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Gender-based Employment  
Segregation: Understanding  
Causes and Policy Interventions

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Eliana Carranza, Smita Das, and Aphichoke Kotikula

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# GENDER-BASED EMPLOYMENT SEGREGATION: UNDERSTANDING CAUSES AND POLICY INTERVENTIONS

Eliana Carranza, Smita Das, and Aphichoke Kotikula

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# ABSTRACT

Employment segregation—the unequal distribution of female and male workers across and within job types—is often at the heart of gender gaps in job quality, wage and employment trajectories. Employment segregation carries important costs for the economy, particularly in countries facing a demographic crunch, a dearth of talent among job applicants, or an increasing proportion of households in which women are the primary bread earners. Nevertheless, employment segregation appears to be resilient to economic development and market forces, and it remains present in developed and developing countries alike.

This paper discusses the factors that drive employment segregation, and policy prescriptions suggested by the literature. While prescriptions are highly dependent on local context, government policies are most likely to be effective if they strategically address the supply-side and demand-side constraints that are binding for a particular context, address several constraints in parallel if they are simultaneously binding, and carefully consider general equilibrium effects.

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# EXECUTIVE SUMMARY

Gender-based employment segregation refers to the unequal distribution of female and male workers across and within job types. Segregation can be horizontal, with women and men concentrating in different sectors, industries, occupations, types of products, and business sizes; and vertical, with gender disparities in positions with different statuses, managerial responsibilities, or potential for promotion.

Targeting gender-based employment segregation, beyond female labor force participation, is key to improving job quality and gender equality. Employment segregation and female labor force participation are often driven by similar factors. However, greater female labor force participation alone may not increase gender equality if employment segregation implies that women enter low return occupations, or that they crowd into a limited number of occupations resulting in lower wages. Indeed, employment segregation may limit efforts to encourage women's participation in the labor market.

Patterns of gender-based employment segregation vary across countries. On a global level, women do tend to concentrate in low productivity sectors. Moreover, within each sector, women concentrate in low-productivity industries. However, no occupation is universally dominated by men or women, and several are male- or female-dominated in some countries but gender balanced in others.

Gender-based employment segregation carries important costs for the economy. As gender gaps in human capital are reduced (even reversed) across the globe, the higher concentration of women in low productivity jobs or jobs with fewer hours is an increasingly important form of labor misallocation. Additionally, limited female participation in leadership and managerial roles curbs the innovation and growth that can arise from diversity.

In spite of its implications for gender equality and economic productivity, segregation appears in developed and developing countries alike. Achieving higher growth or greater market integration do not appear to help eliminate a country's gender-based employment segregation. Employment segregation is highly dependent on local social norms and beliefs, the current female share of participation in an occupation, and the locally binding constraints to labor supply and demand.

Public policies and concerted efforts are called for to address the problem. Selecting optimal policies for change requires understanding the main drivers of segregation and the local context. In order to clarify the theory of change, we briefly discuss the binding causes of women's employment segregation and then present examples and evidence on effective policies and interventions. We generally focus on countering constraints for women to succeed in male-dominated jobs. While men may also face constraints to empowerment in female-dominated employments, these factors are not the focus of this review paper.

We start by examining policies that attempt to reduce the employment segregation of women by targeting supply-side gender gaps in skills, capital, domestic and care responsibilities, safety and mobility, and role models and networks.

- *Choice of educational stream by gender:* The falling gender gap in educational attainment does not appear to reduce employment segregation. Rather, segregation is closely linked to educational sorting and choice of educational stream. Boys are more likely to specialize in highly remunerated STEM fields. Choice appears to be highly influenced by teachers and parents, knowledge of returns to a field, the belief that ability is malleable, and confidence. Both training

in hard skills with on-the-job experience, the development of aspirations, and training in soft skills (such as confidence) may increase prospects for women in male-dominated fields.

- *Gender gap in access to assets and capital:* The gender gap in access to capital is tied to differences in property rights, inheritance, decision-making power over earnings, and discrimination in capital markets. Limited access to productive capital may inhibit women's ability to take risks and acquire the human and physical capital necessary for investing in profitable crops, for becoming entrepreneurs, and for entering non-farm work.
- *Intra-household allocation of time:* Gender norms on the division of household responsibilities contribute to employment segregation by making women self-select into jobs and occupations that allow temporal flexibility, or that build general skills that are more transferable to other firms if they dropout at the time of childbirth. Unfortunately, these norms are very slow to change; still, promising programs target the burden of domestic responsibilities for women and engage and incentivize men to increase their share of household responsibilities.
- *Safety and mobility:* Women's mobility may be constrained by social norms, gender-based violence and general safety. These restrictions may affect women's choice of school and skill's acquisition, their selection of income-generating activities, and their ability to engage in businesses based outside of the home. Fear of harassment may also inhibit women's entry into male-dominated sectors. Research on solutions in this area is sorely lacking.
- *Networks and role models:* Employment segregation can result in smaller and weaker networks for women and the presence of fewer female role models, which further perpetuates gender norms on women's occupations and segregation. Role models impact women's expectations of their ability to succeed in a field, which influences their skills acquisition. Weak networks also reduce referrals for jobs and promotions, limit mentorship opportunities, and contribute to the influx of women into self-employment. Limited evidence suggests that role models may be effective if they are part of the same in-group as individuals, and they do not encourage a negative self-concept. Male mentors and role models can also be effective, particularly if they are part of an individual's network.

We further summarize demand-side behaviors at recruitment, selection, hiring, evaluation and promotion, as well as features of the workplace culture that contribute to women's employment segregation.

- *Recruitment, selection and hiring:* Job postings themselves may repel female applicants. While some postings reveal gender preferences outright, others include "male" wording such that women do not feel they belong. There is also suggestive evidence that women are more likely to apply if more information about a job is provided, and if the pay structure is only partially competitive or depends on the productivity of a team rather than an individual. Moreover, a series of studies have demonstrated discrimination in the sorting of resumes and the use of connections in hiring, which can perpetuate existing gender imbalances. Thus, policy options may include altering language in job postings, the encouragement of gender-blind steps in the hiring process, comparative rather than individual evaluations of candidates, and affirmative action and altered recruitment policies.
- *Evaluation and promotion:* The presence of women in leadership positions can help stem the cycle of vertical employment segregation. Even so, evidence shows that women often enter the

labor market and companies in jobs with lower growth potential, which places them on a lower career trajectory. Moreover, women and men are often evaluated and rewarded in different ways, in relation to their conformance to gender-based prescriptions for behavior. As a result, the percentage of women in high-level positions remains small, and leakage increases with progression up the job hierarchy. Solutions must be rooted in firm data on placement in growth-oriented jobs and reflection on firm values and criteria for promotion.

- *Workplace culture:* Workplace culture— from organization values and policies, to gender-based prescriptions for behavior, to the physical environments, to harassment— can affect an employee’s sense of inclusion, likelihood of staying in a job, and ability to network with co-workers and superiors. In addition, a workplace culture that disregards work-life balance may contribute to intra- and inter- industry employment segregation. Flexible hours, childcare facilities, and parental leave help if the costs are not borne only by employers, and if the benefits are utilized equally by men and women. Solutions such as organizational responsibility for harassment and work culture, training and advisory services to promote respectful social norms and interpersonal skills, grievance mechanisms and penalties for sexual and moral harassment, and gender sensitization can help improve employees’ interest, performance and sense of inclusion in the workplace.

Outside of policies that address the specific constraints discussed above, governments provide the macro-fiscal, legal and regulatory frameworks that play a role in perpetuating or correcting employment segregation by gender. Their involvement may be critical to coordinate market-wide change, address general equilibrium effects and make a dent on employment segregation.

- *Macroeconomic and fiscal policies:* Marginal tax rates that affect secondary earners, trade deals, privatization and outsourcing policies, are just a few policies that have important ramifications for employment segregation. Governments can also proactively address constraints to female employment in sectors that are projected to grow and produce high return jobs.
- *Direct prohibition of occupations:* Several countries have laws that prohibit female work in certain occupations considered “inappropriate” or “dangerous”. This limits women’s choice of occupation and reinforce prescriptive attitudes for women in the workforce. Governments should consider removing these prohibitions, and instead, encourage safety for individuals while they are in the workplace and on their way to work.
- *Female-specific policies:* Female-specific policies, such as maternity leave, can increase employment segregation by reinforcing women as primary caretakers, funneling women into occupations that are conducive to time away from work, increasing detachment from the labor force, or increasing employer-borne costs for hiring women. Governments can consider encouraging social security funded leave, child care subsidies, the availability of public pre-school, or paternity leave. However, these efforts must be accompanied by efforts to create work cultures where these programs are utilized.
- *Policies that discourage vertical segregation:* Quotas for women in leadership can be an effective way of countering discrimination by transforming perceptions of women’s ability to lead. Governments may also incentivize gender parity throughout the organizational hierarchy by promoting discussion on employment segregation, recognizing companies with supportive work cultures, and implementing anti-discriminatory policies that sanction certain hiring practices.

