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## WHY DO SO MANY WOMEN END UP IN BAD JOBS? A CROSS-COUNTRY ASSESSMENT

by

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## PREFACE

This paper addresses the important, yet under-researched phenomenon of a “feminization of bad jobs”. By using an innovative new composite indicator measuring the degree of social discrimination against women – the OECD’s Development Centre’s Social Institutions and Development Index (SIG), the authors find that employment outcomes of women indeed often depend on the socio-economic environment shaped by long lasting norms, social values and traditions. The findings of the authors urgently call for a more broad-based policy approach in the area of labour markets and social protection. In order to allow women to take full advantage of their capabilities, addressing issues such as “son preference” and civil liberties constraining women’s physical movement needs to be addressed.

This work marks the beginning of a series of papers using the SIGI index in economic analysis. In the last years the OECD Development Centre has been focussing intensively on further developing its Gender, Institutions and Development Data Base, the creation of the composite index SIGI as well as the introduction of a participatory tool for exchange and discussion on gender – WIKIGENDER. While the Centre will continue this work and enlarge the SIGI index within the next years to include also OECD countries, we will increasingly make use of this new tools in economic and social analysis. With the help of these analysis we aim to influence and shape a more informed policy dialogue on gender and development.

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January 2010

## RÉSUMÉ

On se préoccupe de plus en plus de la « féminisation » des mauvais emplois dans les pays en développement. Les analyses récentes montrent qu'il y a un pourcentage croissant de femmes qui ont des emplois caractérisés par de mauvaises conditions de travail et un faible salaire. Quelle est la cause de ce phénomène ? Ce document traite ce sujet en étudiant le rôle des institutions sociales, c'est-à-dire des traditions, des normes sociales et des lois informelles, dans la détermination des résultats qu'obtiennent les femmes sur le marché du travail. En appliquant le nouvel indicateur de l'OCDE en usage SIGI (social institutions and gender index) à 44 pays en développement, nous trouvons que les institutions sociales influencent dans une large mesure les genres d'activité et la qualité des emplois pour les femmes. Nos résultats suggèrent qu'il est crucial de traiter le problème de la discrimination sociale envers les femmes pour améliorer leurs chances d'accès à un bon emploi dans les pays en développement.

**Classification JEL :** D63, H1, J16, J21, J43, J8, F16

**Mots clé :** Institutions sociales, SIGI, égalité homme-femme, qualité de l'emploi, marché du travail, agriculture

## ABSTRACT

There is an increasing concern in the development community about the increase in the 'feminisation of bad jobs' of many developing countries. Indeed, recent analysis shows a growing proportion of women are in jobs with poor working conditions and low pay. But what is driving this phenomenon? This paper addresses this issue by looking at the role of social institutions, i.e. traditions, social norms and informal laws, in shaping labour market outcomes. By applying the newly established Social Institutions and Gender Index (SIGI) of the OECD on 44 developing countries, the paper finds that social institutions influence to a great extent activity patterns and job quality for women. Our results suggest that addressing discriminating social institutions is crucial for advancing gender equality.

**JEL Classification:** D63, H1, J16, J21, J43, J8, F16

**Keywords:** Social Institutions, SIGI, gender inequality, job quality, labour markets, agriculture

## I. INTRODUCTION

This paper addresses the increasingly important issue of the “feminisation of bad quality jobs”. In many developing countries undergoing an industrialisation process, an impressive number of new jobs has been created in the last decades. At the same time, many of these new jobs are characterised by poor working conditions, low levels of pay, no access to formal social security and limited chances to climb up the social ladder. The majority of these “bad quality” jobs have been taken up by women. Consequently, the gender gap in job quality is increasing (c.f. Standing, 1999; OECD, 2009).

Understanding this phenomenon has become a priority for many developing countries and donor agencies. However, discrimination against women is not a new problem: for a long time, women have been facing barriers to good jobs, especially in developing countries. Nevertheless, the gender discrimination in terms of job quality is worsening. Recently, new jobs have been created for example in the export industries, but as most of the good jobs have been reserved to men, women have not benefited as men from these opportunities. An INED report (INED, 2000) shows that women not only have less access to the labour market in general, but they also face more difficulties to find good jobs in the formal sector. Consequently, women’s labour participation rates are lower than men’s, women are overrepresented in certain sectors that are characterised by bad working conditions (for example unskilled, temporary and/or informal work in agriculture) and women’s working status is often lower than men’s (for example, women work rarely as technical, professional wage-earners or employers but rather as contributing family workers).

In order to explain the feminisation of bad jobs in developing countries, a series of studies refer to the fact that women generally have less education and less training than men and that women they are less productive because of their absenteeism and rotation due to maternity and child rearing (c.f. UN, 2005; Medeiros and Costa, 2007; Fontana and Paciello, 2009; OECD, 2009). Other studies emphasise that that it is very difficult for women to start their own business due to their lack of capital and access to credit and that women face barriers to education and employment due to specific handicaps like unsafe travel or insufficient facilities (c.f. World Bank, 2001; Klasen, 2002; Klasen and Lamanna, 2009). Most of these studies, as for example Glick and Sahn (1997), use education measured by years or completed cycle (none, primary, secondary) as main explicative variable in their econometric analysis. Moreover, traditional attitudes are often cited as an important obstacle, because they result in the fact that, for example, male employers despise female workers or women have lower career aspirations. However, these cultural barriers have never been explicitly measured so far. Social discrimination against women so far only appears as a residual in the regressions, as the unknown part of the story.

The novelty of this paper is that we take explicitly into account the role of social institutions discriminating against women. We define social institutions as evolved practices with stable rules of behaviour that are outside the formal system and that deprive women from their basic freedoms (c.f. Sen, 2007) and consider them as critical for various development outcomes (c.f. Jütting *et al.* 2007). We quantify these social institutions and estimate their impact on the gender bias in job quality in developing countries.

We measure social institutions related to gender inequality by using the recently published OECD Social Institutions and Gender Index (SIGI), which is based on 12 institutional variables, ranging from ownership rights to civil liberties, son preference, the family code and physical integrity (c.f. Branisa *et al.* 2009a). Branisa *et al.* (2009b) find that social institutions measured by the SIGI are associated with higher fertility, child and infant mortality rates as well as with lower female secondary education and inhibited good governance. In this paper, we follow the econometric methodology of Branisa *et al.* (2009b) but concentrate on a different outcome variable by focusing on the gender bias in job quality. We find that social institutions are one of the main driving forces for the “feminisation of bad jobs” as they determine women’s activity patterns and their working conditions. Patriarchal traditions and norms constrain women’s activities, for example by not allowing them to start their own businesses, by refusing them to do jobs in which they are in contact with (or are managing) men, by restricting their access to land and other property or by simply forbidding them to leave the house alone or without men’s permission. By that means, social institutions also restrict women’s access to education and information.

We measure the “feminisation of bad jobs” in three different ways as its manifestation varies with the countries’ development stage. Women’s labour market participation is our first, very general measure of women’s job quality, as it reflects women’s economic empowerment. Then we measure women’s job quality by the occupational segregation by gender: we use the gender bias in occupations by sectors as second measure and the gender bias in occupations by working status as third measure of women’s job quality. A short comparison between two groups – one (Brazil, Chile, Colombia and Costa-Rica) with very low levels of social discrimination against women (SIGI 0.01 to 0.02), the other (Egypt, Iran and Yemen) with a relatively high level of social discrimination against women (SIGI 0.22 to 0.33) – already reveals strong differences regarding our three measures of the “feminisation of bad jobs”: for example, the average female labour participation rate reaches 0.50 in the four Latin American countries and only 0.25 in the three countries of the Middle East. Furthermore, the occupational segregation by gender is much stronger in the Middle East than in the Latin American countries. In Chile for example, only 5.4 per cent of employed women work in agriculture (against 17.6 per cent men) whereas in Egypt 39 per cent of women work in agriculture (against 27.7 per cent men). Finally, in the three Middle East countries, on average 43 per cent of working women are contributing family workers (against 7.5 per cent men), but in the four mentioned Latin American countries, on average only 5 per cent of working women work as contributing family workers (against 3 per cent men).

Our empirical cross-country analysis, based on observations of over 40 countries from six different regions, confirms our hypothesis that social discrimination against women leads to a

feminisation of bad jobs. We find clear evidence that social institutions hinder women's participation in the labour market. Furthermore, our empirical investigation confirms a positive correlation between social institutions and gender segregation by sectors, suggesting that social institutions often confine women to the agricultural sector and hinder their progress towards jobs in industry or the service sector that often (not principally) offer better working conditions and higher pay. Moreover, our estimation results confirm that social institutions increase the proportion of women working as contributing family workers, where they are subject to the orders of the head of family and without income and independence. In addition, we find that social institutions hinder women from working as employees and employers; jobs that often offer better working conditions, higher pay and more independence.

