterprises can reduce costs and increase profit

⁶ Although a self-employed individual does not have a signed work booklet, if she contributes to the social security system, she is somehow complying with governmental regulations and is entitled to a few benefits.

and power⁷ (Portes, 1989). It considers informal and formal economies connected and interdependent. The informal economy is in constant relationship with the formal economy and they produce and trade goods and services with each other. Goods and services provided by informal workers lower the costs of consumption for formal workers and the costs of production and distribution for formal enterprises.

This approach has most recently linked globalization to the phenomenal growth of informal economies worldwide. Carr and Chen (2001) observe that global competition tends to deteriorate employment relations by encouraging formal enterprises to engage in subcontracting and hiring at low wages and few benefits in order to remain competitive in the market. Large structural forces such as privatization, trade liberalization and flexible production, regarded as ‘neoliberal’ strategies to achieve higher levels of economic development, affect the way the labor market is organized. Ward (1988) argues that women have become the new favored workers in the export processing or light labor intensive industries in the global assembly line, and that this shift towards the desirability of women workers is a remarkable turnabout compared with hiring practices during the period of import substitution (p.25). In order to remain competitive, firms search for cheaper labor provided by women.

Privatizations reduce employment in the public formal sector and increase employment in the informal sector⁸. The liberalization of markets and consequent higher levels of competition make survival more difficult for domestic firms, and lead to more unemployment. Work

⁷ In Brazil, this is the case of many information technology workers. Instead of being formally employed by enterprises, they subcontract their work. This way the firms can adjust the number of members and labor costs according to the projects they have in hand. Although these individuals work for only one enterprise at a time for the duration of one specific project, and are usually relocated to other existing projects when they are done with the first, they are legally considered micro-entrepreneurs. While that may give them more flexibility and some sense of status, they depend on the firm to get work.

⁸ Public work is usually middle class employment. These individuals, unable to find good work in a shrinking formal sector, chose to open a small business, usually informal.

normally performed in the formal sector is shifted to the informal sector through subcontracting of production and temporary contracts, usually offering lower salaries. Workers who engage in informal employment lack access to credit lines, to investment in technology, and have low competitiveness.

The adoption of neoliberal practices is often associated with deterioration of working conditions. Deregulation and flexibility bring about insecurity and job shortage and undermine social and working conditions. “The meaning of informality has changed markedly in the neoliberal era. In the past it was the sector where those excluded from the modern economy found employment; in the present it has become a place for those escaping the degradation of formerly secure jobs” (Centeno and Portes, 2006, p.40).

Even though structuralism argues that the informal sector has an important function as it employs and provides income to a large segment of the population that would otherwise be deprived of any means of subsistence, the costs are quite high. They often include huge tax evasion, low productivity due to lack of resources to invest in training and technology and environmental degradation. The informal economy provides a weak basis for economic development and is a source of social inequality.

The dual-economy theory of the informal sector argues that there is a relationship between economic organization and labor market structure. It refers to an economy in which rich, capital-intensive modern sectors coexist with comparatively poor, traditional, labor intensive sectors. The economy is divided in primary and secondary labor markets or sectors, organized in terms of the social and economic organization of production. Primary work is formal, while secondary work is informal.

Tolbert, Horan and Beck (1980) write that “researchers in the dual labor market literature focus on characteristics such as wages, working conditions, chances for advancement, and employment stability as delimiters of sectoral distinctions” (p.1096). While the primary sector provides job ladders, on the job training, and differentiated wage structure, the secondary sector is characterized by low-paid jobs, low skills, instability, low opportunities for advancement and mobility. Workers who engage in secondary sector activities tend to be economically vulnerable and have limited opportunity for entry into and advancement in the formal sector. Additionally, firms in the primary labor market do not depend so much on external market to fill most of their positions. Jobs at middle and upper levels are filled from within the firm (Hirsch, 1980). Workers in the secondary labor market generally have lower attachment to work force participation and enjoy more frequent spells of unemployment (Saint-Paul, 1996).

According to the dual labor market theory, the secondary sector absorbs surplus labor from the formal economy, basically due to slow economic growth, and functions as a source of income for the poor. Wages in the formal sector labor market are higher than in the informal labor market because the former has bigger and more stable enterprises that have more money to distribute to workers (Kalleberg and Berg, 1987). Education and training have almost no significant influence on wages or work stability in the secondary labor market. Increasing education and training of secondary workers is not likely to improve their income in secondary jobs (Gordon, 1974, p.94)

Gordon (1974) provides a good description of the main characteristics of jobs in the primary and secondary sectors. He says that secondary labor market jobs usually require little or no mental or physical dexterity, pay low wages, have poor working conditions and confer minimal status, and appear to be isolated and not connected to job ladders of any sort. No matter

how long an employee works at these jobs or how clearly they demonstrate their skills, there seem to be no channels through which they can rise above the original job. Instability of the work force was not only accepted but desired by employers. Secondary sector jobs are characterized by high turnover rates, no loyalty, and a tendency to leave the job for better pay in another job. Employers have no interest in reducing turnover rates. The poor are confined to the secondary labor market. On the other hand, jobs in the primary sector offer high wages, good working conditions, job stability and security, and chances for advancement. He concludes that workers are generally banned from primary jobs not because they lack certain skills, but because they tend to work unreliably and intermittently (pp.44-46).

According to Peck (1996) “whatever the measure chosen, the same social groups tend to suffer the brunt of labor market disadvantage, (which) tends to be distributed in accordance with the ascribed rather than achieved characteristics of workers, varying more closely with ethnicity, gender and age, for example, than with education, training and skill.” (p.30). Gender is a key factor to explain how work is structured in the dual economy. Coverdill (1988) writes that women are overrepresented in peripheral jobs and underrepresented in the core market, and that the disproportionate allocation of women to peripheral jobs is the key idea in the dual economy perspective’s account of sex difference in earnings.

Women, as well as young people and older workers, are considered to have a weaker attachment to the labor market. Expectation of irregular work behavior among supposedly marginal groups affects hiring decisions and in turn reinforces these behaviors (Peck, 1996). Women’s involvement with childcare and housework limits their flexibility to find suitable jobs, and employers in the secondary sector use it in its own advantage. Women are often socially constructed as unreliable workers due to their alternative roles outside the labor market

Hirsch (1980) suggests that dual labor market theory can also be used to describe an overall view of the class structure among women. In all classes there would be a split between working in the formal and informal sectors. The lower class would include those working in low skilled manufacturing and service jobs in the secondary sector followed by working class in the primary sector a little above. Middle class would be some informal entrepreneurs (self employed) and employees in the primary sector. Upper class would be professionals and managers in the primary sector.

The third theoretical approach to explain the existence of the informal sector and how it is connected to the formal economy is the legalist theory. The legalist approach focuses on small businesses that decide to operate informally to avoid the costs and efforts necessary to formally operate, and claim that they prefer to stay informal due to strict regulations imposed on formal businesses by governments (De Soto, 1989). Also, lack of financial credit may lead them to be informal. Maloney (2003) has added to this theory by focusing on individual self-employed workers rather than on small firms. It assumes that it is individuals who choose to operate illegally so as to avoid taxation, regulations and other costs related to formal operations. It would not be the economy or the institutions that drive individuals to informal employment but their own desire and choice. Workers balance out the costs and benefits of being formally versus informally employed and trade some sense of predictability and security for flexibility and lower operating costs.

While the informal economy theories focus on different aspects and causes for the existence of informality, and a unified definition of informal sector or informal economy does not yet exist, it is widely known that it has increased in size over the last decades. And even though it is in the developing world that it has mostly advanced, the ‘informalization’

phenomenon is now a global issue. Even in countries where the volume of informal economy is not considered large compared to total gross national product, it has been steadily growing (Bejakovic, 2004).

When used together, both the structural and dual-economy theories seem to help in the investigation of the overall growth in informality that has happened more recently. Macro aspects such as unemployment, limited opportunities in the formal economy and institutional pressure suggest it is the very nature of capitalism to increase gains through exploitation of labor and expand the informal economy.

Researchers have been debating the issue of whether workers choose to be informal due to personal preferences or are forced to work informally due to the inability to get formal jobs. As Ulysea (2005) writes, it seems that both can be true depending on the group of informal workers studied. In this sense, the legalist theory seems to have a point in addressing the dynamics of informal self-employed and small-business entrepreneurs. The theory's emphasis on micro aspects such as individual motivations and on how individuals interpret the macro setting and make their choices must be placed within a more structured approach⁹.

Informality, Inequality and Poverty

There has been an unending discussion about the interaction of informality and poverty. It is usually argued that individuals working in the informal economy are more likely to be poor because they earn less income, have lower quality jobs, get no fringe benefits, and are not protected by social security. Although these workers are able to get jobs and escape unemployment, holding a position in the informal economy often means having precarious

⁹ Individual motivations are not investigated in this study.

working conditions and lower salaries, things that are likely to lead to impoverishment (Beneria, 2004).

On the other hand, Ulyssea's (2005) review of the literature on the informal economy shows that there are claims that the informal economy is so heterogeneous that the link between poverty¹⁰ and informality should not be seen as so straight forward. The informal economy is as stratified as the formal economy and there are good and bad jobs within informality, with stratification of occupation and income according to race, gender, experience and education levels. McKeever's (1998), for instance, found that the informal economy in South Africa was a sort of replication of the formal economy in terms of stratification, even though jobs found in the informal sector were generally more precarious and dangerous.

Nonetheless, even though some informal workers may make higher earnings than formal workers, most studies agree that average wages in the formal sector are higher than average wages in the informal sector for most countries in Latin America. Garcia-Bolivar (2006) states that informal jobs may be a means for securing income but the income level is not adequate for many informal workers to live with dignity. Some studies show that wage differentials are statistically significant even after controlling for personal and household characteristics (Freije, 2004; Funkhouser, 1996). While informal work might have positive aspects for some workers, such as flexibility of work hours, the costs are often high. Including unregistered employees, self-employed individuals as well as un-paid workers in the analysis, Neri (2002) finds that informality and poverty are highly correlated, with income per capita being negatively related to

¹⁰ Brazilian poverty indicators are grounded on a monetary approach. Income is the main criteria for classifying the individuals as poor. The most used definition of poverty in the country is related to the income level necessary to have an acceptable well being (Rocha, 2003), and not only minimum needs for food, but also for aspect such as housing and access to basic public services. An estimation of a poverty line is done according to regions and time period, and is a monetary representation of minimum expenditure necessary to escape poverty situations. Poor individuals are those whose income falls below the poverty thresholds.

informality. He argues that the Brazilian labor market is highly segmented and adds that 58% of the country's population that is below the indigent line lives in families headed by informal workers. Accordingly, Herran (2005) finds that the formal-informal labor segmentation in Brazil accounts for 12% of the difference in income among individual workers, and that Brazilian households headed by informal sector employees or self-employed individuals account for two thirds of all poor households. While informal employees are usually the least well paid among informal workers, self-employed and small-entrepreneurs usually do not have two different budgets for the family and the business (Sachs, 1993), and need "out-of-pocket" direct expenses to run their informal business (Chen, Vanek and Hientz, 2006).