- *Coordination failure and general equilibrium impacts:* Governments have a key role coordinating market-wide change and enacting policies and interventions with general equilibrium impacts. Governments may be critical to engaging stakeholders and incorporating sub-cultures that follow religious or customary laws. As the public sector is an important source of employment, governments can also make direct contributions towards the reduction of employment segregation.

# INTRODUCTION

Employment segregation, the unequal distribution of men and women across and within job types, is often at the heart of gender disparities in labor market outcomes. It is responsible for much of the gender gap in wage, job quality and employment trajectories. It may also underlie the labor market expectations of men and women and reinforce norms on gender roles, which in turn drive their differential access to assets and investments in skills, perpetuating employment segregation. Employment segregation has important implications for gender equality and a country's economic productivity, and it appears in developed and developing countries alike. Moreover, gender-related employment policies and programs rarely traverse into employment segregation, instead often focusing on labor force participation.

In this review paper, we shine light on the evidence base on employment segregation, as well as the critical importance of considering employment segregation in policy design and research. Section 1 presents the definition, types and prevalence of employment segregation. Section 2 discusses the consequences of employment segregation for gender equality and economic growth, which motivate policy intervention. Section 3 focuses on the factors that perpetuate employment segregation and the policies that directly address these factors. Our sections on labor supply (Section 3.1), labor demand (Section 3.2), and macro-fiscal, legal and regulatory frameworks (Section 3.3) highlight key behavioral changes necessary for workers and firms, and the role of the government respectively. Throughout our discussion, the lack of rigorous evidence on effective policies will be apparent. Thus, Section 4 concludes with a summary of important steps for future research.

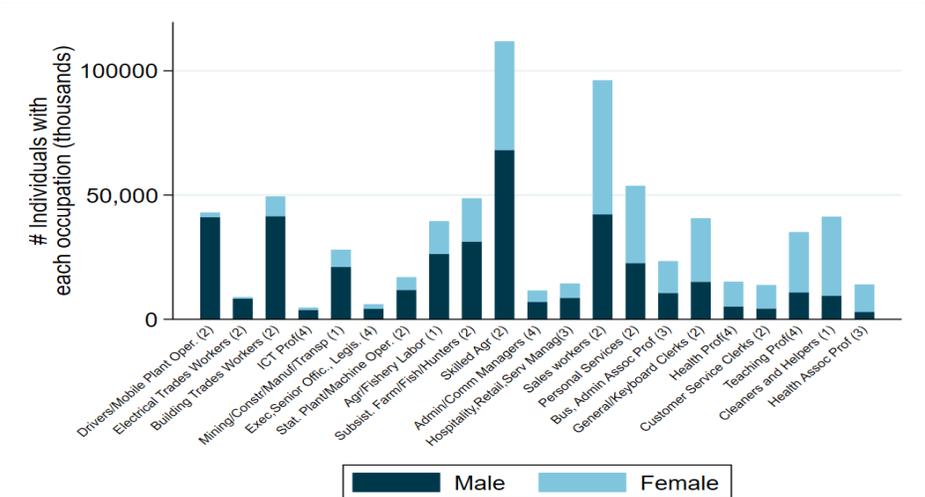
# 1. WHAT IS GENDER-BASED EMPLOYMENT SEGREGATION

Gender-segregation of economic activities begins in the household, where women tend to perform domestic and care responsibilities, men engage in tasks that contribute to the acquisition of marketable skills, and children play with toys and conduct chores in line with gender norms. The household not only determines the time allocations available to men and women for market activities, but also shapes men and women’s actual and perceived comparative advantage, and the social norms regarding their aspirations, roles, and behavior.

In the workplace, this gender-based segregation is reflected in both horizontal and vertical dimensions. Horizontal segregation is generally pictured as women and men’s disparate concentration across industries and occupations. However, it also takes the form of women and men’s differential likelihood of being employed in the formal or informal sector, paid or unpaid jobs, and wage employment or self-employment; women and men’s unequal representation in the cultivation of different crops; and female and male entrepreneurs’ different businesses sizes, business types and products. Furthermore, employment segregation can be vertical, with gender disparities in positions and roles with different statuses or employment advancement potential.

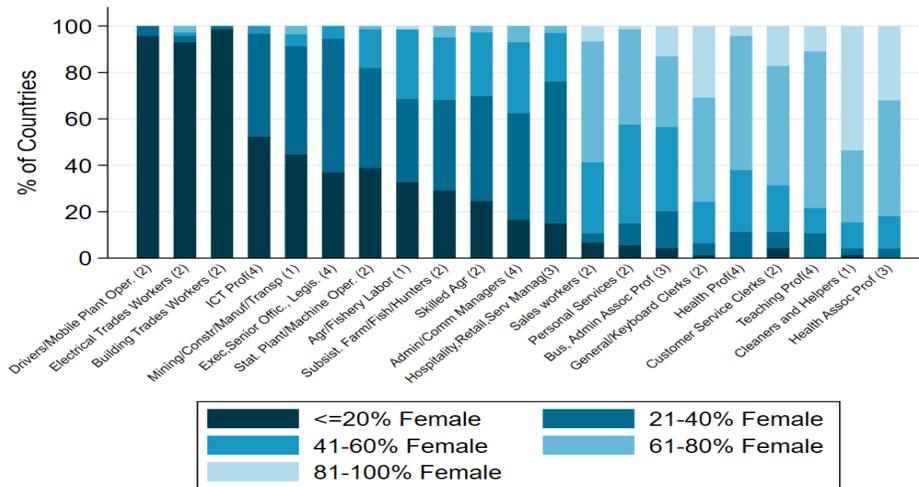
Using data on 80 developed and developing countries from the ILO database, we examined employment segregation by occupation using 2-digit occupation codes for 21 select occupations. Our sample includes 3 countries from South Asia, 5 countries from the Middle East and North Africa, 10 countries from Sub-Saharan Africa, 12 from East Asia and the Pacific, 12 from Latin America and the Caribbean, and 38 countries in Europe and Central Asia.

**Figure 1. Number of Individuals by Occupation and Gender**



Source: Prepared by authors using data from ILO Stat.  
 Note: Proportion female increases Left to Right. Skill level of occupation in parentheses.

**Figure 2. Proportion of Countries with Gender Imbalance in Each Occupation**



Source: Prepared by authors using data from ILO Stat.  
 Note: Proportion female increases Left to Right. Skill level of occupation in parentheses.

We start by calculating the Duncan index for each country to assess the extent of horizontal segregation by occupation.<sup>1</sup> The Duncan index is a description of the percentage of workers who would need to switch jobs to obtain an equal distribution of men and women in each job type. A Duncan index that is closer to zero indicates a more similar distribution of men and women across employment categories.

Employment segregation by occupation (occupational segregation) is more severe in Latin America and the Caribbean and less so in South Asia and Sub-Saharan Africa. In Latin America the average Duncan index across represented countries was the highest (.53), followed by the Middle East and North Africa (.50), Europe and Central Asia (0.46), East Asia and the Pacific (.39), Sub-Saharan Africa (.33), and South Asia (.30). Low occupational segregation in South Asia and Sub-Saharan Africa may be related to the limited granularity of occupational codes within the agriculture sector.

We also examine which occupations are “male-dominated” or “female-dominated” for a particular context. We follow De Mel, McKenzie and Woodruff (2009)’s definition of male- and female- dominated occupations as those in which men made up more than 75 percent and less than 25 percent of employment, respectively. Figure 1 arranges each occupation in order of the proportion of employees who are female.

In our full sample of countries, male-dominated occupations include driver or mobile plant operator, electrical worker, building worker, ICT professional, mining/construction/manufacturing/transport worker, executive/senior officer/legislative worker, stationary plant or machine operator, and agricultural laborer. Female-dominated occupations tend to include health associate professionals, elementary sales or services, customer service clerks, and teaching professionals.

Looking further at the skill level requirements by occupation, we label each occupation in Figure 1 using the ILO four-point skill-level scale, displayed in parentheses. Here it is evident that occupations with both

<sup>1</sup> Individual values by country can be found in the appendix (Table A.1).

high and low skill levels may be male-dominated or female-dominated. Thus, occupational segregation does not appear fully explained by differences in skills.