The outline of the paper is as follows: Section II presents a stylised picture of the "feminisation of bad jobs". In Section III, we present the Social Institutions and Gender Index (SIGI) as measure for social institutions and we empirically test our hypothesis that social institutions are a key driver for the gender bias in job quality. We estimate the impact of social institutions on women's labour market participation as well as on the gender segregation by sectors and by working status. Finally, Section IV concludes by summarising the main findings, outlining ways of policy and donor interventions and identifying axes of future research.

## II. THE MANIFESTION OF THE FEMINISATION OF BAD JOBS

Measuring job quality is a difficult undertaking, because the indicators differ mainly with the countries' economic development stage. In developing countries, the most widely used indicator of job quality is the formality status of a job. However, taking informality as a definition for bad job quality does not go far enough, especially when one is interested in the gender gap in job quality. First of all, social discrimination against women may hinder women from working even on an informal basis. Secondly, in developing countries with low income levels, large parts of the population work, either formally or informally, in agriculture. Hence, in those countries job quality is best measured by women's and men's working status, i.e. work as contributing family workers, employees, employers or own account workers. In industrialising countries in contrast, job quality is less a matter of working status, but more a matter of occupation by sectors, as work in industry and services in general offers better working conditions and higher pay than work in agriculture. In order to capture these different manifestations of job quality, we measure the feminisation of bad jobs in three different ways: women's labour market participation, the gender segregation by sectors and the gender segregation by working status. We do not calculate the Duncan index of dissimilation in order to not weaken the clarity and transparency of our response variables.

After portraying a global picture of these three proxies of the gender bias in job quality, we present the OECD's composite Social Institutions and Gender Index (SIGI), which quantifies the phenomenon. The data on the feminisation of bad jobs and on social discrimination against women is available for 44 developing countries. The countries range over six regions, which are Europe and Central Asia (ECA), sub-Saharan Africa (SSA), East Asia and the Pacific (EAP), Latin America and the Caribbean (LAC), South Asia (SA) and Middle East and North Africa (MENA). Table A in the Appendix shows a list of all observed countries.

### II.1 Female Labour Market Participation

Measures of female labour market participation are often not comparable across countries as definitions and measurement concepts of women's labour market participation differ in quality and coverage (c.f. Bardhan and Klasen, 1999). In addition, measurements disaggregated by gender are often incomplete and inconsistent in terms of time. As Goldin (1994) emphasises, there are few consistent data series on employment by gender, especially for developing countries. Hence, concentrating on a single measure of female labour market participation bears the risk of obtaining biased data due to problematic statistical and conceptual practices. In order to reduce this risk, we use three alternative measures of female labour market participation:

- The female labour force as percentage of the total labour force (FLF)
- The female labour participation rate as percentage of female working age population (ages 15+) (FLPR)
- The ratio of the female labour participation rate as percentage of female working age population to the male labour participation rate as percentage of male working age population (RLPR)

However, even when using three different measures of female labour market participation, we cannot circumvent the fact that our measures are still subject to measurement errors. This is mainly due to the fact that our three measures of female labour market participation do not account for informal work. Hence, our measures of female labour market participation risk being underestimated, because female work is often informal and therefore unrecorded. Non-paid work and independent work are rarely included in the statistics. This holds especially for women's subsistence activities in the agricultural sector in developing countries (c.f. Chen *et al.*, 1999; Chen *et al.*, 2005), but also for domestic and family-related activities (c.f. Waring, 1988; Klasen, 2002). On the other hand, increases in female labour market participation risk being overestimated because female labour in the formal sectors may substitute unrecorded female labour as well as housework and caring activities (accounting effect).

For all three measures of female labour market participation, data are drawn from the World Bank's World Development Index Data Base (2009). We choose to take the average of the existing values over the last five available years (2003-2007), which smoothes out short-term fluctuations and enables investigations on a cross-country basis. All measures of labour market participation contain workers aged 15 and older and include employed and self-employed workers as well as unemployed workers and first-time job-seekers. Furthermore, they generally include the paid workers in the agricultural sector, armed forces and seasonal or part-time workers. Yet they exclude homemakers and unpaid caregivers (c.f. Morrisson and Jütting, 2005).

Table 1 shows the regional average measures of female labour market participation, based on observations of 44 countries.

**Table 1. Summary Statistics: Measures of Female Labour Market Participation Percentages and Gender Ratio (Ø 2003-2007)**

	All Countries	ECA	SSA	EAP	LAC	SA	MENA
FLF %	41	47	46	42	40	28	26
FLPR %	52	53	64	57	53	38	23
RLPR (ratio)	0,68	0,81	0,83	0,74	0,66	0,44	0,32

FLF: Female Labour Force (% of total labor force)

FLPR: Female Labour Participation Rate (% of female population ages 15+)

RLPR: Ratio Female Labour Participation Rate / Male Labour Participation Rate

Source: World Bank (2009)

The female share of the labour force (FLF) measures the share of women in the total labour (including men), whereas the female labour participation rate (FLPR) measures the share of working women in the female working age population only. The female share of the labour force as percentage of the total labour force (FLF) varies between 18 per cent (Pakistan) and 51 per cent (Moldova) with a mean of 41 per cent over all 44 observed countries. The female labour participation rate (FLPR) varies between 14 per cent (Iraq) and 82 per cent (Madagascar) with a mean of 52 per cent over all countries. In all 44 countries, the ratio of the female to the male labour participation rate (RLPR) lies under 1 (0.68 on average), indicating that in all countries relatively fewer women than men are economically active. Here again, Iraq (0.19) and Madagascar (0.93) are the extremes. The gender gap labour participation rates is the lowest in sub-Saharan Africa, followed by Europe and Central Asia and East Asia and the Pacific. The gender gap is by far the highest in the Middle East and North Africa.

## II.2. Gender Segregation by Sectors

The gender segregation by sectors is measured by the following three relative ratios:

- The ratio of female employees in agriculture as percentage of female employment to male employees in agriculture as percentage of male employment (Ratio\_EmpAgr)
- The ratio of female employees in industry as percentage of female employment to male employees in industry as percentage of male employment (Ratio\_EmpInd)
- The ratio of female employees in services as percentage of female employment to male employees in services as percentage of male employment (Ratio\_EmpServ)

Figure 1 shows the unweighted regional average measures of gender segregation by sectors. Table B in the Appendix shows the regional average measures of the size of the three observed sectors in terms of employment. The data is again drawn from the World Bank's World Development Index Database (2009) and contains the average values of the years 2003-07. Data on gender segregation by sectors and on the size of the sectors is available for 36 countries.

Figure 1. **Gender Segregation by Sectors in Relative Ratios (unweighted regional averages)**  
(Ø 2003-2007)



Figure 1 reveals that in all regions except South Asia, women are largely underrepresented in industry. The exception of South Asia is related to the importance of export-oriented textile manufacturing in some South Asian countries with a very high proportion of women in textile.

In South Asia and the Middle East and North Africa, women are largely overrepresented in agriculture. Over the last decades, in these countries the overall proportion workers in agriculture declined, but the relative ratio of female to male employees in agriculture has increased constantly, because it is mainly men who leave the agricultural sector for work in other sectors. Boserup (1970) calls this trend the “feminisation of agriculture”. However, over the last few decades women’s work in agriculture has not only effectively increased in these regions, but also has become more visible due to research and data collection that has attempted to measure more accurately women’s activities in rural areas.

In the other four regions, women are overrepresented in services. However, in these four regions, average figures for each region conceal exceptions: in some areas, the relative ratio of female to male employees in agriculture has increased significantly. For example in South Africa and some parts of Central and East Asia, women still tend to work in agriculture while men move to other sectors (c.f. Deere, 2005, Fontana and Paciello, 2009, Beneria, 2001, Lastarria-Cornhiell, 2003; Uni and Rani, 2000). In these areas, many married women have become the main agricultural workers in recent years, whereas men migrate out of agriculture, at least after ploughing and before returning for the harvesting season. Even in Latin America, where women work mainly in services, over the last years a feminisation of agriculture can be observed for some productions like fruit in Chile’s central valley, vegetables in Mexico, vineyards in Brazil, or flowers in Colombia (c.f. Lastarria-Cornhiell, 2006; Deere, 2005).

Nevertheless, Lastarria-Cornhiel (2006) emphasises that while more and more women work in the agricultural sector in many countries, the small proportion of permanent positions and in supervision and management in agriculture is overwhelmingly held by men.