For Freije (2004) there is a hierarchy of average earnings within informality: self-employed individuals usually have higher income than informal employees who, in turn, earn more than informal employees. Domestic workers are at the bottom of the income pyramid. Chen, Vanek and Heintz (2004) also classify informal workers hierarchically to picture the segmentation of the informal sector: located at the top slots of an "informal sector pyramid" are small entrepreneurs, right above own-account workers who sit over unpaid family workers. Next, on the three bottom slots are informal wage workers followed by industrial outworkers and home workers at the base. Botelho and Ponczek (2006) also confirm the existence of a wage gap between formal and informal workers in Brazil but observe that individual characteristics have different impacts on level of segmentation. For example, they find that the wage gap tends to be more pervasive among young workers and that females have lower gains than males when transferring from informal to formal sector.

Herran (2005) writes that the segmentation of occupations and jobs in the Brazilian labor market is highly correlated with education levels of the population. He observes that only those

with completed high school education can compete for the better jobs, while the vast majority of the population with primary education or less is likely to be stuck with informal jobs, mostly concentrated in areas such as construction, domestic or personal services. Ulyssea (2005), in his review of the Brazilian literature on the informal sector, finds that there is a consensus that informal workers have on average lower educational levels than their formal counterparts. He says that the formalization levels clearly increase with education. But, while education is the variable that most contributes to explaining the informal-formal wage gap (Perez-Sainz, 2000), there is also evidence that education returns in the informal sector are either insignificant or smaller than in the formal sector (Freije, 2004; Neri, 2002).

The quantity and quality of employment available to individuals has a bearing on determining not only income, but also other dimensions of poverty, such as access to health, education, and social inclusion (Chen, Vanek and Heintz, 2006). Thus, poverty should not be observed only as a consequence of the level of earnings of the workers. The average time over which the low earnings are sustained, how unstable they are, and the conditions under which they are achieved are strong determinants of poverty levels. (Chen, Vanek and Carr, 2004). In a study about informal-formal mobility in Brazilian metropolitan areas from 1984 to 1998, Neri (2002) found that informal workers had a greater probability of keeping their informal status than of getting a formal job, and that unemployed individuals had a slightly greater probability of getting an informal than a formal job. The probability of informal workers maintaining their status was 56% in 1984-85, 71% in 1990-91 and in 1998-1999, while the probability of moving to formal positions was 34%, 17% and 16% respectively. For the categories within informality, informal employees were more likely than self-employed to move to formal status. In addition to

that, Ulyssea (2005) writes that turnover rates are much higher within informality, and that informal workers rotate jobs on average three to four times more often than formal workers.

If informal workers have small probability of moving to the formal labor market, and being informal implies having lower income, social protection, and lower security levels, informal workers are more likely to be poor. This assumption leads to another question: does poverty lead to more informality? In a study about the Romanian informal economy, Kim (2005) shows that participation in the informal labor market is driven by low income levels and poverty levels are higher for families in which the head of household holds an informal employment status. The low average earnings associated with informal sector jobs, combined with the higher fertility rates among the poor, leads to greater financial constraints and difficulty to pay for better education for the children of the poor families. The matter of intergenerational transmission of poverty has not been fully scrutinized, but it is fair to argue that, with lower educational attainment, individuals are more likely to engage in the labor market earlier in life. Being younger, less educated and without of specific skills, these individuals have a strong likelihood of ending up in some sort of informal activity (Hausmann and Szekely, 2001).

The attention that the informal economy has received in the last decade has not translated into empowerment for informal workers. Neri (2002) observes that there is an inverse relation between membership rates in organizations such as trade unions, professional and non-community associations and informality, which suggests a low level of informal sector organization and representation. And although informality might represent a problem for governments in the sense that it creates a huge evasion of taxes, informal workers have very small collective bargaining power and remain in the margins (Centeno and Portes, 2006).

Researchers have not yet come to an agreement about the relationship between poverty and informality, and point out that the use of a more integrated approach is necessary to disclose patterns and particularities of the informal labor market. Different groups of informal workers may possess different characteristics and behave in different ways. However, as for the probability of getting an informal job, women are the ones more likely to be informally employed.

Women and work

According to the International Labor Organization, the female participation rate in the Latin American labor force increased from 44% in 1993 to 49% in 2003, while for men it remained somewhat stable around 80% (ILO, 2004b). In Brazil, female participation in the labor market went from 33% 1981 to 47% in 2002, while men's participation dropped from 75% to 71% in the same period. Hoffman and Leone (2004) write that the rise in the economically active population in Brazil in the 1990s was generated by the increase in females' entrance in the labor market.

Freije (2004) discusses how higher educational attainment and falling household income due to economic crisis were key factors explaining the increase in female labor supply in the last decades, and adds that, since high productivity jobs are scarce, many women were able to find jobs in the informal sector. The term "feminization of the labor market", which refers to an increase in the participation of women in the labor force and the deterioration of working conditions in previously male jobs (Piras, 2004), has been used to describe the labor market changes that occurred in the last decades. The feminization of the labor force has intensified the reliance of women on informalized employment, with women being over-represented in low paid and non standard work positions (Beneria, 2004). The expansion of female labor force

participation has been significantly observed in the most precarious jobs; in part-time positions, and in those marked by informal relations, in all of which they earn less income than men (Antunes, 1999).

Home-work arrangements among women have been on the rise, as many are sought to fill positions that were previously performed in a firm or factory. Although home work arrangements do not provide direct control over the work done at home, firms can take advantage of the discipline imposed on women by their need to both remain at home to care for children and other domestic activities, and to earn whatever income they can (Beneria, 2003)¹¹

Among working women, informal employment is more prevalent than formal employment. It is also a larger source of employment for women than for men in the developing world even though there are numerically more working men than women (Chen, Vanek and Heintz, 2006). The informality rate in Brazil is higher for females than for males (Neri, 2002).

In the first half of the 1990s, women not only entered the workforce in massive numbers, but also worked more hours. The average hours of work have increased, particularly for the most educated group of female workers, although the less educated group was still the one that had the longest work weeks. As for age, there was a strong and regular increase in the percentage of older women entering the labor force. Very little change was in terms of observed occupations: female workers mostly got jobs in personal services, public administration, and health and education services (Melo, 1998). According to Lavinias (1997), women accounted for 81% of workers in public health and public education services in the first half of the 1990s. The service industry alone was responsible for 50% of women's jobs. Other than that, female labor was

¹¹ Home-work influences familial organization and women's identity. The home is usually perceived as women's territory, where they have some control over the activities they do. Women tend to base their definition of self on their simultaneous functions in different role sets, and the establishment of boundaries between work and family are crucial for the women's perceptions of themselves as individual and social beings (Richter, 1990).

mainly located in small-scale commerce activities and in unregulated manufacturing industries¹² in positions that usually pay low wages and offer fewer or no fringe benefits. Wajnman, Queiroz and Liberato (1998) demonstrate that the categories of female workers that had the highest growth in the 1990s were self-employed women in the trade industry, domestic workers, and public employees.

Women are unevenly represented in the different work statuses within the informal sector. On one hand, there is a small share of entrepreneurship among women, with women being less likely than men to be small-entrepreneurs in every Latin American country (Freije, 2004). On the other hand, non-agricultural self-employment comprises the greatest share of female informal work in developing countries (Chen, Vanek and Heintz, 2006), comprising as much as 44% in Latin America (ILO, 2002). Informal wage workers, also a large source of employment, are in the second place. The uneven distribution of informal work statuses among women may be explained by cultural and economic factors. Larger shares of female self-employment and domestic work might be due to the flexibility these activities provide to working mothers. Female entrepreneurs have been shown to have more difficulties obtaining loans to open or invest in their businesses, which is a sign of bias against women.

In Brazil, however, the most prevalent informal work status is wage employment, with domestic work encompassing a large share of it. Lavinias (1997) observes that the number of female informal domestic workers significantly increased in Brazil during the first half of the 1990s. Using data from the Brazilian National Household Surveys, Wajnman, Queiroz and Liberato (1998) argue that the expansion of domestic work for women corresponded to almost 65% of the total expansion of employment for Brazilian women from 1990 to 1995. Although a

¹² The manufacturing and the productive service sector increased their participation in the pool of informal workers and reduced it in the pool of registered workers (Soares, 2004).

slight increase in the percentage of formalization occurred in the last years of the 1990s, nearly 80% of female domestic workers were informally employed by the end of the decade (Bruschini and Lombardi, 2000; Wanjman, Queiroz and Liberato, 1998). More than 90% of domestic workers were females (Bruschini and Lombardi, 2000; Melo, 1998), and this occupation alone accounted for 18% of all female workers in 2001 (Abramo, 2004). Informal domestic work offers low wages, no protection against abusive employment, and long work days¹³, as well as limited mobility to better jobs in other services or other sectors of the economy. Domestic work also separates workers from their own families and communities¹⁴ (Bruschini and Lombardi, 2000; Petersen, 2001, Ward, 1988). It typically serves as a labor market entry port for younger women with lower educational qualifications (Barrientos, 2004), and is often a response to the needs of full-time privileged working women who need help to maintain their home and care for their children (Petersen, 2001). The huge inequality in Brazilian society is also an important factor in explaining the existence of such need for domestic service in the country. Racial discrimination is also an issue for this group of workers.¹⁵

Self-employment occupies the second place in the Brazilian labor market in terms of employment for women. Female self-employment is low paid and concentrated in services and commerce, and is usually of lower quality than men's (Barrientos, 2004). Neri (2002) observes that white males are more frequently successful in self-employment activities, even after controlling for demographic characteristics and educational attainment. In comparison to other female workers, self-employed women are, on average, older than domestic and informal wage

¹³ Around 47% of female domestic workers worked more than 45 hours per week, and 28% worked more than 49 hours per week (Bruschini and Lombardi, 2000)

¹⁴ It is common for domestic workers, especially when they are hired to take care of children, to stay from Monday morning to Friday evening at their employer's house without being able to return to their homes in that period.

¹⁵ According to Bruschini and Lombardi (2000) 59% of Brazilian female domestic workers are black, and they have worse work conditions than whites in the same occupation.

workers, which indicates that it serves to postpone exit from the labor force for female workers that have been pulled out the formal employment due to age discrimination (Barrientos, 2004) or that they are unable to retire because they have no access to pension system protection.