Furthermore, the data suggest that in general there is no such thing as an inherently or universally male or female occupation. Several occupations are male-dominated in some countries, gender-balanced in some, and female-dominated in others. Figure 2 displays the number of countries with a gender imbalance for each occupation. Agriculture/fishery labor, skilled agriculture, and subsistence farming and fishing are often male-dominated but appear to be gender-balanced in a number of countries from Europe and Central Asia. Business and administration associate professionals are male-dominated in 5 countries in the sample, female-dominated in 10 countries, and more gender-balanced in 55 countries.

There are a handful of breakthrough countries, which defy the stereotypical gender associations of certain occupations. For example, Indonesia is the only country in our sample in which building trades are not male-dominated, and Namibia and Tanzania are the only countries in which electrical trades are not male-dominated. Unexpectedly, the only countries in our sample for which information and communications technology (ICT) professions are not male-dominated are Brunei Darussalam, Costa Rica, and Ethiopia. The Dominican Republic, Gambia, Russia, and Switzerland are beginning to achieve equal gender representation in the occupational grouping of executives, senior officials, and legislators. Such breakthroughs also take place in female-dominated occupations.

#### **Box 1: Historical reflections on employment segregation**

Employment segregation evolves as economies develop and new technologies emerge. Development processes such as structural transformation can bring shifts off-the-farm to manufacturing and services and, consequently can affect the profile of employment segregation. New technologies can create new occupations and make existing ones obsolete, and such process can shift the proportion of men and women in the sector. Between 1994 and 2016, the employment shifts in OECD countries tended to be on the high-skill end, and women benefited from this more than men. Evidence shows a reallocation from clerical occupations towards service and retail workers, technicians, and professionals—a trend that is more beneficial for women. The outlook for the next decades is less optimistic, however. As women tend to carry out more routine tasks than men, their jobs are prone to automation. On the upside, job growth is expected in traditionally female sectors such as health, education, and social services, which are less prone to automation due the need for cognitive and interpersonal skills (Brussevich et al., 2018).

Historical evidence reveals such shifts. And what is seen today as a “woman’s” job, may have not been true in the past. In late 19th century United States, office jobs such as clerks, bookkeepers, and copyists were rarely comprised of women, who accounted for about 5.7 percent of these jobs in 1880. With the introduction of calculators and data processing machines more women joined this workforce, classified as typists and machine operators. By 1930, the census showed that more than half of bookkeepers were women. Strom (1987) argued that the management initially sought women workers to use bookkeeping machines because they could pay them less and they thought women would be open to the mechanization which replaced male clerical workers with machines. Although these new workers brought in a new set of skills, their wages were kept low. In the first half of 20th century, while the number of women in clerical and office work such as bookkeepers, cashiers, and typists grew, high level jobs such as accountants and auditors remained dominated by men.

The history of the maquiladora industry in Mexico offers another example of how employment segregation is moderated by technology and gender norms. When the maquiladora (export processing) plants were established along the US-Mexico border in 1965, the industry immediately showed a preference for hiring young, well-educated, and childless women. In the early stages of the maquiladora industry, in 1975, women constituted 78 percent of its labor force. As the number of maquiladora workers increased from about 58,000 in 1975 to over one million in 2000, the share of women dropped to about 55 percent. Several theories have been offered to explain the trend. Some suggested that the scarcity of female labor encouraged factories to hire more diverse types of workers such as women with children or low level of education, as well as men. At the same time, many women left the maquiladoras to work in the service sector where wages were higher. Changes in production technology, from labor intensive assembly plants to Fordist manufacturing plants, could offer more traditionally “masculine” types of work, drawing men to the industry. Perhaps most importantly, the attitude of men might have changed; if the employers’ preference remained unchanged, male workers must have adopted “feminine” traits like being “compliant” and had become more employable for maquiladora plants. Relatedly, following the economic crisis of 1982, Mexican men sought work in the maquiladora, partially due to the decline in other employment opportunities for men (Fussell 2000, and Wilson 2002).

While sex-segregation into particular occupations is not universal, women do tend to concentrate in low productivity sectors. Examining employment segregation from a broader perspective, the McKinsey Global Institute (Woetzel et al., 2015) found that women dominated the services sector in every region of the world except South Asia, and men dominated the industry sector in every region. Agriculture was dominated by women in South Asia, Sub-Saharan Africa, and the Middle East and North Africa; and gender balanced or dominated by men elsewhere. In most regions, industry was the highest productivity sector and agriculture was the lowest. Moreover, within the service sector, on a global level, women are concentrated in low-productivity industries: wholesale and retail trade, health and social work, and education (Woetzel et al., 2015). Historical reflections and future trends of employment segregation are discussed in Box 1.

Moreover, employment segregation changes over time. Using data from 69 developing countries between 1980 and 2011, Borrowman and Klasen (2017) found that occupational and sectoral segregation increased in some countries and decreased in others. In the United States (US), Blau and Kahn (2016) found that segregation, as measured by the Duncan Index, fell by 6.1 percentage points in the 1970s, but this rate of decrease gradually fell to 1.1 percentage points in the 2000s. While occupational sex segregation fell within cohorts in the 1970s and 1980s, the decline in occupational sex segregation today is driven by the entry of new female cohorts. The changing gender mix of each occupation, rather than changes in the relative size of various occupations, drove declines in the US.

## 2. WHY GENDER-BASED EMPLOYMENT SEGREGATION MATTERS

Women's labor force participation is often considered an indicator of economic empowerment. However, higher participation rates may not imply greater gender equality or female empowerment. Employment segregation often constraints women labor force participants into unpaid, informal, and low-return jobs. As women crowd into a limited number of occupations, employment segregation also reduces women's returns from participation in the labor force. Thus, it is important that the analysis of women's labor market outcomes comprises an analysis of employment segregation, as this underlies gender differences in wages, benefits, workplace productivity and opportunities for growth. In addition, employment segregation can have key implications for economic growth and household wellbeing.

Employment segregation is one of the primary contributors to gender wage gaps around the world. In the US in 2010, employment segregation by occupation accounted for the largest proportion of the gender wage gap at 33 percent, followed by employment segregation by industry at 18 percent, compared to 14 percent for experience. Moreover, the gender wage gap is inversely related to the gender gap in education, suggesting that on average, while women have higher educational attainment than men, they earn less (Blau and Kahn, 2016). In Portugal, 15 percent of the gender wage gap was explained by the sorting of women into low-wage firms (Card et al., 2015). These numbers do not reflect additional symptoms of employment segregation: differences in benefits, workplace conditions, and opportunities for growth.

There is also evidence that employment segregation affects gender-differentials in earnings among the self-employed. In Eastern Europe and Central Asia and Sub-Saharan Africa, female-owned enterprises earn less than male-owned enterprises because they tend to concentrate in low performing industries: food processing, garments, wholesale and retail trade, and hotels and restaurants. Data from the US indicates that industry choice accounts for 9 to 14 percent of the gender earnings gap among the self-employed (Hundley, 2001). A survey of entrepreneurs in Uganda found that women who entered male-dominated trades earned the same revenue as men, and three times the revenue of women in female-dominated sectors (Campos et al., 2015). Finally, female farmers in Nigeria observed higher returns from switching to commercialized agriculture than men (O'Sullivan et al., 2014).

The lower job quality and returns conveyed by employment segregation can ultimately influence women's decision to participate in the labor market. Indeed, among developing countries, increases in female labor force participation rates are correlated with reduced employment sex segregation by sector but increased segregation by occupation (Borrowman and Klasen, 2017). Therefore, increasing the availability of high quality jobs for women is essential to raising female labor supply, as it is required for the substitution effect—the incentive to supply more labor as wages increase—to keep pace with the income effect—the incentive to increase non-work time as higher wages lead to increased earnings—among middle income countries (Goldin, 1994).