In comparison to work in industry and services, agricultural work generally pays little, offers no or little social protection and is characterised by harsh working conditions (c.f. Fontana and Paciello, 2009; Deere, 2005)<sup>1</sup>. A series of case studies, for example for Mexico, Brazil, South Africa, the Philippines or China<sup>2</sup>, reveal that the increasing feminisation of agricultural occupations comes hand in hand with a feminisation of “bad quality” jobs, because workers in agriculture tend to be deprived of basic and natural resources as well as of institutional services, such as credit, market information or training, whereas workers in industry tend to have better access to education and training, new technologies and market information. Moreover, as the case studies also reveal a significant discrepancy in income, job security and working conditions between the agricultural and the industrial sector, one can conclude that as women are more likely to be stuck in the agricultural sector than men, women are disproportionately employed in low-quality jobs.

### II.3. Gender Segregation by Working Status

For countries with large agricultural sectors, such as those in sub-Saharan Africa for example, about as many men as women work in agriculture. Consequently, in these countries the gender bias in job quality is better measured using the gender segregation by working status.

Intra-household decision models suggest that in many rural societies, it is mostly men who control access to productive resources and decide on the allocation of money between different household members and expenditure items (c.f. Haddad and Hoddinott, 1994, 1995; Thomas, 1990) – often leaving women with the task of spending on food, education, health and clothing. An example is a household where the husband looks after the production of cash crops, which bring in an income, while the wife takes care of food crops grown for family consumption. In this way, the wife depends on the husband’s allocation of money within the household. Another example is the case where the wife may help her husband with farming but is not paid for her work and consequently lacks job security, social protection and self-determination (c.f. Lastarria-Cornhiel, 2006; Carr and Chen, 2001; OECD, 2009). For example in Uganda in the late 1990s, women put in as much labour as men in vanilla production, but received only 10 per cent of the receipts. In Kenya, the exported beans are produced mainly by women on usufruct parcels, but it is their husbands who sell the production. As a consequence, women supply up to three-quarters of labour but receive only 38 per cent of the payment. This means that a man’s hour of work is paid up to five times more than a woman’s hour of work (c.f. Lastarria-Cornhiel, 2006). The development of cash crops can even worsen the living conditions for women as women work as contributing family workers on their husband’s fields while they still have to

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<sup>1</sup> Of course, the quality of work for women is not better in service and industry in principle. One might think for example of the bad working conditions and the low pay for women in sectors like for example the export-oriented manufacturing sectors in South-East Asia (c.f. Seguino, 2000, 2005).

<sup>2</sup> <http://www.fao-ilo.org/more/workshop/papers/en/>

collect water and fuel, care for children and take in charge their food crops for family at the same time. Fontana and Paciello (2009) show for Kenya that the participation of women in sugar production has entailed a decrease of their body mass index because additional work exceeded the increase in caloric intake. In the same country, most women belonging to tea-producing households have a high level of malnutrition because they have not enough time for their own crops, whereas husbands tend to spend the income from tea for their own consumption. Poor working and living conditions for female contributing family workers are the consequence of continuous gender inequality: women often do not receive any income from cash crops whereas they supply a large part of the needed labour. In six African countries (Cameroun, Ghana, Namibia, Nigeria and Rwanda) one-third of women who are contributing family workers do not receive any monetary income from these crops. In Egypt and Morocco this percentage reaches 50 per cent (c.f. INED, 2000). The fact that husbands often keep the receipts of crops partially produced by women is the main factor of inequality between the farmers and their wives.

Consequently, in many rural societies one can observe a significant gap in the working status between men and women. International Labour Organization (ILO) statistics classify the working status in four main categories: employers, employees, contributing family workers and own-account workers.

The status of an employer can generally be classified as a “good quality” job because by definition the employer is in a position to pay one or more employees. Studies of the informal sector and recent data on informal employment (c.f. Morrisson *et al.*, 1994; OECD, 2009) reveal that employers in the informal sector often earn more than employees in the formal sector. Nevertheless, in comparison to a contributing family worker, a job as an employee still can be classified as a “good quality” job, whereas the status of contributing family workers can be considered a “bad quality” job given that the person has no formal entitlement to pay and risk protection and hence fully depends on family members (c.f. Carr and Chen, 2001; Uni and Rani, 2000). The job quality of own account workers is difficult to classify, because on the one hand own account workers are independent and mostly dispose of their own property and income, but on the other hand they still work without formal entitlement and risk protection. Consequently, we ignore own account workers and consider work as employers and employees as “good jobs” and work as contributing family workers as “bad job”.

The gender segregation by working status among all workers is measured by the following three relative ratios:

- The ratio of the share of female contributing family workers among female workers to the share of male contributing family workers among male workers (familywR)
- The ratio of the share of female employees among female workers to the share of male employees among male workers (employeesR)
- The ratio of the share of female employers among female workers to the share of male employers among male workers (employersR)

Figure 2 shows the regional average measures of gender segregation by working status in all sectors. Table C in the Appendix shows the regional average measures of employment by status as a share of total employment. For the majority of countries, data are drawn from the ILO

Labour Force Survey. The data set contains yearly observations dating from 1999 to 2007 depending on the country. For some countries the data are completed by Population Census Data. Altogether, data on gender segregation by working status and on employment by status as share of total employment is available for 36 countries.

Figure 2. Gender Segregation by Working Status in Relative Ratios  
(yearly observations 1999-2007)

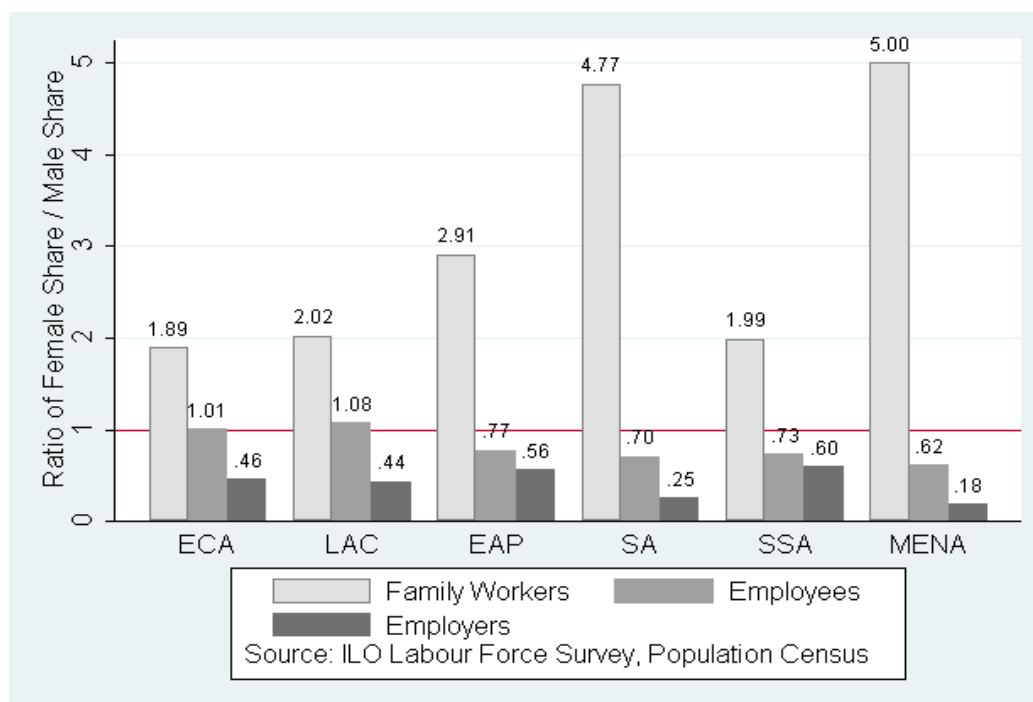


Table C shows that in all 36 observed countries, on average the share of employers among workers (employers\_perc) is very low (5 per cent), whereas the share of employees among workers (employees\_perc) is relatively high (almost 50 per cent). Contributing family workers form the majority of workers in South Asia only. Figure 2 shows that for all regions, the average relative ratio of female to male contributing family workers (familywR) is by far the highest compared to the relative ratio of female to male employees (employeesR) and employers (employersR). In all observed regions, the relative ratio of female to male contributing family workers is larger than one, implying that women are overrepresented as contributing family workers. On aggregate for the 36 observed countries, the share of female contributing family workers among female workers is more than twice as high as the share of male contributing family workers among male workers. The relative ratio of female to male contributing family workers is the highest in the Middle East and North Africa as well as in South Asia. The relative ratio is 7.59 in Yemen and 6.22 in Bangladesh. At the same time, in all regions except of Latin America and the Caribbean (1.08), the relative ratio of female to male employers is smaller than one, implying that relatively more men than women work as employers. In comparison to contributing family workers and employers, the gender composition among employees is rather

well balanced, especially in Europe and Central Asia as well as in Latin America and the Caribbean, but with the exception of Middle East and North Africa.