Inequality with regard to earnings is a main subject for gender and labor market studies. Although the narrowing of the gender average earnings gap is frequently argued for, evidence shows that it has happened very irregularly with regard to labor markets, industries and occupations. Lavinias and Nicol (2006) write that in 2003 Brazilian women earned, on average, 84% of men's earnings, against 68% twenty years before. According to the International Labour Office (2004b), while women receive the equivalent to 75% of men's wage in the formal sector, they earn a little more than half of men's wage in the informal sector. Chen, Vanek and Heintz (2006) use data collected from five different countries (Costa Rica, Egypt, El Salvador, Ghana and South Africa), to report that, within informal employment, women's hourly earnings uniformly fall below those of men in the same conditions, with greater gap among self-employed workers. For Barrientos (2004) there is an overlap of the gender gap with the formal-informal gap and he argues that, net of observed differences in workers or jobs, women earn less than men, and informal workers earn less than formal workers. Using data from 1990 and 1998, he shows that the formal-informal earnings gap among women reaches 70% for domestic workers and just over 50% for the self-employed. He highlights that the formal-informal earnings gap increased in the decade, even though the gender earnings gap has been narrowed, which suggests that the growth of informal sector is connected to efforts to reduced wages.

The gender gap in education has been decreasing significantly in Brazil¹⁶, even though women are still paid less than men. Education, as mentioned before, seems to have little effect on

¹⁶ The proportion of women with less than 4 years of education went from around two thirds to less than half, while the number of women with college degree doubled from 1981 to 1997 (Lavinias, 2002).

the earnings of informal sector workers, while work experience, of which women usually have less than men, has an effect on informal sector wages. Although women participate more in low productivity jobs, there is an unexplained earnings gap between female and male informal workers (Freije, 2004). Hoffman and Leone (2004) claim that women's average earnings went from 56% of men's average earnings in 1981 to 71% in 2002. He does not break his analysis down to investigate whether the narrowing in the earnings gap was similar for both informal and formal workers.

Abramo (2004), on the opposite side, uses data from the Brazilian National Household Surveys of 1991 and 2002 to show that females' average earnings are systematically smaller than males' average earnings, and draws attention to the fact that the gender earnings gap widens for workers with higher education levels. Her study shows that while the total average earnings for females was 79% of males', the proportion was reduced to 65% for those with eleven to fourteen years of school, and to 61% for those with more than fifteen years of school.

Soares' (2003) findings are opposed to that and show that wage differentials between female and male workers have decreased substantially for both formal and informal workers, but that wage differentials among female workers are considerably higher than among male workers. Lavinias (1997) shows that the gender earnings gap is largest among self-employed workers, with women's pay less than half of men's, and that it is lowest among domestic workers, which might happen because there are very few men in this employment group.

The discussion is open about the reduction of wage inequality due to gender or formal-informal sector participation in Brazil. Different findings and conclusions, as well as contradictions, may be due to the fact that the definition of formal-informal work varies from one study to other, variables are measured differently, and different data sets are used. Nonetheless,

there is evidence of women usually being in a disadvantaged position and as well as recognition that women's contribution to household income, while usually smaller than men's, has become essential for maintaining family income levels.

Hoffman and Leone (2004) note that the contribution of women's earnings to total household income has increased while the contribution of men's decreased in Brazil from 1981 to 2002 due to greater female participation in the labor market. Leone (1999) points out that the decline in household income experienced by Brazilian families was alleviated by the earnings of women and, in many cases, women's income was a key factor to get families out of poverty. The proportion of Brazilian families with at least one woman participating in the labor market was 53% in 1995. Even though it has increased by 12% in the last two decades (Hoffman and Leone, 2004), poorer families have experienced a much smaller growth of females participation in the labor force.

It is more difficult for poor women to leave home and children to get a job outside the house since they lack the ability to pay for this child care and must rely on family connections to get help¹⁷. Women's involvement in domestic and child care responsibilities diminishes their mobility and autonomy in designing their labor market strategies (Beneria, 2004). Motherhood often makes women interrupt employment, or at least engage in more flexible work schedules (Piras and Ripani, 2005), and alters not only the length but also the characteristics women's life time patterns of work experience (Gwartney-Gibbs, 1988). There is a permanent association with feminine roles and the private space of the family, even though women increasingly participate in the public space. Participation in the informal economy reinforces the strong division of roles and the inferior status of women (Hoyman, 1987).

¹⁷ In Brazil, many domestic workers take their small children with them and watch them at the same time they perform their work.

Carr and Chen (2004) find a link between working in the informal economy and being female and poor. Women's primary involvement in domestic work and child care responsibilities continues to be a source of economic vulnerability for them because it diminishes their mobility and autonomy to design labor market strategies (Beneria, 2003). According to Soares (2003) women comprise the majority of people who live in poverty and in the last decade poverty among women increased in a disproportionate manner in comparison to poverty among men, particularly in developing countries. Greater poverty levels among women and increases in the number of poor households headed by women have been observed in Latin America. Inferior characteristics of women's work mean more women and children with poor health and education levels.

In Brazil, the number of households headed by women significantly increased in the 1990s, and by the end of the decade it accounted for around one fourth of all households (Novellino, 2002; Bruschini and Lombardi, 2000). Barros, Fox and Mendonca (1997) and Lavinias and Nicol (2006) agree that Brazilian households headed by women are a heterogeneous group, with strong variations according to the extent of poverty among them. There is a group of well-off families in the higher end as well as a very vulnerable group of families in the lower end of the distribution of families headed by women¹⁸. An important finding is that among the most impoverished groups 70% of families are single-mother-with-children arrangements, a proportion that is higher than the national average in Brazil of 63%. Furthermore, the income gap for this type of household arrangement is greater than in any other. Wage discrimination and occupational segregation are cited as the major factors that contribute to the existence of this problem (Lavinias and Nicol, 2006; Barros, Fox and Mendonca, 1997).

¹⁸ Households headed by women tend to be poorer in the northeast than in the south, where there is virtually no gap.

Poor women head of households are trebly disadvantaged as they face economic hardships, suffer from cultural and policy biases and carry the full burden of household management with little or no support (Buvinic and Gupta, 1997). Poverty levels are higher for families headed by women, especially those headed by single-mothers. Children in this family arrangement have a tendency to stay out of school. Madeira (1997) writes that, in the literature about child labor, it is easy to find a connection between impoverishment, child labor and school drop out. Child labor is associated with impoverishment but also with opportunities that arise from the labor market structure, usually in the informal sector. Buvinic and Gupta (1997) state that Brazilian children of female headed households tend to work to complement familial income. Out of school, they have lower chances of improvement in the future. There is a transmission of disadvantage in these families. As England and Farkas (1986) note, a major determinant of one's structural position is the sort of position one has held previously, and the sort of position one's parent held.

Hoyman (1987) writes that, "despite all of the changes brought about by recent developments in the economic systems by women's liberation and by feminist movements, women still experience a significantly different economic reality in the formal economy from that experienced by men not only in terms of earned income, but in employment expectations and work opportunities" (p. 65). Women in the informal economy are in worse condition than women in the formal sector.

Summary

This study uses a combination of structural and dual-economy theories as the framework to investigate the female employment situation in Brazil in 1996 and 2005. It looks into how macro social and economic changes have affected the lives of working women in the period,

with a focus on how labor market structure has changed over time with regards to female employment. While structuralism considers gender a generic residue destined to wither away because discriminatory tastes are inefficient and costly (Charles and Grusky, 2004), dualism sees women as the prototypical informal workers since much of their labor takes place outside the realm of formal employment (Leonard, 1998). I argue here that both structural changes and plain discrimination against women are reasons why more Brazilian women are informally employed.

Economic recession, political instability and changes in labor market structure generate an increase in unemployment and sub-employment that affects women (Soares, 2003). Due to the economic crisis of the last decades and the neoliberal strategies adopted in Brazil in the 1990s permanent and secure employment in the formal sector was largely replaced by flexible, insecure contracts in the informal sector. This has particularly affected women, who account for the majority of those working in the informal sector. Also, the poorer female workers are those who work in the informal sector and the incidence of poverty is higher among female headed households (Guimaraes, 2005).

Labor market inequality due to gender not only pervades the labor market, but is in part created by it and shapes the way it works (Peck, 1996). In Brazil, a large extent of the contribution of women's work to the economy and the society is underestimated and not recognized and a great share of it occurs outside the context of the regulated economy. Women are more likely to work in the informal sector, primarily due to discrimination and gender constraints rather than differences in levels of human capital. Also, there are earnings advantages to working in the formal sector.

Drawing from the perspectives presented above I expect in this study to find the following: (1) a greater share of female participation in the informal sector in 2005 as compared

to 1996. I propose that (2) informal domestic work is likely to be higher than formal domestic work in both years.

The rapid growth of female labor force participation in the last decade has been associated with growth of the service sector and of low-cost manufacturing (Beneria, 2003). I anticipate finding in this study, (3) a higher share of female service industry employees in the informal sector than in the formal sector in both years, with the proportion in 2005 greater than in 1996. (4) Informal manufacturing is also expected to increase from 1996 to 2005, due to increase in subcontracting. With regards to occupations, I expect to find: (5) female informal sector workers disproportionately represented in low skilled and non-specialized occupations in comparison to formal sector in both years, with no significant change from 1996 to 2005.

The Brazilian female labor market is unequally structured. The higher the female levels of education and skills, the greater their possibility to be formally employed. I expect to find a polarization in the Brazilian female labor market with regards to education and income. Women with lower levels of education get informal jobs, earn low incomes and are pushed to the margins. Even though I anticipate the average years of schooling to be higher in 2005 than in 1996 for women in all work statuses, I expect that: (6) the education gap among formal and informal workers will be reduced. It is expected that: (7) formal and informal employees and self-employed workers have similar levels of education in 2005.

Women's higher levels of education do not necessarily translate into labor market gains. Occupational segregation and gender-based discriminatory practices reduce these possible gains. Despite the higher expected female educational levels in 2005, its contrast with job precariousness and low-income levels received by the majority is expected to create income inequality. I predict that: (8) average income is lower for informal sector workers, with informal

domestic workers being in the lowest position in terms of income, followed by informal employees and self-employed.

In the new economic organization women have to find ways to help the family keep their previous income levels or basically support themselves. They usually find jobs in the informal sector in low wage positions offered in small firms or working on their own account. While positive outcomes are experienced by some workers, the great majority are left out. I predict that: (9) women who work in the informal sector are more likely to be impoverished than women who work in the formal sector.

Changes in the Brazilian family structure are also expected to play a role in the female labor market structure. Higher divorce rates and more female economic independence lead to more women being the bread winners in the household. I expect to find: (10) an overall increase in the share of female head-ship in 2005 compared to 1996, but I expect that: (11) female-headed households are more likely to occur in the informal sector.

Part-time work is one common type of flexible work that women often engage in. Although it offers a chance for better balance between working life and family responsibilities it often offers lower hourly wages, fewer benefits and reduced career advancement opportunities (Bardasi and Gornick, 2003; Buvinic and Gupta, 1997). In Brazil: (12) I expect that workers are likely to work on average fewer hours in the informal sector and I expect to find: (13) part-time work more prevalent among informal than formal sector workers.