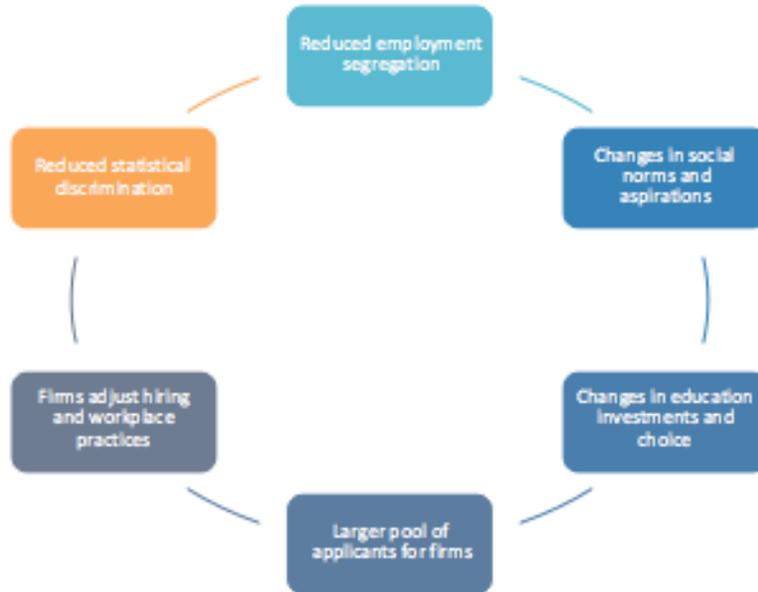
In turn, the participation of women in high return jobs has been linked to economic growth. In many countries, women are placed in low return jobs despite higher educational attainment, suggesting the presence of a skills mismatch which could impede productivity. This misallocation is particularly salient

given the current and expected shortage of highly skilled workers faced by employers (Woetzel et al., 2015; Devillard et al., 2013). A study of states in India found that a 10 percent increase in the ratio of female to male managers would increase output per capita by 2 percent (Esteve-Volart, 2004). The McKinsey Global Institute (Woetzel et al., 2015) estimated that achieving gender parity in economic participation by 2025 would increase the annual global GDP by (USD)\$28 trillion, 22 percent of which would be achieved by the elimination of sectoral segregation, 21 percent from parity in hours worked, and 58 percent from parity in workforce participation.

Additionally, as women increasingly become the primary rather than supplemental breadwinners in the household, employment segregation increasingly contributes to household welfare and consumption. Between 2008 and 2015, the proportion of working women who out-earned their husbands increased by 7.4 percentage points in Ethiopia, 4.4 percentage points in Liberia, and 4.4 percentage points in Nepal (ICF International, 2017). Among households with children under age 18 in the US, mothers are the sole or primary breadwinners in 40.4 percent, up from 10.8 percent in 1960. This increase in breadwinner mothers is attributed to married mothers increasingly earning more than their husbands, as well as to the increase in the proportion of households with single mothers (Wang, Parker and Taylor, 2013). Furthermore, there is evidence that women demonstrate different priorities than men as household budget managers. Studying household decision making, Duflo and Udry (2004) showed that household consumption in Cote D'Ivoire varied with the identity of the owner and the source of the income. In Uganda, women entrepreneurs who worked in male-dominated trades were more likely to spend on school expenses than women in female-dominated trades (Campos et al., 2015).

There is also an important business case for reducing employment segregation and increasing gender diversity in the workplace. Some argue that gender diversity in the workplace increases creativity and diversity of thought, reduces stagnant thinking, encourages constructive dissent, enhances understanding of the female consumer base, and helps to attract and retain other female employees. Compared to male politicians, female politicians in India were found to prioritize investments in infrastructure that were more relevant to women in their constituencies (Chattopadhyay and Duflo, 2004). The presence of women on the board of directors has been found to improve firm performance, particularly among firms with weak governance, via better audit function (World Bank, 2012). A number of studies have also found a positive association between female participation and corporate returns, cash flows per employee, and firm accountability (Woetzel et al., 2015; Hellerstein, Neumark, and Troske 1997). However, establishing a causal relationship between diversity and success is difficult on the firm level, particularly in the absence of natural experiments.

**Figure 3. Possible Virtuous Cycle of Reducing Employment Segregation**



Source: Prepared by Authors

Thus, addressing employment segregation is central to reducing the gender wage gap, improving job quality and earnings for women, and increasing female labor force participation. Employment segregation also has important consequences for overall economic growth, household welfare, firm performance and intergenerational social mobility. Efforts to reduce employment segregation can create a virtuous cycle in which increased female participation in high return occupations creates larger networks of women and changes social norms (see Figure 3). Gender equal norms could then inspire girls and their parents to invest in their human capital, creating a larger pool of applicants for firms, which would affect statistical discrimination<sup>2</sup> and skills mismatch in the labor markets. Equal representation of women across all types of jobs increases the incentives for firms to adjust work environments to women’s needs, then reducing employment segregation while improving economic output.

<sup>2</sup> Statistical discrimination refers to discrimination that is not based on prejudice, but rather stereotypes and the statistical behavior of the discriminated group (as opposed to taste-based discrimination). For example, in the absence of information about a particular applicant, an employer may make assumptions about the applicant’s behavior based on the employer’s perception of the average performance of a group to which the applicant belongs.

### 3. UNDERLYING SOURCES AND POSSIBLE SOLUTIONS

Gender-based employment segregation is persistent and does not appear to change of its own accord with the level of income of a country or in response to market forces (World Bank, 2011; Borrowman and Klasen, 2017). Economic development, improved education, and higher female labor force participation are not sufficient conditions to reduce employment segregation, and policy rarely targets employment segregation directly.

Nevertheless, history demonstrates that the patterns of gender-segregation have changed over time. Little is known about how this transformation occurred and how this success can best be repeated, but research suggests that the process speeds up once a tipping point in the female share of participation in an occupation is reached. In the US, traditionally male occupations such as accountants, auditors and pharmacists have increased female representation in the past 50 years, with women currently accounting for 50 percent or more workers (The Economist, 2017). Using data from the US, Pan (2015) finds that there is a tipping point in which occupations feminize more quickly when a census region achieves a particular threshold of female participation. The tipping point, or initial female share of the occupation, is lower for blue-collar occupations than white-collar occupations, and, interestingly, lower in areas where males hold more sexist attitudes towards the role of women. She rationalizes these findings with a model in which males with a stronger distaste for working with women are more likely to leave an occupation when women begin to enter it.

The speed of change in the patterns of employment segregations is also highly dependent on prevailing social norms and beliefs. Existing social norms make employment segregation difficult to transform. In both developed and developing countries there is a persistent and foundational view of the household division of responsibilities in which men are providers and protectors, and women are household managers and caretakers. Women often opt to work from home or in jobs that do not contravene the severe norms of their households and communities. Combining qualitative studies from 370 focus groups in 20 countries, Muñoz Boudet et al. (2013) report that gender social norms restrict women’s activity choices. Examples include taboos on commercial or social exchanges between women and unrelated men, and concerns over women’s honor being tarnished in public. The consequences of such “inappropriate” exchanges range from refusing permission for women to work outside the home to insisting on sex-segregated jobs. Even without such overt restrictions, acceptable professional jobs for women are often just extensions of their caretaker roles at home: teacher, nurse, and cook (Muñoz Boudet et al. 2013).

Figure 4 summarizes the theory of change of gender-based employment segregation that underlies the discussion in this section. Supply-side (Section 3.1) and demand-side (Section 3.2) constraints, as well as macro-fiscal, legal and regulatory frameworks (Section 3.3)—which serve as policy levers—interact with the local context and existing social norms to determine the extent of employment segregation. On the labor supply side, policies that attempt to reduce employment segregation target gender gaps in skills, capital, domestic and care responsibilities, safety and mobility, and role models and networks. On the labor demand side, interventions focus on workplace culture and employer behavior at different stages of employment. In addition to policies that address the specific supply and demand side determinants of employment segregation, governments have a key role providing macro-fiscal, legal and regulatory frameworks that play a role in perpetuating or correcting employment segregation by gender.

**Figure 4. Theory of Change of Gender-Based Employment Segregation**



Source: Prepared by Authors

### 3.1. LABOR SUPPLY-SIDE

#### 3.1.1. Skills

##### *Educational attainment and educational choice*

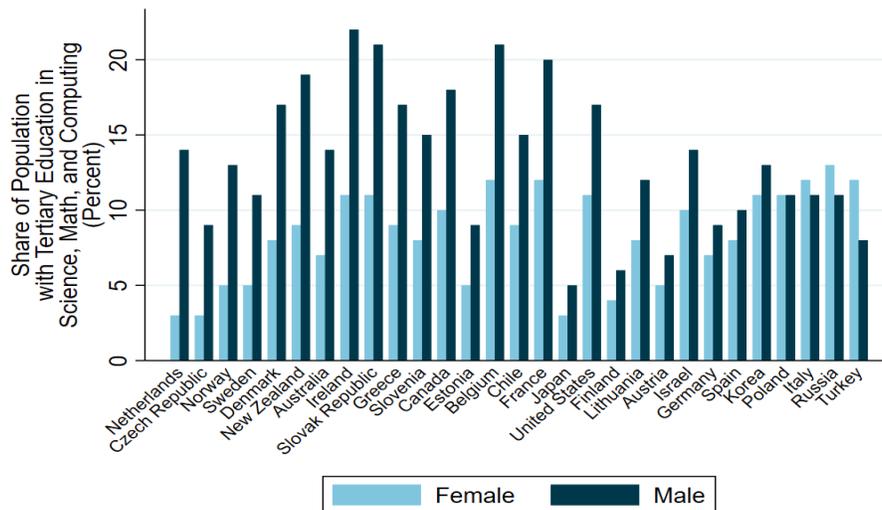
Employment segregation begins at a young age with gender differences in personal and parental aspirations and role models, limited expected returns due to discrimination, and gender norms on mobility, investment in children’s education, and perceived gender gaps in educational performance. These factors influence educational attainment, choice of educational stream, and the development of soft skills, which can differentially perpetuate employment segregation.