The high relative ratio of female to male contributing family workers and the low relative ratio of female to male employers show a clear pattern of gender inequality in terms of working status. The fact that women are relatively overrepresented as contributing family workers implies that women are over-represented in the most vulnerable jobs in informal occupations. Work as contributing family workers allows women to combine work with family care, but these jobs have no pay, no income security and poor working conditions. Men in contrast are more likely to work as employers, which pays and offers self-determination and independence. Consequently, our data on gender segregation by sectors clearly implies that women are overrepresented in “bad quality” jobs, whereas men are overrepresented in “good quality” jobs.

### III. THE IMPACT OF SOCIAL INSTITUTIONS ON THE FEMINISATION OF BAD JOBS

While in the previous Section we demonstrated that in many regions of the world one can clearly observe a “feminisation of bad jobs”, in this Section we are concerned about the driving forces behind this phenomenon. We empirically test the hypothesis that social institutions significantly contribute to the growing proportion of women in jobs with poor working conditions and low or no pay. We first present the Social Institutions and Gender Index (SIGI) as measure for social institutions (III.1) as well as our data and estimation model (III.2). We start our empirical analysis by estimating the impact of the SIGI (and its five sub-indices) on women’s labour market participation (III.3) to see whether social institutions generally affect women’s activity patterns. Then, to test our hypothesis that social discrimination against women leads to an overrepresentation of women in “bad jobs” and an underrepresentation of women in “good jobs”, we estimate the impact of the SIGI and its sub-indices on the gender segregation by sectors (III.4) and on the gender segregation by working status (III.5).

#### III.1. Social Institutions as Determinants for Social Discrimination against Women

Social institutions are measured by the new OECD Social Institutions and Gender Index (SIGI), which puts a number on patriarchal norms, rules, code of conducts, laws and traditions that produce inequalities between women and men. The five components of the SIGI – ownership rights, civil liberties, son preference, family code and physical integrity each measure one dimension of the underlying concept. The SIGI and the sub-indices are constructed by Branisa, Klasen and Ziegler (2009a) using variables from the OECD Gender, Institutions and Development Database (Morrisson and Jütting, 2005; Jütting *et al.*, 2008)<sup>3</sup>.

The family code sub-index refers to institutions that influence the decision-making power of women in the household and includes measures of parental authority, inheritance rights, early marriage and polygamy. The civil liberties sub-index captures the freedom of social participation of women and includes measures of freedom of movement and freedom of dress. The physical integrity sub-index comprises different indicators on violence against women like domestic

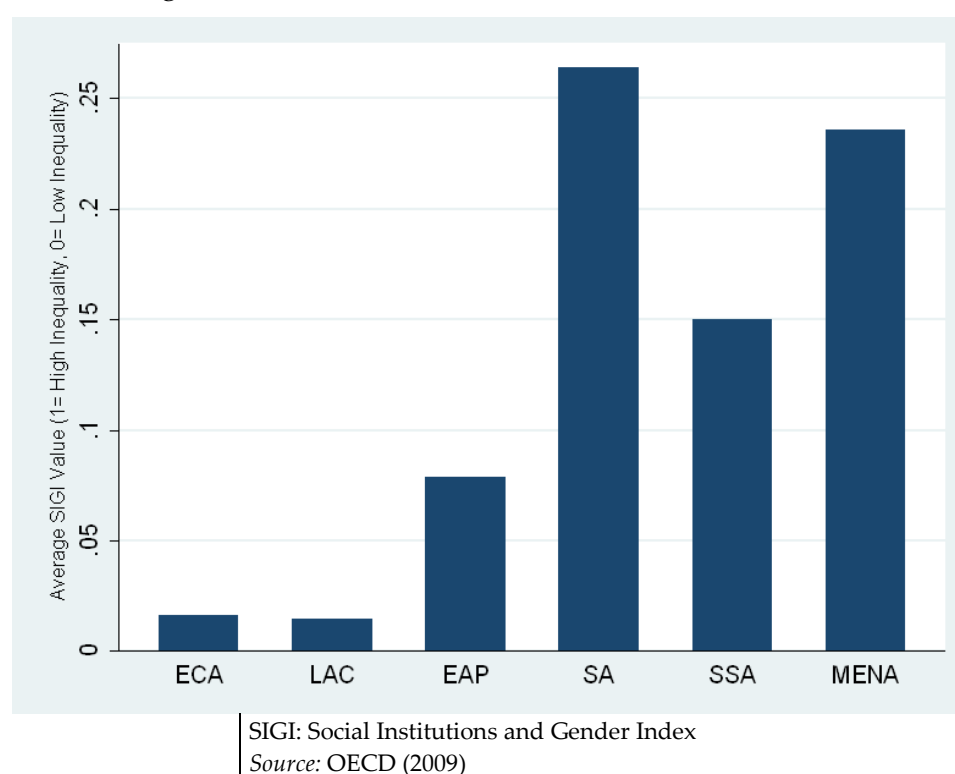
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<sup>3</sup> The data cover more than 100 countries and are available at the web-pages <http://www.wikigender.org> and <http://www.oecd.org/dev/gender/gid>. See [www.genderindex.org](http://www.genderindex.org) for more information about the SIGI (methodology, country notes, country ranking, analysis...). There you also find technical information about the construction of the index (calculation of the SIGI based on five sub indices Branisa *et al.*, 2009a).

violence, sexual assault or rape, sexual harassment as well as female genital mutilation. The son preference sub-index reflects mainly the economic valuation of women by measuring the gender bias in mortality. The ownership rights sub-index covers the access of women to several types of property like women's access to land, women's access to bank loans and women's access to property other than land.

In all cases, the variables are between 0 and 1. The value 0 means no or very low inequality and the value 1 indicates high inequality. Figure 3 shows the regional average measures of the SIGI. Table D in the Appendix shows the regional average measures of the five SIGI sub-indices. Data on the SIGI and its sub-indices are based on observations for 44 countries.

Figure 3. Social Institutions and Gender Index (SIGI)



The SIGI indicates high levels of social discrimination against women in South Asia and the Middle East and North Africa, whereas Latin America and the Caribbean as well as Europe and Central Asia show relatively low SIGI scores. Sierra Leone, Yemen, Iran, Pakistan and Iraq are the five countries with the highest social discrimination against women; Paraguay, Croatia, Kazakhstan, Argentina and Costa Rica are on the bottom of the list.

On average for all 44 countries, the sub-indices suggest that women are mostly discriminated by the violation of their physical integrity. In the Middle East and North Africa, women are mostly discriminated by limited civil liberties as limited freedom of movement and limited freedom of dress (obligation to wear a veil). In South Asian countries, a significant number of missing women indicates that women are mostly discriminated by son preference. The civil liberties discrimination is also very high in this region. In sub-Saharan African

countries, women suffer the most from limited ownership rights that result in restricted access to land, bank loans and property other than land.

### III.2. Data and Modelling

We estimate the impact of social institutions discriminating against women on the gender bias in job quality by using the SIGI quantitative variable for social institutions. We consider social institution as independent variable because they are relatively stable and long lasting. We estimate the impact of SIGI on women's participation in the labour market as well as on the gender segregation by sectors and by working status. As usual in econometric analysis we control for other variables which are likely to have an impact on labour market outcomes, provided they are exogenous. For example, we do not use on-the-job training experience (a handicap for women according to Scott, 1986) or access to credit (a handicap for women according to Glick and Sahn, 1997) because these factors are not exogenous: job experience results from the value of SIGI in the past and a sub-index of SIGI includes access to credit. However, we take into account GDP per capita which we consider as rather exogenous (social institutions can entail a gender bias in job quality in poor as well as in relatively rich countries). When estimating the impact of the SIGI on women's labour market participation, we include also the squared form of GDP per capita, as the "feminisation U" hypothesis by Boserup (1970) suggests a convex impact of economic development on women's labour market participation. This convex impact has been confirmed empirically by Mammen and Paxson (2000) who show that women's participation in the labour market first declines and then increases with development. Moreover, we expect that the gender bias in job quality measured by occupations by sectors and by working status decreases with economic development (c.f. Morrisson and Jütting, 2005).

For our empirical investigation, we use macro-data at the country level. Table E in the Appendix includes the description and sources of all variables used in this paper and Table F in the Appendix shows a summary of these statistics.

First, we are interested in the impact of the SIGI and its sub-indices on women's labour market participation, spanning all sectors and every status.