I expect that: (14) Brazilian female workers will, on average, be older in 2005 than in 1996. Due to general decreases in income levels in Brazil, women stay longer in the labor force. Women who are informally employed are expected to be older than those who are formally employed due to discriminatory practices with regards to age in the formal sector.

Methods

The study is of quantitative nature and uses statistical analysis to investigate relationships between variables. The choice of quantitative methods is justified by the type of questions asked in the study and the type of data available.

Data

The data used in this study come from the Monthly Employment Survey (*Pesquisa Mensal de Emprego - PME*), performed by the Brazilian Statistics Office (IBGE – *Instituto Brasileiro de Geografia e Estatística*). I use data from March 1996 and March 2005. The Monthly Employment Survey is a household based survey that investigates work, employment, education and income matters for people 10 years of age and older. It investigates approximately 100.000 individuals through personal interviews in around 40.000 households every month¹⁹, and covers six large metropolitan areas: three in the Southeast region (Belo Horizonte, Sao Paulo and Rio de Janeiro), two in the Northeast (Salvador and Recife) and one in the South region (Porto Alegre). It uses a combination of cluster and random sampling to define the areas and the households to be included in the survey. A selected sample for each region remains in the survey for 10 years in a row. Each household is surveyed for four consecutive months and is then left out for eight months, to return again for four more consecutive months before it is excluded from the sample. It is representative of the largest metropolitan areas in Brazil but does not cover all regions. The Monthly Employment Survey has been largely used in studies about the informal sector in Brazil, even though it is not the most used source of data²⁰.

¹⁹ Each surveyor visits around 100 houses per month and uses a pocket computer to record the information collected.

²⁰ The majority of studies uses the PNAD (National Sample Household Survey), carried by the Brazilian Statistics Office as well.

The subjects of this study are female wage workers - women that declared to have a paid job or activity when they were surveyed, who are 15 to 65 years old. A preliminary analysis of the data showed that few women younger than 15 and older than 65 years declared to have a paid activity (less than 2.5% of the entire datasets for the two groups). The younger subjects were students while the older ones had retired from the labor force. Therefore, I eliminated all female subjects that declared they did not work - students, unemployed and retired women -, and those that were not in the targeted age range, as well as all male subjects from both datasets. I also eliminated from the datasets all women who worked but did not receive any income from it – unpaid workers. I reasoned that their inclusion in the analysis could lead to an over estimation of the impoverished group of workers. Being an unpaid worker does not necessarily mean being poor. Many unpaid workers are either children or spouses of the head of household and work in a family business²¹. The samples ended up with 12,154 cases for 1996 and 15,273 cases for 2005.

Variables

I operationalized two sets of variables to use in this study. Table 1 shows the description and values for each of them. For demographic and familial characteristics I use the variables age, education, and family status. Age is the actual age in years of each subject at the time of the survey and is also measured in a variable ‘age groups’. Education is the years of school completed and is measured in terms of cycles of schooling completed. Status in the family is divided into: 1) head of the household, 2) spouse or 3) other. Even though work related characteristics may vary according to race, and race plays an important role in many aspects of social life in Brazil, the study does not investigate how race effects the possibility of working in the informal sector because there was no information about it in the original 1996 dataset. The

²¹ I included in the study all women 15 to 65 years of age with at least \$1 of monthly income – wage workers.

work related variables are work status, sector of employment, occupation, industry, monthly income, monthly income range, hours worked per week, and average hourly income.

The variable work status has three categories: domestic worker, employee and self-employed. The category employee refers to individuals who declared that they work for a firm or another individual directly. Even though domestic workers could have been included under the employee category, it is a work status so prevalent among women in Brazil that it is important to consider them as a separate group for the analysis. Self-employed are individuals who work on their own account with no ties to a specific firm or person.

The variable sector of employment has two categories: formal and informal. This was measured by a straight forward question in the survey. All subjects that declared to be wage workers were asked if they possessed a work booklet signed by their employers. Those who responded 'no' are the informal workers, and those who responded 'yes' are the formal workers. In the formal sector the only work statuses are domestic worker and employees, and in the informal sector, besides these two categories, there is also the self-employed work status. Self-employed are not considered to be formally employed in this study or to be small business entrepreneurs. In order to be considered self-employed in the Monthly Employment Survey the individual must not have any employees, either paid or not²².

²² When individuals declare to have at least one employee, they are put under the 'employer' work status in the Monthly Employment Survey, a category that is not investigated in this study because employers could not be categorized as being either in the formal or informal sector

Table 1 – Variables Description

Variable	Description	Means and Std. Deviations
Age	Age of respondent in years	(1996 – Mean=34.6; Sd=11.1) (2005 - Mean=35.8; Sd=11.5)
Age groups	15 to 25 years of age – code 1 26 to 35 years of age – code 2 36 to 45 years of age – code 3 46 to 55 years of age – code 4 56 to 65 years of age – code 5	
Head of Household	No – 0 Yes – 1	
Education	Actual years of schooling	(1996 – Mean=7.2; Sd.=3.7) (2005 - Mean=8.6; Sd=3.3)
Education groups	None – code 0 1 to 4 years of school – first elementary cycle – code 1 5 to 8 years of school- second elementary cycle – code 2 9 to11 years of school –high school education – code 3 12 years of school or more –college education and up – code 4	
Work Status	Domestic Worker – code 1 Employee – code 2 Self-Employed – code 3	
Sector	Informal –code 0 Formal – code 1	
Occupation	Executives / Managers – code 1 Professionals – code 2 Technicians – code 3 Sales Workers – code 4 Administrative support workers – code 5 Craft Workers – code 6 Operatives / Production Workers – code 7 Laborers and Helpers – code 8 Service Workers – code 9 Undefined/ poorly defined occupations – code 10	
Industry	Manufacturing – code 1 Sales – code 3 Domestic Service – code 5 Service – code 7 Others – code 9	
Income	The sum of all earnings received during the month (1996 income was adjusted for inflation)	(1996 – Mean=648.69; Sd=892.34) (2005 - Mean=585.58; Sd=844.93)

(Table 1 - continued)

Income range	Income divided by minimum wage: 0 to 0.5 minimum wage – code 1 more than 0.5 to 1 minimum wage – code 2 more than 1 to 2 minimum wages – code 3 more than 2 to 3 minimum wages – code 4 more than 3 to 4 minimum wages – code 5 more than 4 to 5 minimum wages – code 6 more than 5 to 6 minimum wages – code 7 more than 6 to 7 minimum wages – code 8 more than 7 to 8 minimum wages – code 9 more than 8 to 9 minimum wages – code 10 more than 9 to 10 minimum wages – code 11 more than 10 to 11 minimum wage – code 12 more than 11 to 12 minimum wages – code 13 more than 12 to 13 minimum wages – code 14 more than 13 to 14 minimum wages – code 15 more than 14 to 15 minimum wages – code 16 more than 15 minimum wages – code 17 (minimum wage is \$100 <i>reais</i> * in 1996, and \$260 <i>reais</i> * in 2005) * <i>Brazilian currency</i>	
Hours per week	Total hours worked in the week	(1996 - Mean=40.04 ; Sd=11.27) (2005 - Mean=39.5; Sd=11.4)
Part Time work	Part-time: total hours worked in the week is less than 40 – code 0 Full-time: total hours worked in the week is 40 or more – code 1	
Average hourly earning	Monthly income divided by the total hours worked in the week multiplied by the average number of weeks in the month (4.35).	(1996 – Mean=7.66; Sd=11.14) (2005 - Mean=4.43; Sd=6.12)
Sub-paid work	Sub paid hourly average income is less than \$0.58* <i>reais</i> in 1996 Sub-paid hourly average income is less than \$1.50* <i>reais</i> in 2005 No – 0 Yes – 1 * Hourly minimum wages in 1996 and 2005.	

Since the Monthly Employment Survey underwent a methodology revision in 2001, I encountered some difficulties in working with the two datasets. The variables affected were class of work, occupation, and work status. The first difficulty I encountered was that before 2001 the Monthly Employment Survey did not sort out public sector workers from the employee group.

And, because public sector workers do not have their work card registered by their employer,²³ they were classified as non-registered workers. To leave the 1996 data as it was would make them incorrectly classified in the informal sector. To solve this problem I looked over the information on occupation and industry so as to reclassify them as public sector workers. Subjects that declared themselves public servants, such as public school teachers, doctors employed in public health care sector, public administration employees, public security personnel, and national defense personnel were included in this new category of work status.²⁴ Formal employees accounted for 62% of all women in the dataset, while 38% held an informal position, either as domestic worker or informal employee. The new proportions, after the revised reclassification, were 70% and 30% respectively. The analysis of public sector employment is not within the scope of this study, so this group is not included in the analysis²⁵.

The second difficulty I came across while working with the two datasets was that in 1996 domestic workers were not considered a separate category of the work status variable, as they were in 2005. Once again, I had to look over the occupation and industry information to sort domestic workers out of the whole employee group. I identified all the cases in the data set that resembled domestic work²⁶ in the variable occupation and that were coded in the service industry within the industry variable. I then recoded these cases from 'employee' to 'domestic worker' in the variable work status, and from 'service' to 'domestic service' in the industry variable. This

²³ Their work contract is regulated by set of labor laws that are different from those of the private sector.

²⁴ In doing so I identified a great number of public workers but not all of them. There was no way of identifying those people who worked for public enterprises in the transformation industry, for example. However, the first half of the nineties was when a great wave of privatizations took place. Among them there were infra-structure, energy, steel, chemical and petrochemical industries. Hence, the changes made in the data set should not represent a great problem.

²⁵ The same is true for the group defined as 'employers'. Since they cannot be categorized under formal or informal due to the lack of information on that matter, I decided to exclude them from the analysis.

²⁶ Maid, nanny, cook, etc.

was imperative since women account for more than 90% of domestic workers in Brazil, and many of them are found in the informal sector (Bruschini, 2000). Not considering them under a separate category could conceal some important findings that are specific to this work status. In the original data set there were 74% females categorized as employees. After the reclassification, female domestic workers accounted for 14% and female employees accounted for 60%. For the 2005 dataset, I used the actual information on work status.

The third and main difficulty I encountered was that the variable occupation was measured differently in 1996 and 2005. While it was very detailed in 1996, comprising almost four hundred occupations, there were only fifty four occupations listed in 2005. To get to a single set of occupations that could be used in both datasets, I performed a detailed analysis of the existing occupations and recoded them according to the 2000 US Census occupation groups. First, I looked into each occupation listed in 1996 and tried to find an equivalent in 2005. Second I analyzed the nature of each occupation listed in the two datasets and tried to match the job categories provided by the 2000 US Census. They are: Managers and Executives; Professionals; Technicians; Sales Workers; Administrative Support Workers; Operations and Production Workers; Laborers and Helpers; Service Workers; and Other Occupations²⁷. Some occupations could be recoded easily, such as managers and professionals. Technical, sales and administrative support occupations did not present any significant problem in the recoding process. The other occupations, however, were more difficult to recode and in some cases I had to look at the education variable to help get a better idea of what occupation category it would fit best.²⁸

²⁷Craft work could not be easily identified among the Brazilian set occupations, especially in 2005, and is not included in the study.