While the gender gap in school enrollment is closing in much of the world, gender gaps in secondary and tertiary education persist in low income countries (World Bank, 2017a). The gender gap in education may be tied to social norms and differing investments in boys and girls. In the 2014 World Value Survey, 26 percent of the respondents across all countries agreed that a university education is more important for a boy than a girl. Some countries demonstrated a stronger bias than others, as values ranged from 2.6 percent in Sweden to 57.2 percent in Bahrain. Investments in human capital development can be closely tied to beliefs around the relative job prospects and earnings of men and women. A study of siblings in Nepal found that in poorer households, better job prospects for sons had negative spillovers for their sisters’ education (Shrestha and Palaniswamy, 2016). Goldin (1994) observes contexts in which the entry of women into a male-dominated occupation can reduce the stature of the occupation in the minds of

others. She argues that increased visibility for female entrants and their skills, via skill accreditation, can be used to change social beliefs. In the Dominican Republic, educational attainment increases when individuals receive data on the relative earnings of primary school graduates, high school graduates, and university graduates (Jensen, 2010). Thus, greater job prospects for men may result in greater skill investments in men, which perpetuates statistical discrimination against women and the belief that men are more skilled.

Though educational attainment may limit the ability of women to enter into highly skilled jobs, the gender wage gap and employment segregation persist despite convergence in male and female education levels. In the US women’s educational attainment accounted for 2.7 percent of the gender wage gap in 1980, and female educational attainment had exceeded that of men to reduce the gender wage gap by 2011. These effects remained similar in magnitude, even after controlling for industry and occupation variables. Meanwhile, industry and occupation variables accounted for 17.6 percent and 32.9 percent of the gender wage gap in 2011 (Blau and Kahn, 2016), respectively. In the US, employment segregation is falling at a faster rate among those with higher education levels. However, changes are largely driven by the entry of new cohorts of women, suggesting that changing aspirations and social norms that shape the behavior of individuals and firms are central to this transformation (Blau, Brummund and Liu, 2013).

**Figure 5. The Gender Gap in Science, Math, and Computing among OECD countries**



Source: Prepared by authors using data from OECD PIAAC 2015; data from 2012-2015; ages 25 to 64 included  
 Note: Gender gap decreases left to right

In fact, in a study comprising 69 developing countries, increases in female to male ratios of educational attainment are correlated with higher employment segregation by sector among those who are employed. This effect is driven primarily by large sectors. Increases in educational attainment ratios have no significant relationship with occupational segregation, but higher levels of male education are correlated with higher occupational segregation (Borrowman and Klasen, 2017).<sup>3</sup> A study of Ugandan

<sup>3</sup> It is important to note that occupational segregation among those with lower education levels may be more difficult to analyze, as both men and women often work in agriculture, and employment data on specific agricultural activities/products are often not available.

entrepreneurs found that women who enter male-dominated trades, referred to as “cross-overs,” were more likely to have received technical and business training, have better financial literacy skills, and learn through an internship or apprenticeship. Surprisingly, higher educational attainment or years of previous experience did not increase a women’s likelihood of being a cross-over (Campos et al., 2015).

The link between employment segregation and educational choice appears to be stronger than the link with educational attainment. Even in contexts where the gender gaps in educational attainment are negligible, gender differences in fields of education can contribute to employment segregation. For example, in many OECD countries, the gender gap in tertiary education favors women, but the gender gap in tertiary education specialized in math and science, strongly favors men (See Figure 5). In Australia, the ratio of women to men with a tertiary education is 1.23, while the ratio with a tertiary education in math and science is only 0.50 (OECD, 2015b). Data from UNESCO illustrates that female students are disproportionately sorted into humanity and social science in most countries; across 106 countries (where data is available), engineering is considered ‘male-dominated’ in 98 percent of countries (Table 1). On the other hand, education and health are considered female-dominated in 81 percent and 85 percent of countries, respectively. Suggestive evidence from Vietnam indicates that the gender wage gap would not exist if children entered the fields to which they aspired at age 12, and individuals often find their first jobs in their chosen field of specialization. However, there appears to be a shift during secondary education in which girls sort into lower-paid fields (Chowdhury et al., 2018b).

**Table 1. Segregation in Education**

Field of study	Fraction of countries where the field of study is:			Number of countries
	Female dominated %	Male dominated %	Neutral %	
Agriculture	6	74	20	95
Education	81	8	10	106
Engineering, manufacturing and construction	0	98	2	106
Health and welfare	85	5	10	106
Humanities and arts	60	8	32	103
Science	9	75	16	107
Services	16	64	20	95
Social sciences, business and law	29	11	60	107

Source: Prepared by authors using data from World Bank’s Atlas of Sustainable Development Goals 2017.

Note: A given tertiary education program is “female dominated” if the female share of enrollment in the program is 5 percentage points higher than female share of tertiary graduates, “male dominated” if female share of enrollment in the program is 5 percentage points less than female share of tertiary graduates, and neutral if the difference between female share of enrollment in the program and female share of tertiary graduates is less than 5 percentage points.

Beliefs and social norms play an important role in educational sorting and aspirations. In Italy, assigning middle school students to a gender-biased teacher was found to reduce the math performance and self-confidence of girls, while the performance of boys was not affected by teacher bias (Carlana, 2017). Evidence shows that parents can enhance girls’ performance in STEM by emphasizing the importance of math (Cheng, Kopotic and Zamarro, 2017), and serve as role models that improve girls’ aspirations.

In many contexts, individuals appear to have a limited knowledge on potential job options and their relative returns, which reduces their aspirations, educational investments, and entry into particular occupations. Studies from Uganda and Kenya show that women were often unaware of earnings in male-

dominated industries (Campos et al. 2015; Hicks et al. 2015). Thus, providing accurate information about available jobs and their returns, through training, career guidance in schools, mentorship, support from male family members, 'edutainment', and apprenticeships in male-dominated sectors are promising means of convincing women to enter non-traditional sectors. Interestingly, survey data from the UK indicates that women often report higher job satisfaction for the same occupations as men because their optimism and expectations for their jobs and compensation is lower. This surplus in satisfaction disappears in male-dominated workplaces and among those with higher educations (Clark, 1997; Dawson, 2017).

### *Vocational skills*

In addition to formal education, lack of skills can further exclude women from certain sectors and occupations. Technical Vocational Education and Training (TVET) programs can increase prospects for female workers in male-dominated fields, particularly for poorer individuals with low education levels. TVET programs have been tested throughout the world with a mixed record. Such programs often blend training with apprenticeships or internships. In Latin America, TVET or "Jovenes" programs have been largely successful at increasing labor force participation and earnings among female participants (Gonzalez-Velosa, Ripani and Rosas-Shady, 2012; Ibararán et al., 2015; Ibararán and Shady, 2009; Attanasio, Kugler and Meghir, 2011; Attanasio et al., 2015). However, they have a mixed track record in Africa, where enrollment among women was high but attendance and completion rates were often low (Cho et al., 2013; Hicks et al., 2015), which suggests that participating women faced other binding constraints such as mobility, capital, time or network limitations.

A few studies have examined the impact of skills and TVET programs on employment segregation in particular. In a randomized control trial in Nigeria, ICT training with some soft skill training was found to increase women's likelihood of working in ICT and reduce gender-based employment segregation, particularly among women who had self-defeating implicit gender biases at baseline (Croke, Goldstein and Holla, 2017).