To smooth out measurement problems, we use three alternative specifications for female labour market participation as endogenous variable, which is the female share of the labour force (FLF), the female labour participation rate (FLPR) and the ratio of female to male labour participation rates (RLPR). This procedure also controls for the robustness of our empirical findings.

We control for the level of economic development by adding the natural logarithm of GDP per capita (constant 2005 international USD) in purchasing power parities ( $\ln\text{GDP}$ ) as exogenous variables to the regression model. We also add its square ( $\ln\text{GDP}^2$ ) as exogenous variable, which allows us to capture nonlinear effects of economic development. We also include

women's gross secondary school enrolment in per cent (EDU) as exogenous variable<sup>4</sup> in order to attenuate omitted variable bias. Given the fact that we have only a relatively small number of countries in our data sample, we do not include regional dummy variables as they would capture too much of the variation.

To estimate the impact of social institutions on the female share of the labour force (FLF), we use the following regression model:

$$FLF_i = \alpha + \beta_1 SIGI + \beta_2 \ln GDP + \beta_3 (\ln GDP)^2 + \beta_4 EDU + \varepsilon_i$$

Data on female labour market participation and the additional exogenous variables are drawn from the World Bank World Development Indicators Data Base (2009) and represent the average values for the years 2003 to 2007. We use average values for these variables because the social institutions indicators are available on a cross-country basis and are not expected to change over time. The averages spanning five years allow taking into account possible time delays of the impact of social institutions on the endogenous variables. The averages also allow reducing possible endogeneity problems caused by an inverse causality between social institutions and female labour market participation. In the case of a two-way causality between the exogenous and the endogenous variables, the estimation would produce biased and inconsistent regression coefficients. For this reason, we do not include fertility as an exogenous variable.

Firstly, we empirically test whether the SIGI has an impact on female labour market participation after controlling economic development and education. Secondly, we include the five sub-indices of the SIGI in the regressions (one by one) to empirically test whether the sub-indices have an impact on female labour market participation after controlling economic development and education.

We first estimate our regression with OLS. To deal with heteroscedasticity we re-estimate the model using a bootstrap with 1000 replications, which computes a bias-corrected and accelerated 95 per cent confidence interval of the OLS-coefficients. In addition, we re-estimate the model using heteroscedasticity-consistent standard errors. As recommended by Branisa *et al.* (2009b) for small samples, we use hc3 robust standard errors proposed by Davidson and MacKinnon (1993). Nevertheless, we acknowledge that it is almost impossible to entirely rule out the problem of obtaining biased estimators caused by omitted variables, heteroskedasticity and endogeneity. In addition, one must be aware that causality cannot be derived from cross country regressions alone.

To empirically test whether social institutions affect the gender segregation by sectors, we then estimate the impact of the SIGI and its sub-indices (one by one) on the relative ratio of female to male employment in agriculture (Ratio\_EmpAgr), in industry (Ratio\_EmpInd) and in

<sup>4</sup> We choose secondary instead of primary school enrolment because we suppose that women's opportunity costs of staying at home are higher for women with secondary education as they might earn more than women with primary school enrolment only.

service (Ratio\_EmpSv). Here, we control for economic development (lnGDP), fertility (FERT) and women's secondary education (EDU).

To empirically test whether social institutions affect the gender segregation by working status, we estimate the impact of the SIGI and its sub-indices (one by one) on the relative ratio of female to male contributing family workers (familywR), employers (employersR) and employees (employeesR). We again control for economic development (lnGDP), fertility (FERT) and women's secondary education (EDU).

### **III.3. The Impact of SIGI on Women's Labour Market Participation**

We first estimate the impact of the SIGI and its sub-indices on women's labour market participation measured by the female share of the labour force (FLF), the female labour participation rate (FLPR) and the ratio of female to male labour participation rates (RLPR). Table 2 shows the regression results with the SIGI as exogenous variable.

Table 2. Impact of SIGI on Female Labour Market Participation

Endogenous variable:	(1) Female share of the labour force (FLF)			(2) Female labour participation rate (FLPR)			(3) Ratio female/male labour participation rate (RLPR)		
	OLS with standard errors	OLS with bootstrap standard errors	OLS with hc3 robust standard errors	OLS with standard errors	OLS with bootstrap standard errors	OLS with hc3 robust standard errors	OLS with standard errors	OLS with bootstrap standard errors	OLS with hc3 robust standard errors
Regressors:									
<b>SIGI</b>	-41.80** (-3.51)	- (-3.60)	- (-3.69)	88.93*** (-3.74)	88.93*** (-3.85)	88.93*** (-3.78)	-0.913** (-3.15)	-0.913*** (-3.30)	-0.913** (-3.38)
<b>lnGDP</b>	98.60*** (-5.08)	98.60*** (-4.79)	98.60*** (-5.04)	156.6*** (-4.04)	156.6*** (-3.38)	156.6*** (-3.78)	2.282*** (-4.82)	-2.282*** (-4.73)	-2.282*** (-5.09)
<b>lnGDP<sup>2</sup></b>	5.640*** (4.83)	5.640*** (4.56)	5.640*** (4.77)	8.933*** (3.83)	8.933** (3.27)	8.933*** (3.64)	0.130*** (4.55)	0.130*** (4.47)	0.130*** (4.79)
<b>EDU</b>	0.181** (2.81)	0.181** (2.65)	0.181* (2.46)	0.0492 (0.38)	0.0492 (0.31)	0.0492 (0.29)	0.00381* (2.42)	0.00381* (2.20)	0.00381* (2.08)
<b>constant</b>	456.5*** (5.79)	456.5*** (5.50)	456.5*** (5.88)	732.6*** (4.65)	732.6*** (3.89)	732.6*** (4.47)	10.41*** (5.41)	10.41*** (5.36)	10.41*** (5.85)
Nb. of observations:	40	40	40	40	40	40	40	40	40
R-square:	0.57	0.57	0.57	0.50	0.50	0.50	0.55	0.55	0.55

t statistics in parentheses, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001

The results from the regressions presented in Table 2 show that the null-hypotheses stating no impact of the SIGI were rejected. Even when including heteroscedasticity-consistent standard errors, the SIGI has a significant negative impact on female labour market participation, regardless of whether female labour market participation is measured by the female share of the labour force (FLF), by the female labour participation rate (FLPR) or by the ratio of the female to the male labour participation rate (RLPR). This implies that social discrimination against women decreases the levels of female labour market participation. Regressions based on the sub-indices of the SIGI (results shown in Table G in the Appendix) show that the two sub-indices civil liberties and son preference are significantly associated with all measures of female labour market participation, suggesting that social discrimination against women in terms of civil liberties (freedom of movement, freedom of dress) and in terms of son preference significantly decreases female labour market participation.

The SIGI coefficient (as well as the two mentioned sub-indices) stays significant when controlling for economic advancement and education. Table 2 shows furthermore that female education has a significantly positive impact on the female share of the labour force (FLF) and the ratio of the female to the male labour participation rate (RLPR). Furthermore, lnGDP and the square of lnGDP are always found significantly associated with female labour market participation. The significant coefficients of lnGDP and of the square of lnGDP indicate that economic growth has a nonlinear impact on female labour market participation. The significantly positive coefficients of the square of lnGDP indicate a convex impact of GDP on female labour market participation. This means that growth lowers female labour market participation at low stages of economic development and increases it at higher stages. This finding is in line with the “feminisation U” hypothesis, again revealed by Boserup (1970). After Boserup (1970), most low-income countries are characterised by a large agricultural sector and high female labour market participation. When countries undergo a beginning economic growth process, female labour market participation declines. Urbanisation and industrialisation reduce the agricultural sector and polarise the working activities of men and women, as men move on to other sectors and women drop out of the labour market (dominating income effect). With further economic growth, women get more education and employment opportunities for women increase in other sectors than agriculture. Consequently, female labour market participation rises due to a dominating substitution effect.

The significantly negative SIGI-coefficients suggest that social institutions reduce women’s labour market activities for all stages of economic development and reinforce the decrease in women’s labour market participation during a country’s industrialisation process. The significant civil liberties sub-index suggests that, as social institutions hinder women from leaving the house in order to work outside the family and from achieving education, women’s working activities are limited to the agricultural sector. Consequently, in industrialising countries that are characterised by a reduction of the rural sector and a growing demand for labour mobility and technical skills, women drop out of the labour market. In addition, Goldin (1994) reveals that in many countries women’s working activities are limited to the agricultural sector because there is a social stigma against married women working in the blue collar sector. Manual occupations in factories are seen as “dirty and physical” labour and in patriarchal

societies a husband who lets his wife work in manual labour is seen by society as “lazy” and “incapable” of providing for his family. Moreover, in many patriarchal societies, women working outside home in factories where other men work are even considered as “immoral”. However, there is no social stigma against married women working in white collar sectors (in services: clerical work like office work, sales, teachers, nurses etc), mainly because clerical work requires higher education levels, which can be interpreted as a woman’s social “licence” to work for pay.