²⁸ For instance, key entry assistants, office assistants and receptionists were recoded as administrative support workers; engineers, lawyers, accountants were recoded as professionals; massage therapists and hair stylists were recoded as service workers; cashiers, insurance sales representatives, vendors of all types were recoded as sales

Occupations that could not be classified in any of these categories, were poorly or undefined, were coded as 'other'. They accounted for 3% in 1996 and 1% in 2005.

For both datasets I calculated education as the actual years of school completed, even though it was not clear in the 1996 dataset whether the subjects had completed or not their last year of school. For the cases in which the information on education could not be calculated or for those it was missing (thirty seven cases in 2005), I entered the mean years of education for the sample. The variable education is measured in two ways: first, the actual years of school; second, in five different categories with regards levels of education: 1) none; 2) one to four years; 3) five to eight years; 4) nine to eleven years; 5) twelve years of school or more.

The variable industry comprises Manufacturing, Sales and Domestic Service and Service Industries. For some more detailed investigation of the service industry, the category was divided into domestic service and services. All the respondents that were coded as domestic workers in the work status variable were recoded from service to domestic service industry. Construction and all cases that were poorly defined or undefined were grouped as 'other industries'. It accounted for 2% in 1996 and less than 1% in 2005.

Income is defined as the total earnings the worker received monthly in their main job and any other job, measured in real income values as well as in income range according to the minimum wage for the year²⁹. The range goes from 1, representing half of the minimum wage, to 17, representing income higher than fifteen minimum wages³⁰. As I did with education, I used

workers; assemblers and sewing machine operators were coded as operation and production workers; diagnose technicians and chemical technicians were coded as technicians.

²⁹ The minimum wage was R\$100.00 (*reais*) in March 1996, and R\$ 260.00 in March 2005.

³⁰ See Table 1 for a detailed description of variables.

the mean value of income for the missing cases, even though they represented less than 5% of all cases in both data sets.

Hours worked per week were measured as the actual numbers of hours worked in the main job and in any other job. Part time workers were defined as those who worked less than 40 hours per week. Even though the Brazilian labor legislation defines 44 hours as the maximum amount of hours a person can work in a week, under regular pay, a great number of enterprises hire employees on 40 hours per week contract, and that has become the standard measure.

Two other variables used in the study have to do with income and hours worked per week and are used to investigate poverty levels among female workers: 1) average hourly earning; 2) sub-paid work. The first is used in comparison to the average income level of different sectors and of different work statuses, and the second, a categorical variable, refers to workers being paid less than the hourly minimum wage for each year.

Limitations

As much as I have tried to solve the problems concerning methodological differences between the two datasets, there is a possibility of measurement error. The changes I have done with regard to occupation in particular are less than perfect. But most of all, the greatest difficulty in studying work informality resides in how it is defined and measured. Even though this study attempts to reveal some characteristics of who are the female informal workers and how the female informal sector has developed from 1996 to 2005, it represents a very limited analysis. Studying the informal sector is a very challenging endeavor because of measurement issues.

The informal sector does not limit itself to unregistered and self-employed workers. There are also small entrepreneurs with very few unregistered employees that are not identified

by the Monthly Employment Survey, and thus are not considered in this study. Also, many women have “second-job-like” activities, most of them operated informally³¹, that they do not report being second jobs or small businesses. I acknowledge that these may be an important part of the informal sector that I failed to grasp in this study. However, I present here important findings about women who work in the informal sector that may help in the understanding some important aspects of it.

Studying the informal sector is a very challenging endeavor because of measurement issues. To get to a definition of what is informal work is a great challenge and can impose great limitations to any study of informal labor market. The informal sector does not limit itself to unregistered and self-employed workers. There are also small entrepreneurs with very few unregistered employees that are not identified by the Monthly Employment Survey, and thus are not considered in this study. Also, many women have “second-job-like” activities, most of them operated informally³², that they do not report being second jobs or small businesses. I acknowledge that these may be an important part of the informal sector that I failed to grasp in this study. However, I present here important findings about women who work in the informal sector that may help in the understanding some important aspects of it.

³¹ I am referring here to those people who have a formal job as a main source of income, but after they finish their daily shift in this job, they do something else to complement their income. These activities are usually in the informal sector and they are not measured by mainstream surveys. Nonetheless, they greatly affect the economy, as well as the social and familial lives of people.

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Results

This section is divided in two sub-sections: 1) descriptive analysis, in which I present analysis of differences between means and proportions from 1996 to 2005, and 2) multivariate analysis, in which I investigate the predictors of monthly income for service workers in 1996 and 2005.

Descriptive Analysis

Table 2 shows the female participation in the Brazilian labor force in 1996 and 2005, according to their employment status and level of formalization. The number of female workers in both sectors is higher in 2005 than in 1996, confirming the fact that more women have entered the labor force in the period. Both formal and informal sectors have increased in size from 1996 to 2005. The privatization of public enterprises that occurred in the 1990s led to loss of jobs in the public sector. Many women that were displaced from public employment were absorbed in private firms that took over previously state owned firms. That may be one explanation of the slight increase in formal employment from 1996 to 2005. However, it seems that it was the informal sector that offered more job opportunities for them. Informality increased at a higher rate showing that more women were drawn to the informal sector than to the formal sector. The formal sector accounted for 42% of the female employed population in 1996 and 44% in 2005, while the informal sector accounted 41% in 1996 and 45% in 2005.

Even though female participation in the Brazilian labor market seems to be almost evenly distributed between the two sectors,³³ it is important to notice that the informal sector has

³³ Public sector and employers are not counted here, and will not be included in the forward analysis. While the first group has a different set of rules governing employment, there is not enough information in the data to categorize the second group as formal or informal. Many studies define “employer” as informal, but there is not enough information in the datasets used here to unambiguously support such assumption.

become bigger for women than the formal sector in 2005. The expectation that female participation in the informal sector would be greater in 2005 than in 1996 is confirmed here.

Table 2 – Female Workers by Status and Sector, by Year

Sector / Status	Percent 1996	Percent 2005
Formal		
Domestic Worker	36	37
Employee	6	7
Informal		
Domestic Worker	10	15
Employee	8	12
Self-employed	23	18
Employer	3	3
Public Sector Worker	15	8
N	14875	17697

Source: own elaboration

Table 3 contains averages and standard deviations for some of the variables included in this study that describe female workers in 1996 and 2005 in both sectors. Results for the t-tests are also presented in the table. The mean differences are statistically significant for all variables in both years. As I had expected, women in the Brazilian labor market have become older in general from 1996 to 2005. Women in the informal sector were significantly older than women in the formal sector in both years. Older women are considered to have a weaker attachment to the labor market (Peck, 1996) and the informal sector is likely to absorb the supply of labor that does not find place in the formal sector. These women usually remain in the labor force longer due to the need to supplement familial income. Employment in the informal sector is a solution for them.

Women in the Brazilian labor market have also become more educated over the period of time studied. Both formal and informal sector female workers showed advancement in human capital from 1996 to 2005. Even though the average educational gap between formal and informal sector female workers was slightly reduced from 1996 to 2005, informal workers level

of education continued to be significantly lower than formal workers level of education, which confirms my previous expectation. The average level of education was approximately eight years of school for formal sector workers and six years of school for informal sector workers in 1996. In 2005 the averages were approximately nine and eight years, respectively.

Table 3 – Means and Standard Deviations for Variables by Sector and Year

Variables	1996			2005		
	Formal	Informal	t-test	Formal	Informal	t-test
Age	32.99 (10.348)	36.17 (11.644)	15.901**	34.05 (10.435)	37.47 (12.229)	18.564**
Years of School	8.13 (3.547)	6.30 (3.714)	-27.689**	9.33 (3.022)	7.88 (3.497)	-27.336**
Hours per week	42.25 (7.71)	37.76 (13.653)	-14.233**	42.26 (7.658)	36.78 (13.670)	-19.138**
Monthly Income	761.14 (889.292)	532.59 (880.606)	-22.429**	714.98 (863.937)	453.37 (805.047)	-30.520**
Hourly Income	8.48 (10.901)	6.81 (11.318)	-8.250**	4.05 (4.972)	3.08 (4.834)	-12.222**
N	6174	5980		7629	7644	

Source: own elaboration

Values in parentheses are standard deviations. ** $p < .01$

Women in the informal sector worked on average significantly fewer hours per week in comparison to women in the formal sector in 1996 and in 2005. While in the formal sector the distribution of average hours worked per week is more concentrated, it is more dispersed for informal sector female workers. The Brazilian labor laws set strict regulations and determine a premium for overtime work. Firms usually try to keep overtime work to a minimum to reduce costs. In the informal sector work is unregulated and unprotected and workers are subject to the demands of those who contract their work. Domestic workers, especially those who are hired to take care of children and sleep over their employers' houses, usually have very long workdays. On the other hand, part-time employment is very common among informal workers. The distribution of average hours worked per week greatly varies within informality. The fact that average hours worked per week in the informal sector is lower than average hours worked per

week in the formal sector confirms my expectation. Informal sector work serves women who need to balance their family care responsibilities with work outside the house.

Average monthly income is significantly lower for female informal workers in comparison to average monthly income of female formal workers in both years. This finding supports my expectation that income levels are lower for informal sector female workers than for formal sector female workers. Informal sector female work is usually low-paid. However, it is important to note that average monthly incomes for both formal and informal sector female workers is lower in 2005 than in 1996. The slow economic growth of the Brazilian economy, together with the precarious working conditions in both sectors, is a possible explanation for this fact. One important point to observe is the unequal income distribution in Brazilian society represented here by the earning of women in both sectors. The fact that the standard deviations for monthly income among formal sector female workers in 1996 and 2005 are higher than the average monthly income shows how dispersed the income distribution is in Brazil. For informal sector female workers the income distribution is even more unequal: standard deviations are 68% higher than the average monthly income in 1996 and 78% higher than the average monthly income in 2005.

From 1996 to 2005, both formal and informal sector female workers have become, on average, older and more educated, but have lower levels of income. Formal sector workers have the same average weekly work hours, while informal sector workers have shorter work weeks. It seems that more women entered the labor force at older ages because they have remained longer in school or because they postponed their exit from the labor force to sustain family income levels. Additionally, many workers remain in the labor force after they retire to complement their income, and usually find jobs in the informal sector because they are believed to have a weaker

attachment to the labor market. Much of employment in the informal sector tends to be distributed according to gender and age (Peck, 1996).