As program's offerings and individuals' choice of training and education is often divided sharply along gender lines, changing the menu of available options and the program choices made by women can be central to changing entry patterns into various industries and occupations. For a TVET program in Kenya, providing information on earnings for various occupations increased female enrollment in training for male-dominated occupations. However, women with this information were less likely to complete training and they were not more likely to enter male-dominated trades, suggesting the presence of additional barriers upon entry (Hicks et al. 2015). With an emphasis on encouraging female employment in male-dominated occupations, a training and internship program in Peru led to a decrease in employment segregation in occupation, firm size, and work outside the home (Ñopo et al., 2007).

Programs that collaborate with specific employers and combine TVET with on-the-job experience, life skills training, and job placement support have had more success in Africa (Acevedo et al., 2017; Honorati, 2015). One intervention with adolescent girls in Uganda, which combined vocational skills with life skills and socio-emotional skills, was successful at increasing self-employment and reducing family formation constraints in the face of binding social norms four years later (Bandiera et al., 2017). These programs have signaled the need to investigate the link between socio-emotional skills and women's employment.

### *Socio-emotional skills*

While the current evidence base on socio-emotional skills is relatively weak, several studies suggest a link between socio-emotional skills and employment segregation, directly and indirectly, via formal education. Some evidence in the psychology literature shows that a “growth mindset”, the belief that math ability is malleable and can be developed, is effective in reversing gender gaps in mathematical skill acquisition. A study of middle school students, in which the treatment group was tutored math with an emphasis on the growth mindset, and the control group was tutored without that emphasis, found that the growth mindset reversed the gender gap in math scores such that girls performed equally well (or insignificantly better) than boys with the same treatment. Even minor interventions have short-run effects. An experiment found that when a high schooler (whom the authors argue was seen as a role-model) told 6th graders before a math test that students’ success was due to effort exerted, test scores increased for girls but not boys: girls with this intervention scored 5 percent higher than boys, but girls without this intervention scored 20 percent lower (Kahn and Ginther, 2017). In the Netherlands, classroom experiments among 15-year-olds found that competitiveness explained 23 percent of the gender gap in selection of education stream, after controlling for skill level. Competitiveness was closely tied to gender differences in confidence (Buser, Niederle and Oosterbeek, 2014).

The sociology literature has uncovered a strong link between confidence, social norms, and career aspirations. Lab experiments with undergraduate students suggest that social norms related to gender and performance can result in a gap between self-assessments of ability and actual ability, and these self-assessments influence career aspirations (Correll, 2004). In short, if individuals are told that men are better than women at a task, and men and women perform equivalently, men are more likely to attribute their performance to superior ability and select into jobs that require that task. These findings are supported by a parallel analysis of longitudinal data for 17,424 individuals between 8th grade and their 2nd year of college, which examined performance and self-assessment in math classes, and selection into majors requiring greater quantitative skills (Correll, 2001). Even after women enroll in STEM majors in college, analysis of panel data of college students in the US suggests that less confidence in women’s professional competencies and identities may contribute to their attrition from the field (Cech et al., 2011). In the face of poor grades, men and women are equally likely to change majors, with the exception of male-dominated STEM majors, where women are more responsive to poor grades than men (Kugler, Tinsley and Ukhaneva, 2017). Seron, Cech and Rubineau (2016) use qualitative data to suggest that women’s professional confidence is driven by informal interactions and everyday sexism in teams and internships. In a developing country context, Campos et al. (2015) found that crossovers demonstrated greater self-efficacy, and were less concerned with social judgments. Studies from the Dominican Republic and Jordan demonstrated the effectiveness of soft skills training in increasing self-efficacy, and higher labor market expectations among young women (Acevedo et al., 2017; Groh et al., 2016). However, the link between entry into male-dominated fields, persistence in these fields, and confidence is a key avenue for investment in more rigorous and culturally diverse research.

Several studies have also investigated the correlation between various socio-emotional skills and entrepreneurship. Moreover, some of these socio-emotional skills can be taught. Though these studies have not been designed to prove causation, nor have they examined gender differences in socio-emotional skills, they suggest that entrepreneurship is tied to leadership skills (Cubico et al., 2010), the need for achievement (Cubico et al., 2010), extraversion (Ahmetoglu, 2015), agreeableness (Ahmetoglu, 2015), and lower loss aversion (Koudstaall, Sloof and Van Praag, 2015). A study in Togo found that personal initiative training had significant causal impacts on profits and the introduction of new products for both men and women (Campos et al., 2017). Klinger, Khwaja and LaMonte (2013) found that the relationship between socio-emotional skills and entrepreneurial success seems to differ with culture and region; however, personality characteristics that stood out for entrepreneurs included self-efficacy, the need for achievement, an internal locus of control, a proactive personality, and the need for autonomy.

Research in Kenya found that empowerment training, with a focus on agency, initiative, goal setting, and relationship skills, may have increased sales of cookstoves for both male and female entrepreneurs, with women far outperforming men (Shankar, Onyura and Alderman, 2015).

In summary, targeting educational attainment alone is not enough. Skills programs are most successful if they incorporate soft skills training (developing confidence in particular), change beliefs about women's skills by increasing their visibility, and target other binding constraints, such as time, mobility, information on earnings tied to educational choice, or job placement support. By adopting a more nuanced understanding of employment segregation, policymakers can better develop sustainable skill development with a greater likelihood of female empowerment.

### **3.1.2. Access to Capital**

The gender gap in access to capital is tied to differences in property rights, inheritance, earnings and decision-making power over earnings, financial inclusion, and discrimination in capital markets. Limited access to capital may constrain women's risk-taking ability and acquisition of the human and physical capital required for income generating activities. For instance, limited access to capital may inhibit women's ability to invest in cash crops or engage in particular business types. This hypothesis seems to find support in the fact that female businesses are concentrated in low-return industries such as garments, food processing, and hospitality (De Mel, McKenzie and Woodruff, 2009; Bardasi, Sabarwal, and Terrell, 2009), and evidence that lack of capital is a key barrier to business growth (Campos et al., 2015; Blattman, Fiala and Martinez, 2013).

Access to assets can be key to female investment in self-employment non-farm work. A Sri Lankan study shows that men and women had similar access to formal loans, but most firm owners used their own savings and family loans to finance their businesses. Household assets were associated with higher returns to business, possibly due to greater investment or less diversion of investment funds for household needs (De Mel, McKenzie and Woodruff, 2009). In Senegal, inheritance of non-land assets increased a woman's likelihood of entering non-farm work (Lambert, Ravallion and van de Walle, 2011).

While many studies have examined the impact of policies surrounding inheritance and land tenure security (Hallward-Driemeier and Hasan, 2013; O'Sullivan, 2018) on women and agricultural productivity, few have focused on employment segregation outcomes. Some evidence from Africa shows that women's lack of control over productive resources, and their ownership of smaller plots may inhibit their ability to invest in cash crops and reduce exporters' interest in signing contracts with them. Thus, even when women provide the labor for profitable crops, they often have limited legal rights to its profits. (Croppenstedt, Goldstein and Rosas, 2013).

Without access to assets, women must often turn to credit and may face discrimination in credit markets. In economies with less developed credit records, lenders may use demographics as signals of creditworthiness resulting in gender-based discrimination. Only 47 out of 189 countries have a law that prohibits discrimination by creditors on the basis of gender (World Bank, 2017b). According to a survey of 34 countries, most of which are located in Eastern Europe and Central Asia, female-run firms were 5 percent less likely to receive a loan than male-run enterprises and pay 0.5 percentage points more in interest on loans taken (Muravyev, Talavera and Schäfer, 2009). Increased competition in capital markets could play a role in stemming discrimination (Becker, 1971). However, there is also evidence that women who need credit do not apply for it: 46.9 percent of female-owned enterprises were likely to not apply, compared to 33.8 percent of male-owned enterprises (Muravyev, Talavera and Schäfer, 2009).

Bardasi, Sabarwal, and Terrell (2009) find similar results for Eastern Europe and Central Asia. This may be linked to the earlier discussion of confidence and aspirations.

Cash transfer programs are often flexible sources of capital, as they can be used directly for business investment, skill investment, or household expenses. However, evidence of their effectiveness is mixed. Studies in Sri Lanka (De Mel, McKenzie and Woodruff, 2009) and Ghana (Fafchamps et al., 2011) did not find significant returns to cash grants for female-run businesses, particularly among businesses with low profits before the intervention, though in-kind grants showed more promise. In Uganda and Chile, grants offered in combination with training were more successful in encouraging entry into skilled trades and self-employment—as a transition from agriculture, and in increasing earnings and capital stock (Blattman, Fiala and Martinez, 2013; Martinez, Puentes and Ruiz-Tagle, 2018). The provision of cash transfers may not be effective if women are already sorted into low return sectors. De Mel, McKenzie and Woodruff (2009) find that gender gaps in returns to capital are larger in sectors that are dominated by one gender. Microfinance may also be effective in promoting business growth; however, results are often dependent on targeting and training (Todd, 2012), and policymakers should be aware that short repayment periods and high interest rates may not be conducive to business growth (Blattman and Ralston, 2015).