The analysis so far shows that social institutions, in particular parents’ son preference and women’s restricted civil liberties, significantly reduce women’s working activities. Furthermore, our results in line with Boserup’s “feminisation U” hypothesis make us suppose that social institutions might hinder women from leaving the agricultural sector because they limit women’s access to education and their freedom of movement among other things. The following section verifies whether empirical estimations confirm that social institutions affect the gender segregation by sectors.

#### **III.4. The Impact of SIGI on the Gender Bias in Job Quality Measured by Sectoral Occupations**

In many countries, women get stuck in the agricultural sector, whereas men move on to other sectors. We have seen in Section 2 that the “feminisation of agriculture” corresponds to a feminisation of “bad quality” jobs. We now empirically test whether social institutions affect the gender segregation by sectors by estimating the impact of the SIGI and its sub-indices on the relative ratio of female to male employment in agriculture (Ratio\_EmpAgr), in industry (Ratio\_EmpInd) and in service (Ratio\_EmpSv). Table 3 presents the regression results with the SIGI as exogenous variable.

Table 3. Impact of SIGI on Gender Segregation by Sectors

Endogenous variable:	(1) Relative ratio female/male employees in agriculture (Ratio_EmpAgr)			(2) Relative ratio female/male employees in industry (Ratio_EmpInd)			(3) Relative ratio female/male employees in service (Ratio_EmpSv)		
	OLS with standard errors	OLS with bootstrap standard errors	OLS with hc3 robust standard errors	OLS with standard errors	OLS with bootstrap standard errors	OLS with hc3 robust standard errors	OLS with standard errors	OLS with bootstrap standard errors	OLS with hc3 robust standard errors
Type of regression:									
Regressors:									
<b>SIGI</b>	3.179*** (4.46)	3.179*** (3.61)	3.179** (3.65)	0.532 (1.04)	0.532 (0.74)	0.532 (0.66)	-1.960*** (-3.90)	- (-3.49)	- (-4.00)
<b>lnGDP</b>	-0.211* (-2.40)	-0.211** (-2.88)	-0.211* (-2.66)	-0.119 (-1.84)	-0.119 (-1.54)	-0.119 (-1.39)	0.109 (1.71)	0.109* (2.36)	0.109* (2.44)
<b>EDU</b>	-0.00326 (-0.83)	-0.00326 (-0.66)	-0.00326 (-0.59)	0.00609* (-2.15)	0.00609* (-2.47)	0.00609* (-2.23)	0.00836** (2.99)	0.00836* (2.43)	0.00836* (2.22)
<b>FERT</b>	-0.282** (-2.98)	-0.282** (-2.88)	-0.282* (-2.55)	-0.134 (-1.97)	-0.134 (-1.65)	-0.134 (-1.51)	0.240** (3.58)	0.240*** (3.70)	0.240** (3.04)
<b>constant</b>	3.304*** (3.67)	3.304*** (3.71)	3.304** (3.47)	2.404*** (3.73)	2.404** (2.87)	2.404* (2.55)	-0.753 (-1.18)	-0.753 (-1.47)	-0.753 (-1.46)
Nb. of observations:	34	34	34	33	33	33	33	33	33
R-squared:	0.57	0.57	0.57	0.41	0.41	0.41	0.64	0.64	0.64

t statistics in parentheses, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001

The significant SIGI-coefficients in the first three and last three columns of Table 3 suggest that social institutions increase the relative ratio of female to male employees in the agricultural sector (Ratio\_EmpAgr) and decrease the relative ratio of female to male employees in service (Ratio\_EmpSv), even when including heteroscedasticity-consistent standard errors. This implies that high social discrimination against women makes it difficult for women to leave the agricultural sector and to work in service. Regressions based on the sub-indices of the SIGI (results shown in Table H in the Appendix) show that social discrimination against women in terms of son preference, civil liberties and physical integrity significantly increases the relative ratio of female to male employees in the agricultural sector and significantly decreases the relative ratio of female to male employees in service.

The impact of social institutions and its sub-indices on the relative ratio of female to male employees in industry is found to be insignificant. Table 3 suggests furthermore that fertility decreases the relative ratio of female to male employees in agriculture and increases the relative ratio of female to male employees in service, which may be due to the fact that women leave work in agriculture at the arrival of children and either drop out of the labour market or find less physical jobs in the service sector. Female education significantly increases the relative ratio of female to male employees in service and significantly decreases the relative ratio of female to male employees in industry. This may be due to the fact that female education enables women to leave physical labour in the agricultural and the industrial sector as well as home and care work for work in white collar sectors as services. Hence, education seems to be a *sine qua non* condition for women to work in service. Economic development turns out to have a significantly negative impact on the relative ratio of female to male employees in agriculture and a significantly positive impact on the relative ratio of female to male employees in service. This speaks in favour of Boserup's (1970) hypothesis that economic growth reduces employment opportunities for women in the agricultural sector but creates new jobs for women in other sectors like the service sector.

Table 3 also shows that the explanatory power of the SIGI coefficients is by far higher than of the coefficients of the control variables. This suggests that that women tend to be clustered in agriculture mainly due to patriarchal social norms, conservative cultural norms and existing institutional systems that hinders them from having access to education and training. Patriarchal norms and practices also impede women from working outside the house because work outside the house conflicts with women's family responsibilities and the social restrictions placed on women's mobility (c.f. Morrisson and Jütting, 2005; Agarwal, 2003; Rebouche, 2006). In patriarchal societies, women often have no right to leave the house for work in industry or services and can only work in the fields, as there they are among other women only and can be observed by their male family members. Consequently, women hardly have access to jobs in other sectors outside agriculture that generally offer better pay, more income security and better working conditions. For this reason, social institutions contribute significantly to the feminisation of "low-quality" jobs.

### **III.5. The Impact of SIGI on the Gender Bias in Job Quality Measured by Working Status**

As for low-income countries with large agricultural sectors it is not sufficient to measure the gender bias in job quality by sectoral occupations alone, we now estimate the impact of social institutions on the gender bias in job quality measured by the gender segregation by working status in all sectors.

We estimate the impact of the SIGI and its sub-indices on the relative ratio of female to male contributing family workers (familywR), employers (employersR) and employees (employeesR). We consider work as a contributing family worker unambiguously as a “bad job” and work as an employer unambiguously as a “good job”. The job quality of an employee is considered as “good” in comparison to work as a contributing family worker. To confirm our hypothesis that social discrimination against women leads to an overrepresentation of women in “bad jobs” and an underrepresentation of women in “good jobs”, the SIGI and its sub-indices must have a significantly positive impact on the relative ratio of female to male contributing family workers and a significantly negative impact on the relative ratio of female to male employers and employees. The regression results with the SIGI as exogenous variable are shown in Table 4.

Table 4. Impact of SIGI on Gender Segregation by Working Status

Endogenous variable:	(1) Relative ratio female/male contributing family workers (familywR)			(2) Relative ratio female/male employers (employersR)			(3) Relative ratio female/male employees (employeesR)		
	OLS with standard standard errors	OLS with bootstrap standard errors	OLS with hc3 robust standard errors	OLS with standard standard errors	OLS with bootstrap standard errors	OLS with hc3 robust standard errors	OLS with standard standard errors	OLS with bootstrap standard errors	OLS with hc3 robust standard errors
Type of regression:									
Regressors:									
<b>SIGI</b>	13.58*** (4.61)	13.58*** (4.01)	13.58*** (3.87)	-0.983* (-2.17)	-0.983 (-1.96)	-0.983* (-2.40)	-1.176* (-2.05)	-1,176 (-1.52)	-1,176 (-1.83)
<b>lnGDP</b>	0.334 (0.86)	0.334 (0.75)	0.334 (0.64)	-0.0359 (-0.60)	-0.0359 (-0.75)	-0.0359 (-0.74)	0.0392 (0.51)	0.0392 (0.53)	0.0392 (0.56)
<b>EDU</b>	-0.00526 (-0.31)	-0.00526 (-0.37)	-0.00526 (-0.36)	0.00210 (0.81)	0.00210 (0.62)	0.00210 (0.58)	-0.000836 (-0.25)	-0.000836 (-0.19)	-0.000836 (-0.20)
<b>FERT</b>	-0.388 (-1.11)	-0.388 (-0.88)	-0.388 (-0.71)	0.0683 (1.28)	0.0683 (1.16)	0.0683 (1.11)	-0.0764 (-1.13)	-0.0764 (-1.71)	-0.0764 (-1.74)
<b>constant</b>	0.211 (0.06)	0.211 (0.05)	0.211 (0.04)	0.475 (0.85)	0.475 (0.79)	0.475 (0.76)	0.939 (1.33)	0.939 (1.93)	0.939* (2.07)
Nb. of observations:	33	33	33	33	33	33	34	34	34
R-squared:	0.49	0.49	0.49	0.21	0.21	0.21	0.38	0.38	0.38