Gains in human capital for females in both sectors do not appear to have an impact on their income levels. Women have become more educated, but their income levels have not increased. This study cannot address whether it is due to discrimination against women in the labor force because it does not investigate the income levels of men in Brazil in the period. It indicates, however, that the decrease in average earnings for women is part of the general decrease in income levels that have occurred in the country as a result of the increased instability in employment and earnings structure brought about by the economic changes implemented in the 1990s. As globalization and trade liberalization pressure enterprises to implement changes in their production and to reduce costs, wage structures are usually changed. The slow growth of the Brazilian economy seems to have had a negative effect on income.

Table 4 compares the percentage of female workers by sector and year for most of the variables in the study. A major change in the composition of the informal sector was noticed. Within informality, self-employment accounted for 55% of the informal sector in 1996, but its share declined to 39% of all informal positions in 2005. At the same time, all other formal and informal work statuses increased over the time period. Self-employed women might have moved to these other statuses or left the labor force. A rise in subcontracting brought about by flexible work organization and liberalization of the Brazilian economy is one of the possible explanations for this fact. Women in self-employment are pushed to engage in informal wage-work as industries such as garment and clothing, contract out their production in order to keep costs low and companies focus on other areas of their businesses such as design and marketing. Another possible explanation is that discount stores offering goods at bargain prices may have made it

very hard for women who sold goods in small quantities on the street to keep their customers, and thus were forced to find some other job. Higher levels of unemployment among men and a decrease in men's income levels might also have pushed previously self-employed women to engage in wage work as means of having a reliable source of income to contribute to the family's income.

Table 4 – Female work in Brazil - percentages for variables by Sector and Year

Variable	Formal		Informal	
	1996	2005	1996	2005
Sector	50.8	50.0	49.2	50.0
Work Status				
Domestic Worker	14.1	15.5	20.0	26.8
Employee	84.9	84.5	24.5	33.8
Self-Employed			55.5	39.3
Industry				
Manufacturing	19.7	15.4	7.9	15.4
Sales	16.1	18.5	16.6	18.5
Domestic Service	14.1	15.5	20.0	26.8
Other Services	48.5	49.5	54.0	38.4
Occupations				
Executive/Managers	3.9	4.9	1.1	3.0
Professionals	4.5	7.8	4.9	8.9
Technicians	7.4	5.9	4.0	5.1
Sales Workers	8.8	9.1	21.6	14.3
Administrative Support	27.7	31.2	4.4	11.5
Craft Workers	.4	.3	.6	.4
Production Workers	10.1	8.6	10.5	13.3
Laborers and Helpers	19.2	15.2	32.2	25.6
Service Workers	15.6	16.9	17.4	17.7
Other	2.5	.1	3.3	.1
Other Industries	1.6	1.1	1.5	.9
Years of School - groups				
None	3.3	1.3	8.0	3.7
1 to 4 years	20.8	10.2	34.8	18.1
5 to 8 years	24.6	20.8	27.7	30.5
9 to 11 years	34.8	45.9	20.3	33.8
12 years and more	16.5	21.8	9.2	13.9
Monthly Income Range				
up to 0.5 min. wage	.1	.2	9.1	14.2
more than 0.5 to 1 min. wage	12.3	13.8	29.8	33.8
more than 1 to 2 min. wages	30.9	48.4	27.0	32.1
more than 2 to 3 min. wages	19.3	13.5	11.6	8.4
more than 3 to 4 min. wages	9.5	10.6	8.3	5.2
more than 4 to 5 min. wages	9.9	3.3	4.7	1.1
more than 5 to 6 min. wages	3.8	2.5	1.8	1.4
more than 6 to 7 min. wages	2.4	1.2	.8	.4
more than 7 to 8 min. wages	2.4	1.8	1.2	1.2
more than 8 to 9 min. wages	1.2	.3	.3	.2
more than 9 to 10 min. wages	2.0	.9	2.0	.4

(Table 4 - continued)

more than 10 to 11 min. wages	.5	.2	.2	.1
more than 11 to 12 min. wages	1.1	1.0	.4	.5
more than 12 to 13 min. wages	.5	.1	.2	.0
more than 13 to 14 min. wages	.2	.3	.1	.1
more than 14 to 15 min. wages	1.0	.1	.8	.0
more than 15 min. wages	3.1	1.6	1.8	.7
Part-time				
No	87.9	87.6	61.6	59.3
Yes	12.1	12.4	38.4	40.7
Sub-paid				
No	92.2	89.6	78.9	68.3
Yes	7.8	10.4	21.1	31.7
Head of Household				
No	78.5	73.5	76.3	68.4
Yes	21.5	26.5	23.7	31.6
Age – groups				
15 – 25 years	28.9	21.2	21.8	18.1
26 – 35 years	33.4	33.7	27.1	25.2
36 – 45 years	24.3	25.1	28.9	26.2
46 – 55 years	10.5	12.8	16.1	19.9
56 – 65 years	2.9	7.3	6.1	10.5
N	6174	7629	5980	7644

Source: own elaboration

The informal sector composition in 2005 matches up with results presented by other studies that informal wage employment, that is, domestic workers plus informal employees, is the more prevalent informal work status for Brazilian women (Chen 2004). Informal domestic work was 34% higher in 2005 than it was in 1996 and almost twice the size of formal domestic work in 2005. These results confirm my previous expectations. Rise in domestic work is often explained by the fact that more women enter the labor force and hire other more disadvantaged women to take care of their houses and children. The argument fits well here since there are more women in the professional and managerial occupations in the Brazilian labor force in 2005. Informal work is a large source of employment for women with lower levels of education and from poorer families.

In line with the anticipated results, females are concentrated in the service industry in Brazil in 1996 and in 2005. Within the formal sector, ‘domestic services’ together with ‘other

services' industries accounted for 63% of all female employment by industry in 1996, and 65% in 2005. In the informal sector, 'domestic service' and 'other services' industries were 74% in 1996 and 65% in 2005. The overall shrinkage in the informal service industry from 1996 to 2005 was unexpected. Its decrease, however, was disproportionately represented by the categories 'domestic service' and 'other services'. While the informal 'domestic service' industry increased by 34% over the period of time studied, the informal 'other services' industry decreased by 29%. As mentioned before, the growth in 'domestic service' industry work may be explained by the fact that when more women enter the labor force in advanced occupations they hire others to care for their house and families, and also by the growing income inequality that pervades Brazilian society. The decrease in 'other service' industry is more puzzling. The concept of feminization of the labor force links the increase in women's participation in the labor force to growth in size of the service industry, usually in the informal sector. From the data presented here, the growing rate of female participation in the labor force cannot be associated with growing shares of service industry employment. Female informal workers are migrating from the service industry to other industries in the informal sector, as all these other industries have higher proportions of total employment in 2005 than in 1996.

While female employment in formal manufacturing decreased by 22%, employment in informal manufacturing practically doubled³⁴. Although an increase in the proportion of informal manufacturing was predicted, the observed increase was much higher than expected. Subcontracting seems to be the major force causing this shift. Larger enterprises contract out to smaller firms or individuals to carry out parts of the production. Even though informal manufacturing usually offers poor working conditions and low pay, it has been extensively

³⁴ According to Ulyssea (2005) informality in the manufacturing sector in Brazil doubled from 1992 to 2002, from 15% to 30% respectively.

adopted by firms in order to take advantage of the high supply of female labor and to reduce costs. Women have widely accepted this work arrangement because it can be done from their homes, and thus they can combine work that would otherwise be done outside their homes with family work. It makes it easier for these women to attend to their children and houses at the same time they earn an income.

A closer look at the change in distribution of self-employed women across industry categories is worthwhile (Table 5). The proportion of female self-employed in the manufacturing industry was 5% in 1996 and 24% in 2005. The share of the sales industry was higher in 2005, as well: 23% in 1996 compared to 33% in 2005. Even though participation of self-employed females in the service industry had the highest proportion in both years, it unexpectedly had a huge drop, going from 71% in 1996 to 42% in 2005. It seems that the subcontracting force is stronger among self-employed women than among employees.

Table 5 – Percentage of self-employed female workers by industry

Industry	1996	2005
Manufacturing	5%	24%
Sales	23%	33%
Service	71%	42%
Other	1%	1%
N	3321	3307

Source: own elaboration

Examination of the occupational composition of formal and informal sectors in 1996 and in 2005 reveals no surprises. The occupations in which women are mostly found in both sectors are the traditional female occupations: laborers and helpers, service, administrative support, and sales workers. In general, a very low proportion of women have managerial, professional and technical occupations, and even less in the informal sector, even though a considerable increase was observed in the proportions of managers and professionals in both sectors, and of managers in the informal sector. While in the formal sector, administrative support occupation takes in the

largest number of women, within informality the majority of women are occupied as laborers and helpers in both years. This result confirms the expectation that low skilled and non-specialized occupations would be more prevalent among informal workers in both years, with no significant change from 1996 to 2005. Female informal employment is generally characterized by low skills and low opportunities for advancement and mobility.

Three major changes happened in occupational composition of the formal and informal sectors in the period. The most significant one was the huge increase in the proportion of administrative support workers in the informal sector. It was three times higher in 2005 than in 1996. Taken together with the huge increase in the professional occupations in the informal sector, this increase in administrative support occupations may be interpreted as professionals in the informal sector hiring assistants who are informally employed. The second major change refers to proportion of sales workers in the informal sector dropping from 22% to 14% over the decade, even though an increase in the size of the service industry was noticed. As mentioned before, it seems that small vendors are losing space to big discount stores that offer goods at very competitive prices. The money the small vendor used to make became smaller as more people were attracted to these new venues. The third major change refers to the proportions of technicians and production workers being reduced by 20% and 15% respectively in the formal sector and increasing in the informal sector by 28% and 27%, respectively from 1996 to 2005. The 'informalization' of the manufacturing industry accounts for a great part of these changes.

Women's gains in education seem to be reflected in the occupation distribution. More women are found in traditionally male dominated managerial, professional and technical occupations in 2005 as compared to 1996. The changes that occurred over the period studied did

not drastically alter the overall occupational composition from 1996 to 2005, but clearly reflected the economic and social changes that took place in the Brazil.