In summary, the benefit of financial inclusion programs may vary with local practices and the types of funding used for business investment, decision-making power of women over new capital from earnings or grants or loans, the division of financial responsibility for household expenses, and opportunities to start businesses with high enough returns to cover the cost of loans.

### **3.1.3. Intra-Household Allocation of Time**

Around the globe, domestic and care responsibilities fall disproportionately on women. Although the care work provided by women is valued at 13 percent of global GDP (Woetzel et al., 2015), care is a public good for which there is no market mechanism for payment (England and Folbre, 1999). The unequal allocation of care responsibilities between male and female household members adversely affects women's ability to work in the jobs that they may desire (World Bank, 2015b) or jobs with longer hours or limited benefits, which contributes to employment segregation. Lopsided domestic responsibility may also force women to choose to work at home or close to home, which restricts their choice of occupations.

The unequal allocation of care responsibilities is reflected in the gender gap in labor force participation over the life cycle. Though the exact pattern of women's labor force participation differs with culture, policies, and time; a reduction in labor force participation at the time of marriage and childbearing is nearly universal. In contrast, men's labor force participation demonstrates an inverse U-shape over the life cycle. The evolution of this phenomenon has been closely studied in the US, where women are entering the labor force at higher rates and child bearing has been delayed—so that they have the opportunity to develop their careers and gain occupational attachment before their first birth. While women previously left the workforce permanently at the time of their first birth, they are now more likely to stay in the workforce (and use paid leave) or rejoin the workforce (Goldin and Mitchell, 2017).

The unequal intra-household allocation of time has also been associated with an increasing gender wage gap over women's life-cycle. Goldin et al., (2017) find that the wage gap increases with age and the widening can be attributed to men's greater ability or preference to move to higher paying firms and positions and their better facility to improve their circumstances within firms. Both factors increase with greater family responsibilities among women. At the same time, Blau and Kahn (2016) document the

transformation in social norms within families in the US and note that the husband-wife wage gap has decreased such that the share of families in which the wife out-earns her husband has increased from 8.2 percent in 1988 to 15.4 percent in 2012.

Despite changes, social norms around gender, care and domestic responsibilities continue to affect women's wages and choice of employment. The gender wage gap is directly tied to views on women's role in household activities, views that have only relaxed marginally among younger generations (Muñoz Boudet et al. 2013). Among respondents of the 2014 World Values Survey, 49.1 percent agreed that when a mother works for pay, her children suffer. In the US, greater hours spent on household work, particularly daily activities such as cooking and cleaning, are still associated with lower wages for women regardless of marital status (Hersch and Stratton, 2002). The number of unpaid hours worked by men in the home is often invariant to the number of paid hours that women work outside of the home (World Bank, 2011). Though women crossoverers in Uganda worked an equivalent number of hours in the household than non-crossoverers, married women were less likely to cross over into male-dominated trades (Campos et al., 2015).

Due to care and domestic responsibilities, many women experience time poverty and place greater value on jobs that allow time flexibility. Women are more likely to select into jobs that allow temporal flexibility and occupations that allow for part-time work. Across the population aged 25 to 54 years old in OECD countries, the share of employed men in part-time work ranged from 1.1 in Hungary to 9.2 percent in Ireland. For women, this value ranged from 4.7 percent in Hungary to 54.9 percent in the Netherlands, with an average of 22.3 percent (OECD, 2015a). Notably, the lowest gender gaps in part-time work were found in Eastern European OECD countries.

As women may leave the workforce temporarily at the time of marriage or childbirth, they may also select into jobs that are easily transferrable to replacement workers, or jobs that build general skills that are more transferable to other firms, rather than jobs that build occupation-specific skills. In Sweden, after their first birth, women were more likely to sort into jobs that were family friendly and substitutable for one another (Hotz, Johansson, and Karimi 2017). Data from Vietnam also suggests that women sort into occupations that have lower wages but require fewer hours and have a formal contract, paid leave, health insurance, or social insurance (Chowdhury et al., 2018b).

Policies that reduce gender gaps in time spent on childcare and domestic responsibilities can simultaneously increase female labor force participation (Attanasio and Vera-Hernandez, 2004; Halim, Johnson and Perova, 2017) and reduce employment segregation. Such policies come in many forms: policies that target delays in marriage or childbearing, lowering fertility rates, increasing the opportunity cost of women staying at home, encouraging and incentivizing men to increase their involvement with childcare and sharing household responsibilities, encouraging pre-school, or reducing the cost of caring for children. Introduction of new technology and access to infrastructure such as electricity, gas, pipe water, transportation, and meal preparation can also reduce the overall workload of domestic responsibilities.

#### **3.1.4. Safety and Mobility**

Social norms, gender-based violence, safety and perceptions of safety may constraint women's mobility outside of the home, thus limiting their possibilities of skill acquisition and access to income-generating activities. Global data suggests that women's mobility is more restricted than that of men. Though men and women in the 2014 World Values Survey indicate similar levels of perceived safety on average, women are 14 percentage points more likely to state that they prefer to not go out at night due to safety

concerns. In many countries included in the Demographic and Health Surveys (2005-2016), both men and women believe that it is justified for a husband to beat his wife if she goes out without telling him. This belief is at times more frequent among women than men. For example, in India, 29.0 percent of women agreed with the statement compared to 23.3 percent of men; and in Ethiopia, 43.2 percent of women agreed compared to 25.5 percent of men (ICF, 2017). Thus, mobility restrictions may at times originate in the household.

Mobility restrictions can affect women's choice of school, their ability to engage in businesses based out of the home, jobs on the other side of town or jobs that require night travel, as well as their participation in new industries in urban areas or in other states. Borker (2017) found that women in Delhi paid significantly more for transport to college and selected lower quality institutions due to safety concerns. Labor data (BBS, 2015) from Bangladesh reveals that the share of females working inside or right by their homes was 46 percent, compared to 95 percent for males, if the agriculture sector was excluded. Evidence from Sri Lanka further shows that the customer-base for female-owned businesses is significantly smaller geographically than that for men. While 48 percent of female owned firms had all of their customers within 1 kilometer, this only held for 30 percent of men. Additionally, 74 percent of female-owned businesses operated out of the homes, compared to 52 percent of male-owned businesses (De Mel, McKenzie and Woodruff, 2009). Nevertheless, although self-employed businesses are more likely to be home based for women than for men (World Bank, 2011 p. 207), it is unclear how much of this can be attributed to time and domestic responsibility constraints, relative to safety and mobility constraints.

Fear of harassment may also inhibit women's entry into male-dominated occupations. Women who enter male-dominated trades in Uganda are more likely to experience threats to shut down their business and unwanted sexual proposals (Campos et al. 2015). Research on effective policies for reducing this safety and mobility constraints is sorely lacking. However, several programs, such as UN Habitat's Safer Cities Program, are currently underway to improve data collection on safety, better incorporate gender analysis into city planning, and provide safer transport options for women. A number of public transportation systems around the world have introduced new mechanism to address risk of violence against women and girls. For example, a new program, called "Via Lilas" in Rio de Janeiro installed electronic kiosks, placed at stations along "Supervia" suburban rail lines, which contain helpful information about how women can seek support for gender-based violence. Their impacts on women's jobs outcomes are yet to be studied.

### **3.1.5. Networks and Role Models**

Employment segregation can result in smaller and weaker networks for women and the presence of fewer female role models, which further perpetuates segregation. Networks are central to referrals and job acquisition. Evidence from Malawi shows that existing networks put women at a disadvantage. Men and women systematically refer fewer female than male candidates, despite the presence of qualified women in their networks and incentives to refer female candidates (Beaman et al., 2014). Weiler and Bernasek (2001) suggest that the weakness of female networks has contributed to the influx of women into entrepreneurship in the US. Networks also determine opportunities for mentorship. A small study of academia in Australia provides suggestive evidence that women with mentors were more likely to be promoted, received more grant income, and had better perceptions of their ability as academics (Gardiner et al., 2007).