The significantly positive SIGI-coefficients in the first three columns confirm that social institutions increase the relative ratio of female to male contributing family workers, suggesting that in many countries, helping out with farming is still seen as a woman's obligation to the family. Permanent work outside the house is likely to conflict with women's family responsibilities and thus impedes them from working as employees or employers. Furthermore, Table 4 shows that social discrimination against women significantly decreases the relative ratio of female to male employers (besides the OLS regression with bootstrap standard errors). Moreover, the standard OLS regression shows that the SIGI significantly decreases the relative ratio of female to male employees, suggesting that restrictive cultural norms impede women from working as employees; jobs which would offer women higher job quality in comparison to jobs as contributing family workers. However, the regressions in Table 4 show a relatively weak goodness of fit compared to Tables 2 and 3 and not all the results are heteroscedasticity-consistent. Nevertheless, even though none of the control variables is significant, their inclusion into the regression model confirms the robustness of our finding, which reveals that social discrimination against women affects the gender bias in job quality measured by working status. Compared to the control variables, the relatively high explanatory power of the SIGI suggests that social institutions are a main factor explaining the gender segregation of contributing family workers, employers and employees.

Regressions based on the sub-indices of the SIGI (results shown in Table I in the Appendix) show that social discrimination against women in terms of civil liberties and family code significantly increases the relative ratio of female to male contributing family workers. Furthermore, social discrimination against women in terms of son preference and physical integrity significantly decreases the relative ratio of female to male employers. Social discrimination against women in terms of civil liberties also significantly decreases the relative ratio of female to male employees, which suggests again that women's freedom of movement and dress as well as women's decision-making power in the household is crucial for women to find good quality jobs.

Having estimated the impact of the SIGI on various measures of the gender bias in job quality, we conclude that social institutions related to gender, reflected by traditions and norms that deprive women from self-determination, contribute significantly to the feminisation of bad jobs.

## IV. CONCLUSION

This paper discusses the phenomenon of a feminisation of bad jobs in developing countries. We show that discriminating social institutions play an important role in shaping employment outcomes of women through three channels: *i*) women's overall labour market participation, *ii*) gender segregation by sectors and *iii*) gender segregation by employment status.

First, discriminating social institutions can hinder women in joining the labour force outside the household for example by simply limiting their freedom of movement. Secondly, as documented in this paper, social institutions have an impact on women's upward job mobility reducing their probability to find work outside the agricultural sector, in which the working conditions are generally worse than in the industry or service. Thirdly, social institutions can make women stuck in jobs as contributing family workers, a work situation generally characterised by having no own income and social security protection.

Most donors and the international community at large have not yet focused on the analysis of social institutions that affect women's economic well-being and job quality. Donor intervention in social institutions is particularly difficult, in particular in the field of culturally sensitive issues like son preference, women's dress obligations (veil, burka), polygamy, genital mutilation and early marriages. In order to reduce the social discrimination of women, interventions should be designed to tackle potential male resistance from the outset. Donors can assist in reforming legal institutions that discriminate against women, e.g. property rights, inheritance laws, divorce laws and family codes. Access to information, opinion campaigns, public work and employment guarantee schemes for women as well as childcare facilities also help overcome these constraints.

Finally, our analysis illustrates that measuring job quality in general and its gender bias in particular is a demanding undertaking. More research in this area is definitely needed. Especially the widespread informality of women's work in developing countries makes it difficult to use more precise and adequate measures of job quality. Hence, improving measures of job quality seems to be a fruitful area for future research. In order to create an adequate "job quality-index" for developing countries, data collection is needed especially in the fields of informal and formal employment, wages, employment security, health and safety at work, access to training, career and promotion possibilities, working hours and reconciliation possibilities, social dialogue, and the presence of gender discrimination. There is a potential huge pay-off for economies which invest more resources in this type of analysis as it would not only allow to better address long persisting gender discrimination but also unlock potential for a more balanced and sustainable growth.

## APPENDIX

Table A. List of Countries

Country	Region	Region Code
Belarus	Europe and Central Asia	ECA
Croatia	Europe and Central Asia	ECA
Georgia	Europe and Central Asia	ECA
Kazakhstan	Europe and Central Asia	ECA
Kyrgyz Republic	Europe and Central Asia	ECA
Moldova	Europe and Central Asia	ECA
Russian Federation	Europe and Central Asia	ECA
Tajikistan	Europe and Central Asia	ECA
Argentina	Latin America and the Caribbean	LAC
Bolivia	Latin America and the Caribbean	LAC
Brazil	Latin America and the Caribbean	LAC
Chile	Latin America and the Caribbean	LAC
Colombia	Latin America and the Caribbean	LAC
Costa Rica	Latin America and the Caribbean	LAC
Ecuador	Latin America and the Caribbean	LAC
El Salvador	Latin America and the Caribbean	LAC
Jamaica	Latin America and the Caribbean	LAC
Nicaragua	Latin America and the Caribbean	LAC
Paraguay	Latin America and the Caribbean	LAC
Peru	Latin America and the Caribbean	LAC
Trinidad and Tobago	Latin America and the Caribbean	LAC
Venezuela, RB	Latin America and the Caribbean	LAC
Indonesia	East Asia and the Pacific	EAP
Malaysia	East Asia and the Pacific	EAP
Mongolia	East Asia and the Pacific	EAP
Papua New Guinea	East Asia and the Pacific	EAP
Philippines	East Asia and the Pacific	EAP
Thailand	East Asia and the Pacific	EAP
Bangladesh	South Asia	SA
Pakistan	South Asia	SA
Botswana	sub-Saharan Africa	SSA
Ethiopia	sub-Saharan Africa	SSA
Ghana	sub-Saharan Africa	SSA
Guinea	sub-Saharan Africa	SSA
Madagascar	sub-Saharan Africa	SSA
Mauritius	sub-Saharan Africa	SSA
Sierra Leone	sub-Saharan Africa	SSA
South Africa	sub-Saharan Africa	SSA
Zimbabwe	sub-Saharan Africa	SSA
Egypt, Arab Rep.	Middle East and North Africa	MENA
Iran, Islamic Rep.	Middle East and North Africa	MENA
Iraq	Middle East and North Africa	MENA
Morocco	Middle East and North Africa	MENA
Yemen, Rep.	Middle East and North Africa	MENA

Table B. Size of Sectors in Terms of Employment in Per Cent (Ø 2003-2007)

	All Countries	ECA	SSA	EAP	LAC	SA	MENA
EmploymAgr	28.2	38.07	32.7	35.79	15.01	0.47	29.21
EmploymInd	20.55	19.45	20.5	20.17	21.34	17.08	21.93
EmploymSv	51.92	47.24	46.63	44.02	62.59	35.68	48.83
EmploymAgr: Employment in Agriculture (% of total employment)							
EmploymInd: Employment in Industry (% of total employment)							
EmploymSv: Employment in Service (% of total employment)							

Source: World Bank (2009)

Table C. Employment by Status as Share of Total Employment in per cent  
(yearly observations 1999-2007)

	All Countries	ECA	SSA	EAP	LAC	SA	MENA
familyw_perc	15.01	7.29	16.66	15.48	9.92	37.57	27.22
employees_perc	49.88	67.26	42.59	32.71	56.90	22.87	41.86
employers_perc	5.32	1.58	4.01	21.06	4.06	0.39	3.76
familyw_perc: Contributing Family Workers a Share of Total Employment							
employees_perc: Employees a Share of Total Employment							
employers_perc: Employers as Share of Total Employment							

Source: ILO Labour Force Survey, Population Census.

Table D. SIGI sub-indices

	All Countries	ECA	SSA	EAP	LAC	SA	MENA
sub_son preference	0.10	0.00	0.00	0.17	0.02	0.63	0.40
sub_family code	0.22	0.09	0.41	0.21	0.08	0.48	0.43
sub_civil liberties	0.12	0.00	0.07	0.20	0.00	0.60	0.49
sub_physical integr.	0.29	0.22	0.44	0.27	0.19	0.17	0.47
sub_ownership rights	0.22	0.04	0.48	0.14	0.09	0.52	0.38

Source: OECD (2009).