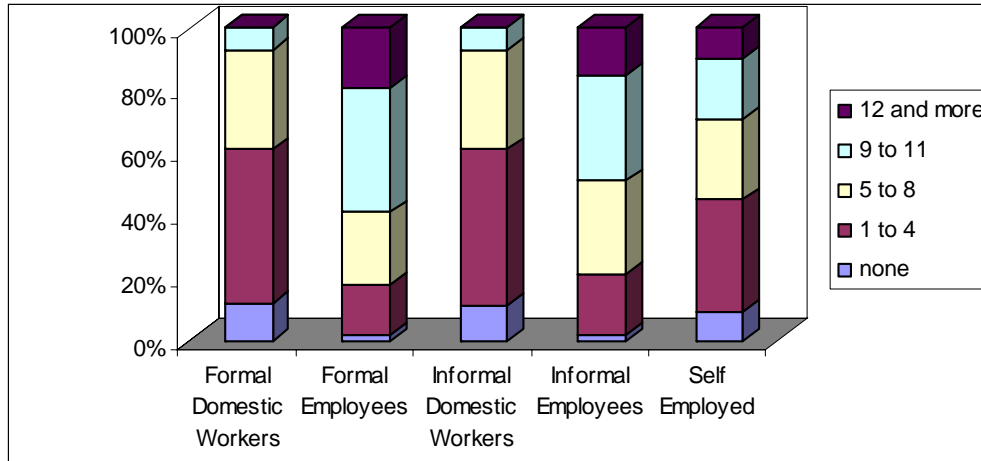
Increases in levels of education were observed for both formal and informal sector female workers over the period studied. Women in both sectors have achieved higher levels of education in 2005. The greatest increase occurred for female informal sector workers with 9 to 11 years of education, which is equivalent to some high school education: it accounted for 20% of employed women in 1996 and 33% in 2005. In spite of the gains, women in the formal sector had higher levels of education than women in the informal sector in both years. That finding confirms the notion that individuals with lower levels of education are more likely to find employment in the secondary or informal sector.

Figures 1 and 2 show the distribution of education levels for each work status in 1996 and 2005. Formal and informal employees were the most educated groups of female workers, while formal and informal domestic workers had the lowest levels of education in both years. While 51% of formally employed women attended at least one year of high school in 2005, 26% had at least one year of college education.

Formal and informal domestic workers had somewhat similar levels of education in both years. Although these groups were the ones with the lowest levels of education among all employed women, they had the highest level of advancement in education in the period. While in 1996 domestic workers with the lowest education levels, that is from none to four years of school, accounted for 61% of both groups, the proportions were reduced to 34% in the formal sector and 38% in the informal sector in 2005. At the same time, the percentage of domestic workers with some high school education in both sectors, that is nine to eleven years of school, went from 7% to 20%. The average years of schooling among domestic workers in both sectors

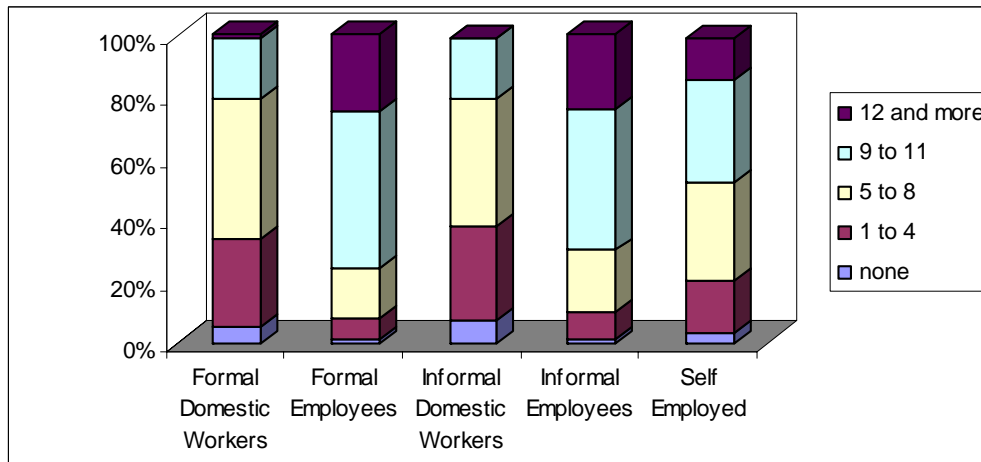
was four years in 1996 and six years in 2005. This result confirms the expectation that informal domestic workers would be the least educated group of female workers in the labor market in both years, even though the difference in education between this group and their formal counterparts is small.

Figure 1 - Distribution of Education Levels by Work Status in 1996



Source: own elaboration.

Figure 2 - Distribution of Education Levels by Work Status in 2005



Source: own elaboration.

Formal and informal employees also have similar levels of education. Less than 10% of both formal and informal employees had from none to four years of schooling. Women with at least some high school education were the highest proportion in the formal and informal

employee work status in both years: 40% and 51% for formal employees in 1996 in 2005, and 34% and 46% for informal employees in 1996 and 2005. The group with at least some college education accounted for around one fourth of formal and informal employees in 2005. The distribution of levels of education among formal and informal employees does not differ much in 2005. Other characteristics not investigated here may help explain the split in the labor market for this specific work status better than education.

Self-employed women's level of education was in between domestic workers' and employees' levels of education in both sectors in both years. In 1996, 45% of self employed women had none to four years of schooling, 19% had some high school education and 10% had some college education. In 2005, the proportions were one fifth with less than five years of education, one third with at least some high school and 14% with some college education. Although there had been a considerable increase in the education level of self-employed women, it was still lower than for formal and informal female employees. These results prove only in part the expectation that formal and informal sector employees and self-employed women would have similar levels of education. While it is true for the first two groups, it is not for the third.

Women in the informal sector earn less than in the formal sector. While minimum wage is enforced for those who are formally employed, the lack of regulation and protection for workers in the informal sector leaves the decision of what wage to pay up to the employer. Fearing unemployment, workers end up accepting the lower wages paid in the informal sector. In 2005, 14% of female workers in the informal sector made at most half minimum wage and approximately 34% made at most the minimum wage. For the formal sector, these two groups together accounted for 14%. Monthly income ranges for women in both formal and informal sector decreased from 1996 to 2005, but more so for those employed in the formal sector that

declared they receive more than one to two times the minimum wage. It seems that increase in education levels does not directly translate into better pay for Brazilian female workers, and that is largely due to the overall precariousness of the Brazilian labor market. Income levels in formal employment seem to have got a little closer to income levels in the informal sector.

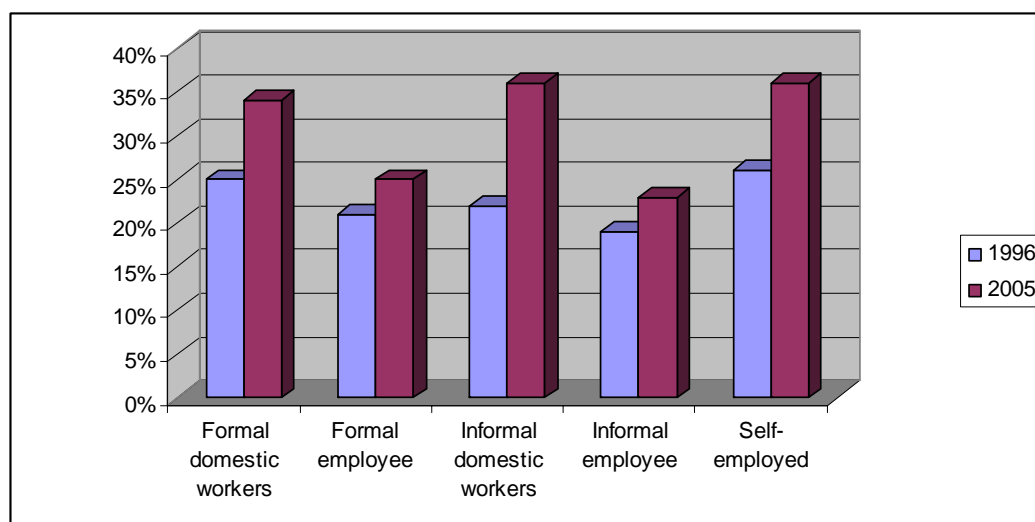
Part-time work among female workers is more prevalent in the informal sector. The proportion part time work in the formal sector was maintained at 12% in both years, whereas it increased from 38% to 41% in the informal sector. These results support the likelihood that informal employment is sought by women who need a more flexible work schedule. Women's attachment to their roles as mothers and wives limits their possibility to find work in the formal sector and firms in the informal sector take advantage of that.

The variable 'sub-paid' refers to women's hourly income being less than the hourly minimum wage. The proportion of female formal sector workers being sub-paid was approximately 8% in 1996 and 10% in 2005. In the informal sector, the proportions were 21% and approximately 32% in 1996 and in 2005, respectively. The proportion of women in the informal sector that were sub-paid was 50% higher in 2005 than in 1996. This measure confirms not only that the minimum wage is not enforced in the informal sector but also that the informal sector offers much lower wages, which suggests that there is a greater likelihood for women in the informal sector to be impoverished.

The proportions of female headed households increased over the period of time studied for both formal and informal sectors, as a reflection of changes such as higher rates of divorce and the intensification of unemployment, and decreases in income levels for men brought about by structural changes in the economy. The increase in female headship, however, was higher among informal sector female workers, with the proportion being one third higher in 2005 than

in 1996. Figure 3 shows how the proportion of female headed households increased from 1996 to 2005 for each work status. In 1996, the highest share of households headed by women was found among the self-employed. The greatest increase from 1996 to 2005, however, happened for informal domestic workers. There were about two thirds more informal domestic workers as head of households in 2005 than in 1996. In 2005 self employed and informal domestic workers had the same proportion of female headed households: 38%. The findings confirm the two expected results for family status: the proportion of female headed households was higher in 2005 than in 1996, and female headship was found in greater proportions among self-employed women.

Figure 3 - Female headed households by work status in 1996 and 2005.



Source: own elaboration.

With regard to age groups the results show that younger women participate less in the labor market, and that older women participate more in 2005 as compared to 1996. The two oldest groups of women, those who were 46 to 55 years of age and those who were 56 to 65 years of age, accounted for 20% and 10% respectively in the informal sector and for 13% and 7% respectively in the formal sector in 2005. The participation of the oldest group of women, those who were 56 to 65 years of age, in the formal sector was approximately 2.5 times greater in

2005 than in 1996, while in the informal sector it was approximately three fourths higher in 2005 than in 1996. Even though it is in the informal sector that older women find more employment opportunities, formally employed women seem to be also remaining for longer periods of time in the labor market. Economic need and recent changes in the age requirement for retirement appear to be the reasons for that change.

The informal sector offer lower wages and poorer working conditions vis-à-vis the formal sector and Brazilian women's participation in informal work is considerably higher. Ward (1988) writes employers assume that informal sector labor of women serves to narrow disparities between subsistence needs and men's wages, and consequently pay women wages that are lower than subsistence level (p.33). This fact suggests the existence of a link between female informal work and poverty, especially for women that are heads of household. As noted before, informal sector female workers earn significantly less income than their formal counterparts and the proportion of women who make less than the hourly minimum wage is noticeably higher for informal sector female workers³⁵. Earnings per hour worked is one important indicator of quality of life in the informal sector (Orlando, 2001). In 1996, the informal sector's average hourly earning was 80% of the formal sector's average hourly earning and in 2005 it was 76% of it. The average hourly earnings in the formal sector have greatly deteriorated over the period of time studied, and in 2005 it represented less than half of its 1996 value. Taken together with the fact that average hourly income in the informal sector in 2005 accounts for a lower proportion of the formal sector's average hourly income vis-à-vis 1996, we can conclude that quality of life for female informal workers has greatly declined.