Table E. List of Variables

Variables	Definition	Source
<b>Reponse Variables</b>		
FLF	the female labour force as percentage of the total labour force (average of existing values over the last five available years (2003-2007))	World Bank's World Development Index Data Base (2009)
FLPR	the female labour participation rate as percentage of female working age population (average of existing values over the last five available years (2003-2007))	World Bank's World Development Index Data Base (2009)
RLPR	The ratio of the female labour participation rate as percentage of female working age population to the male labour participation rate as percentage of male working age population (average of existing values over the last five available years (2003-2007))	World Bank's World Development Index Data Base (2009)
Ratio_EmpAgr	The ratio of female employees in agriculture as percentage of female employment to male employees in agriculture as percentage of male employment (average of existing values over the last five available years (2003-2007))	World Bank's World Development Index Data Base (2009)
Ratio_EmpInd	The ratio of female employees in industry as percentage of female employment to male employees in industry as percentage of male employment (average of existing values over the last five available years (2003-2007))	World Bank's World Development Index Data Base (2009)
Ratio_EmpServ	The ratio of female employees in services as percentage of female employment to male employees in services as percentage of male employment (average of existing values over the last five available years (2003-2007))	World Bank's World Development Index Data Base (2009)
familywR	The ratio of the share of female contributing family workers among family workers to the share of male contributing family workers among male workers	ILO Labour Force Survey and Population Census Data (1999-2007)
employeesR	The ratio of the share of female employees among female workers to the share of male employees among male workers	ILO Labour Force Survey and Population Census Data (1999-2007)
employersR	The ratio of the share of female employers among female workers to the share of male employers among male workers	ILO Labour Force Survey and Population Census Data (1999-2007)
<b>Regressors</b>		
SIGI	Social Institutions and Gender Index	OECD (2009), Bransia <i>et al.</i> (2009)
sub_family	subindex Family code	OECD (2009), Bransia <i>et al.</i> (2009)
sub_civil	subindex Civil liberties	OECD (2009), Bransia <i>et al.</i> (2009)
sub_physical	subindex Physical integrity	OECD (2009), Bransia <i>et al.</i> (2009)
sub_sonpreference	subindex Son preference	OECD (2009), Bransia <i>et al.</i> (2009)
sub_ownership	subindex Ownership rights	OECD (2009), Bransia <i>et al.</i> (2009)
lnGDP	log of GDP per capita, PPP (constant 2005 international \$)(average of existing values over the last five available years (2003-2007))	World Bank's World Development Index Data Base (2009)

lnGDP <sup>2</sup>	square of the log of GDP per capita, PPP (constant 2005 international \$)(average of existing values over the last five available years (2003-2007))	World Bank's World Development Index Data Base (2009)
FERT	total fertility rate (births per woman)(average of existing values over the last five available years (2003-2007))	World Bank's World Development Index Data Base (2009)
EDU	School enrollment; secondary, female (% gross) (average of existing values over the last five available years (2003-2007))	World Bank's World Development Index Data Base (2009)

Table F. Summary Statistics

variable	number of obs.	mean	std. dev.	min	max
SIGI	43	0.09	0.11	0.00	0.34
FLF	43	41.03	8.07	17.53	50.73
FLPR	44	51.57	15.91	13.88	82.10
RLPR	44	0.69	0.20	0.20	0.98
Ratio_EmpAgr	36	0.78	0.50	0.12	2.33
Ratio_EmpInd	35	0.62	0.26	0.21	1.50
Ratio_EmpSv	35	1.29	0.33	0.45	1.82
familywR	35	2.59	1.64	0.73	7.59
employersR	35	0.45	0.23	0.13	1.11
employeesR	36	0.89	0.32	0.27	2.18
lnGDP	42	8.35	0.92	6.38	9.87
FERT	44	2.92	1.24	1.24	6.48
EDU	43	70.12	25.29	18.42	109.47

**Table G. Impact of SIGI sub-indices on Female Labour Market Participation**

Endogenous variable:	(1) Female share of the labour force (FLF)		(2) Female labour participation rate (FLPR)		(3) Female labour participation rate (FLPR)	
	OLS with hc3 robust standard errors	OLS with hc3 robust standard errors	OLS with hc3 robust standard errors	OLS with hc3 robust standard errors	OLS with hc3 robust standard errors	OLS with hc3 robust standard errors
Type of regression:						
Regressors:						
<b>sub-civil</b>	-14.11*** (-3.61)		-27.71** (-2.83)		-0.316** (-3.42)	
<b>sub_sonpreference</b>		-23.88*** (-4.63)		-47.70*** (-4.03)		-0.512*** (-3.91)
<b>lnGDP</b>	-71.21** (-3.35)	-63.67** (-3.54)	-102.6 (-1.79)	-86.87 (-1.66)	-1.675** (-3.18)	-1.533** (-3.34)
<b>lnGDP<sup>2</sup></b>	4.057** (3.20)	3.586** (3.25)	5,832 (1.73)	4,851 (1.55)	0.0945** (3.02)	0.0856** (3.07)
<b>EDU</b>	0.205** (2.74)	0.182** (3.05)	0.108 (0.60)	0.0589 (0.43)	0.00426* (2.29)	0.00385* (2.33)
<b>constant</b>	336.0*** (3.99)	308.3*** (4.34)	492.7* (2.13)	434.5* (2.06)	7.737*** (3.69)	7.221*** (3.97)
Nb. of observations:	41	41	41	41	41	41
R-squared:	0.60	0.65	0.50	0.57	0.55	0.60

t statistics in parentheses, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001

Table H. Impact of SIGI sub-indices on Gender Segregation by Sectors

Endogenous variable:	(1) Relative ratio female/male employees in agriculture (Ratio_EmpAgr)			(3) Relative ratio female/male employees in service (Ratio_EmpSv)		
Type of regression:	OLS with hc3 robust standard errors	OLS with hc3 robust standard errors	OLS with hc3 robust standard errors	OLS with hc3 robust standard errors	OLS with hc3 robust standard errors	OLS with hc3 robust standard errors
Regressors:						
<b>sub-civil</b>	0.858* (2.51)			-0.608** (-3.07)		
<b>sub_sonpreference</b>		1.250** (3.31)			-0.882*** (-5.13)	
<b>sub_family</b>			1.294* (2.40)			-1.002*** (-4.14)
<b>lnGDP</b>	-0.232** (-2.82)	-0.194* (-2.05)	-0.210* (-2.38)	0.125** (2.88)	0.0963 (1.73)	0.116* (2.33)
<b>EDU</b>	-0.00504 (-0.87)	-0.00361 (-0.88)	-0.00436 (-0.74)	0.00895* (2.23)	0.00802** (2.85)	0.00786 (2.02)
<b>FERT</b>	-0.211 (-1.81)	-0.180 (-1.98)	-0.261* (-2.48)	0.189* (2.45)	0.168** (3.10)	0.221** (3.32)
<b>constant</b>	3.542** (3.48)	3.024** (3.25)	3.289** (3.47)	-0.859 (-1.52)	-0.488 (-1.03)	-0.674 (-1.23)
Nb. of observations:	35	35	35	34	34	34
R-squared:	0.46	0.50	0.43	0.62	0.64	0.61

t statistics in parentheses, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001

Table I. Impact of SIGI sub-indices on Gender Segregation by Working Status

Endogenous variable:	(1) Relative ratio female/male contributing family workers (familywR)		(2) Relative ratio female/male employers (employersR)		(3) Relative ratio female/male employees (employeesR)
	OLS with hc3 robust standard errors	OLS with hc3 robust standard errors	OLS with hc3 robust standard errors	OLS with hc3 robust standard errors	OLS with hc3 robust standard errors
Regressors:					
<b>sub_civil</b>	4.674*** (4.07)				-0.430* (-2.13)
<b>sub_sonpreference</b>			-0.624* (-2.58)		
<b>sub_family</b>		6.443* (2.52)			
<b>sub_physical</b>				-0.446* (-2.17)	
<b>lnGDP</b>	0.140 (0.32)	0.322 (0.59)	0.0292 (0.41)	-0.0669 (-1.17)	0.0109 (0.15)
<b>EDU</b>	-0.0101 (-0.71)	-0.00477 (-0.26)	0.000295 (0.10)	0.00453 (1.42)	0.000166 (0.04)
<b>FERT</b>	-0.178 (-0.40)	-0.249 (-0.41)	0.0601 (0.94)	0.0695 (1.01)	-0.109* (-2.65)
<b>constant</b>	2,025 (0.47)	-0.390 (-0.06)	0.0787 (0.11)	0.602 (0.94)	1.146* (2.20)
Nb. of observations:	34	34	34	33	35
R-squared:	0.56	0.37	0.26	0.20	0.36

t statistics in parentheses, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001

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