In Brazil poverty levels are measured in comparison to poverty threshold or line. Families whose income per capita is lower than the minimum necessary to live adequately are considered

³⁵ See tables 3 and 4.

poor³⁶. One way to define the poverty line is to consider those who make less than half of the minimum wage to be poor. In the informal sector women who declared to make at most half of the minimum wage per month accounted for 9% in 1996 and 14% in 2005, while in the formal sector they were less than 1% in both years³⁷. If we look at those women who were head of the households and worked in the informal sector, we find 8% had a monthly income lower than 0.5 minimum wages in 1996. In 2005 this group of female workers accounted for 14%. These numbers show that the proportion of impoverished families headed by women increased in Brazil over the period of time studied. While it is not conclusive about the situation of these families because other sources of incomes from other member of the family are not included in the analysis, the fact that there is a greater proportion of female headship in Brazil together with that the proportion of impoverished families headed by women who work in the informal sector have increased is a cause of concern.

Another key point to understand poverty condition is whether the worker's monthly income level is enough to buy a nominal basket of food for a family of four per month. The average national values of this basket of food were \$ 77.10 *reais* in March 1996 and \$ 156.60 *reais* in March 2005³⁸. The proportion of families whose monthly income is lower than the price of a nominal basket of food, categorized in this study as living in extreme poverty, is greater in the informal sector. What is more, it has increased from 1996 to 2005, reaching 19% of informal sector female workers in 2005, as opposed to 14% in 1996. Additionally, the number of women whose income levels are higher but not more than twice the price of the food basket, who are

³⁶ The income considered in this study is individual income. Also, there is no information about the number of family members.

³⁷ That is largely due to enforcement of the minimum wage at the formal sector.

³⁸ These values were calculated using the values provided by the DIEESE and represent a national average. Regional differences are not taken into consideration in the calculation.

considered in this study to be poor, accounted for 38% of all female informal workers in 1996 and 21% in 2005. While the proportion of extremely poor female workers increased, the proportion of poor women decreased in the informal sector. Despite that, the proportion of women in these two poverty statuses that were head of their households reached 31% in 2005, while in 1996 they accounted for approximately 24%. Formal sector female workers categorized as extremely poor were an insignificant proportion in both years, while those categorized as poor accounted for 27% in 1996 and 30% in 2005. Female head of households among these poor women were 24% in 1996 and 30% in 2005.

These results confirm the proposition that women in the informal sector would be more impoverished than those in the formal sector, and suggests the existence of a link between female headship, informal work and poverty. The restructuring of the Brazilian economy through liberalization of the market and the feminization of the Brazilian labor force have pressed wages down in the formal and informal sectors. Working conditions for women have become worse in both sector but even worse in the informal sector. In an economy with high levels of unemployment and large supply of female labor, women have less power to try to elevate their conditions as valuable workers, and firms often take advantage of that. Females who work in the informal sector have less stable economic and working conditions. The advancements that women have made in the cultural and social settings as well as the greater independence they have achieved more recently in the country do not translate into more economic independence. Children in poor female-headed households have a greater likelihood of experiencing economic hardship and are often disadvantaged in terms of access to education and health care.

Multivariate Analysis

Table 6 shows the results of the regression models estimated to predict monthly income for female employees. The independent variables are years of school, hours worked per week, sector of employment, a dummy variable for work status (domestic work and self-employed); and dummy variables for the occupations (managers, professionals, technicians, administrative support workers, production workers, laborers and helpers and domestic workers, with service the omitted category).

Table 6 – Regression Models Predicting Monthly Income of Female Employees in 1996 and 2005.

Variables	Model 1 1996 (N= 11742)			Model 2 2005 (N=15204)		
	B	SE	Ratio	B	SE	ratio
<i>Continuous Variables</i>						
Age	13.498	.694	19.316*	12.974	.572	22.680*
Years of School	63.570	2.514	25.290*	48.130	2.310	20.840*
Hours per Week	8.241	.675	12.218*	8.221	.542	15.171*
<i>Dummy Variables</i>						
Work Status						
Domestic Worker	-83.551	31.977	-2.613*	-62.217	46.097	-1.350
Self-Employed	88.404	24.431	3.619*	-73.696	19.840	-3.714*
Occupations						
Executives and Managers	914.151	48.213	18.961*	984.306	33.586	29.307*
Professionals	1266.409	38.731	32.697*	958.503	26.638	35.982*
Technicians	239.723	35.700	6.715*	193.405	29.948	6.458*
Sales Workers	28.718	25.675	1.119	23.632	22.839	1.035
Administrative Support	273.608	27.013	10.129*	123.392	20.626	5.982*
Production Workers	-27.029	27.454	-.985	9.615	23.544	.408
Laborers and Helpers	19.544	29.150	.670	34.629	48.076	.720
Sector	-71.099	19.584	-3.630*	-124.216	14.736	-8.430*
Constant	-747.478	46.70	-15.577*	-694.882	41.980	-16.553
R ²	.286			.256		

* $p < .05$

Since the idea is to investigate change over the period studied, the first model refers to 1996 and the second model refers to 2005. All independent variables entered in the first model are also entered in the second model. The results show that age, education, and hours worked per week are significant positive predictors of earnings for female employees in both years. In 2005,

however, the influence of education on income was less than in 1996. Females employed in service occupation earned significantly less income than those employed in any other occupation, except for sales and production workers and laborers and helpers. The model strongly supports the idea that informal sector females earn significantly less income than females who are employed in the formal sector. Employment in the informal sector has a significant negative effect on income for this group of workers. The models show that employees earn significantly more than domestic workers in 1996 and 2005. The results of the comparison to self-employed women, however, differ from one year to the other. While in 1996 self-employed women earned significantly more than employees, in 2005 the situation is inverted with self-employed earnings being significantly lower than employees'. This finding may reflect the decrease in the number of women in self-employment in 2005 compared to 1996. Structural forces pressure self-employed women into less well paid formal and informal wage work.

Summary

The main findings of this study reinforce previous knowledge about female participation in the Brazilian labor market. Women have entered the labor force in great numbers in the 1990s, and the female labor force has become older and more educated. It seems that the economic crisis of the early 1990s drove more women into the labor market as their contribution to household income was needed to sustain family income levels. It was mostly in the informal sector that Brazilian women found jobs. Even though the size of the female informal sector was just a little larger than the female formal sector in 2005 as compared to 1996, the working conditions in the informal sector have deteriorated even further over the period of time studied here, as evidenced by lower wages offered in the informal sector. There are more Brazilian women in low paid and part-time positions in the informal sector in 2005 than in 1996.

On average, women who work in the informal sector are less educated than formal sector female workers. The higher levels of human capital achieved by women facilitated their entrance in the labor market but did not bring comparable gains in terms of earnings. Average earnings for women who only had some high school education did not significantly vary across sectors and work statuses. Overall, returns to schooling appear to have become less influential in determining income and more so in the informal sector. Less educated women usually get jobs in sales and service occupations, and in service and manufacturing industries. These jobs usually offer lower wages and fewer opportunities for improvement.

The analysis provided here shows that half of the women in the labor force, a very significant proportion of women's contribution to the economy in Brazil, is unrecognized, uncounted and unregulated. Globalization and economic restructuring in Brazil have exacerbated the informalization and precarious nature of working conditions in the country. The female labor force has become more educated and older but also poorer. In general, poverty is more prevalent among informal sector female workers. If informality leads to poverty and poverty leads to more informality, females that labor in the Brazilian informal sector are truly in a disadvantaged position. Although informal jobs may be a means for securing income for many women, it might not be enough for many females to rise above the poverty line.

Even though female informal workers have dissimilar characteristics and vary in terms of activities and earnings, women who work in the informal sector in Brazil have on average lower earnings and higher poverty levels than women who work in the formal sector. Female headed households have increased in the more disadvantaged work statuses and poverty among females has also increased. The feminization of poverty is more prevalent in the informal sector. Women in the informal sector are more vulnerable than women in the formal sector. They earn less

income and have less mobility opportunities, rights and social protections. Consequently, there are higher chances are that they will remain impoverished.

Notes for Future Research

The results provided in this study are not conclusive but provide a good picture of many aspects of the participation of Brazilian women in the labor market. Even though it included many of the most important characteristics that are involved in determining the involvement of women in the formal or informal sectors, it would have been better if additional data, especially with regards to race and tenure, had been available. Information about informal micro entrepreneurs as part of the informal sector will also help in the analysis.

Conclusion

The purpose of this study was to examine the participation of women by sector in the Brazilian labor market in 1996 and 2005. The idea was not to expose all the characteristics of the female informal sector or investigate in detail what drives women to work in the informal sector, but to get a better picture of how this sector has changed over this time period as a result of the social and economic changes that happened in Brazil.

The results indicate that there is indeed a dual labor market in Brazil. The presence of a large share of women work in the informal sector and their disadvantaged condition as informal workers support this idea. The globalization phenomenon and adoption of neoliberal practices in the country during the 1990s have exacerbated the labor market division and underprivileged condition of women. Changes in how the female labor force is structured point in that direction.

Overall, female work is affected by capitalism and by patriarchal forces that are embedded in labor markets. Hiring women informally is a tactic used by employers to reduce costs and increase competitiveness in a market where globalization, trade liberalization and flexible production have made it more difficult for firms to survive and profit. When firms hire women informally they offer low wages and do not need to comply with labor legislation. The feminization of the informal sector contributes to the marginalization of women's work and reinforces the social construction of women as less reliable and less valued workers. Women's reproductive roles in the society and their productive roles in the labor market are intrinsically related. Women's experience is shaped by these two forces. By paying low wages, firms reinforce women's dependence on men and their families, and lower women's likelihood to invest in their human capital and increase their possibilities for advancement. In the long run, it makes it more difficult for the country to achieve greater levels of development.

This study suggests that theories need to be combined in order to investigate the dynamics of informal labor markets in developing countries. Regional differences may play a big role in how the informal sector relates to the formal sector in the economy and how gender relations develop within it. In the Brazilian case, structural and dual economy approaches can both help explain the existence and functioning of the informal sector, but these two theories need to be pulled together. As for the legalist theory, it may also apply to one specific group of informal workers, the highly educated self-employed and the small entrepreneurs. More research has to be done with this.

The results presented here show that policies aimed to reduce poverty need to take into consideration the female heads of households who work in the informal sector, as the link between female headship, informal sector work and poverty appears to be strong.

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