While networks are directly tied to job acquisition and promotion in particular fields, networks and role models also shape women's expectations regarding their ability to succeed in a given field, which

influences their aspirations and skills acquisition. Having a parent employed in a STEM occupation increases a child's probability of majoring in and working in STEM, with a larger effect for girls (between 10 and 17 percentage points). In addition, girls with mothers employed in STEM were 7 percentage points more likely to be employed in the hard sciences (Cheng, Kopotic and Zamarro, 2017). Parents were found to be a major source of information for students choosing their educational stream and future occupations in Moldova (Levin et al., 2016). The presence of job prospects and visibility of successful individuals in one's community can increase aspirations among both parents and children. One notable example from India was a case in which recruitment services in the business process and outsourcing (BPO) were offered to women in rural villages. The presence of women in high return occupations in the BPO sector resulted in delays in marriage and childbirth and increased investment in education, suggesting an improvement in aspirations (Jensen, 2012). Effects may have been particularly pronounced because the program introduced work in the ICT sector, which had weak gender norms attached. Similar results were found with an urban population in Kenya (de Azevedo, Davis and Charles, 2013). In Ethiopia, a video presentation on those who succeeded in agriculture or small business resulted in higher aspirations, more saving, and a greater likelihood of enrolling their children in school, particularly when a larger density of individuals had viewed the documentary (Bernard et al., 2014).

Additionally, increasing exposure to women in counter-stereotypical roles can transform social norms and reduce barriers to entry or promotion. A quota for local female politicians in India closed the gender gap in aspirations for both parents and adolescents, resulting in more schooling and fewer domestic responsibilities for girls (Beaman et al., 2012; World Bank, 2011). Several studies from the psychology literature have tried exposing subjects to female role models in a lab setting in the US or Europe. Unexpectedly, studies suggest that exposure may result in more negative self-concept, greater identification with stereotypes that identify women as less capable than men, and lower career aspirations; however, this trend is reversed if role models are framed as similar to experimental subjects, with a similar educational background or part of the same in-group (Asgari, Dasgupta and Stout, 2012; Stout et al., 2011). Moreover, one lab experiment in the US showed that subtle exposure to female leaders improved women's leadership behavior (Latu et al., 2013).

A mentor or family member may also reduce the influence of social norms on employment segregation. Women with a male role model in Uganda were 12 to 22 percent more likely to enter male-dominated industries. Qualitative evidence indicates that a suggestion or job offer from a family member or friend can nudge women into new industries. However, female entrants into male-dominated sectors can feel excluded from the network of their new occupation, and finding partners and suppliers may present a problem (Campos et al., 2015).

### **3.2. LABOR DEMAND-SIDE**

Even in an environment where women are free from the labor supply constraints posed above, several demand-side factors may still contribute to gender-based employment segregation in labor markets. Women with adequate qualifications may be deterred from entering an occupation if they cannot find jobs that are attractive. This may result in a sizable latent labor supply in some countries.

In this section we discuss labor demand-side barriers in the form of gender-biased recruitment, selection and hiring practices, evaluation and promotion practices, and overall workplace culture. While these factors play a role in horizontal employment segregation they are particularly manifested in the pervasive and "leaky" hierarchy pipeline of vertical segregation (See Box 2). Demand-side barriers deserve

particular strategic attention, as market forces may be slow or inadequate to improving them; the business cost of discrimination is often observable on a long term or aggregate scale, rather than by individual managers or units.

The identification of which demand-side barriers are in operation is key to developing a strategy for change. These barriers are highly specific and vary across firms, with industry and competitive environment. Moreover, many actionable strategies are difficult to evaluate in a rigorous way. While some strategies—particularly with recruitment, selection and hiring—can take advantage of individual randomization and lab settings, firm-level randomization and experimentation are often not practical. Thus, the studies referenced below often take advantage of quantitative data in the psychology and sociology literature, and they rarely establish the direction of causation.

### **Box 2. “Evidence of Vertical Segregation”**

Not only do women face constraints to entering professional jobs, but also large barriers to progression, and a glass ceiling in corporate promotions. For example, women in China and India make up 50 percent and 42 percent of university graduates respectively, 55 percent and 29 percent of entry-level positions, and only 21 percent and 9 percent of mid-to-senior management, 9 percent and 3 percent of executive committees, 8 percent and 5 percent of boards, and 1 percent and less than 1 percent of CEOs. Similarly, in Australia, Indonesia, and Malaysia, women account for over half of university graduates, with large drop-off in share of managers (Süssmuth-Dyckerhoff, Wang and Chen, 2012).

The presence of women in the upper echelons of corporations was noticeably better among 55 firms surveyed in Africa. However, drop-off differed considerably by industry. While health care had the highest female employment rates overall, it also suffered from the highest leakage with women making up 81 percent of non-management, 62 percent of middle management, and 39 percent of senior management (Moodley et al., 2016). Analogous patterns in drop-off can be observed among US fortune 500 companies (Barsh and Yee, 2017), in academia (Zinovyeva and Bagues, 2010), and within STEM fields (Lundberg and Startz, 2017).

Employers are not actively addressing these issues: 78 percent of interviewed executives in Africa, 70 percent in Asia, and 47 percent in Europe indicated that gender diversity was not a priority for their companies (Süssmuth-Dyckerhoff, Wang and Chen, 2012; Devillard et al., 2016; Moodley et al., 2016). On the contrary, a few overarching practices have been associated with high diversity companies: long-term policies to address gender gaps, a commitment by the CEO to integrate diversity at all levels, and holistic programs with change agents, role models at all levels, and a clear communication strategy (Devillard et al., 2016).

### **3.2.1. Recruitment, Selection and Hiring Practices**

*Gender differences in recruitment and decision to apply*

Job posting themselves often reflect gender norms that increase and entrench employment segregation. While some employers state their gender-preferences for a prospective employee outright, other recruitment techniques may discourage female applicants unintentionally. A study of 36,000 job ads in China revealed that 19 percent of national civil service job postings were listed as male-preferred or male-only. This proportion varied with departments: 56 percent of job postings at China’s National

Bureau of Statistics were male-preferred or male only, compared to 25 percent of job postings at the Civil Aviation Administration. Women-only jobs listings were typically for housekeeping, child care, or administrative assistants. Similar patterns were observed in the private sector, where many job descriptions also required a particular marital status or physical traits (heights, scars, etc.) for women, or used beautiful women to attract men to apply (Human Rights Watch, 2018). A similar study in India, analyzing over 800,000 job ads from a popular job website, found that close to 40 percent of job postings listed a gender preference, with the highest rates of gender targeting in elementary, machine-related, service, sales, and clerical jobs. The lowest rate of gender targeting was found in business process outsourcing. Jobs that targeted women offered lower compensation, with the exception of clerical work. Men were generally preferred for jobs requiring more experience, sales-related jobs, machine-related jobs, and elementary skill jobs. Meanwhile, women were preferred for service, clerical, and housework or caregiving jobs (Chowdhury et al., 2018a).

Several studies, primarily from North America, have illuminated more subtle factors of job postings that can deter women from applying: male wording that discourages belongingness, competition, pay structures with higher uncertainty, and ambiguity in job descriptions. Job posts with more “male” wording appear to discourage female applicants (Flory, Leibbrandt and List, 2014). Laboratory experiments by Gaucher, Friesen and Kay (2011) demonstrated that particular “male” words such as “leader”, “competitive”, and “dominant” were associated with male-dominated occupations. Meanwhile, the presence of “female” words such as “support”, “understand”, and “interpersonal”, did not vary between male and female-dominated occupations. Researchers then randomly varied the use of the “male” words in job postings and found that women were less attracted to jobs using “male” words, and this aversion was not driven by differences in perceived skill, but by belongingness (Gaucher, Friesen and Kay, 2011).

A large literature has examined entry into competitive environments, which are typically male dominant. Though laboratory experiments are context-specific, they indicate key considerations in encouraging the recruitment of women. Datta Gupta, Poulsen and Villevall (2013) found that women have a lower propensity to compete, choosing a piece-rate payment system rather than a tournament, in which larger proportions of compensation are offered as awards for individual performance. While the gender of the opponent did not significantly affect the female choice to compete, men were more likely to choose to compete if they knew they are competing with a woman rather than a man. The difference is particularly concerning when behavior studies suggest that employers may punish those who choose the piece rate payment system (Heinz, Normann and Rau, 2016). Thus, if women choose less competitive environments, employment segregation can perpetuate the gender wage gap. Niederle and Vesterlund (2007) found male preferences for competition were driven by overconfidence rather than performance, risk, or feedback aversion. Additional experimentation (Niederle, Segal and Vesterlund, 2013) shows that guaranteeing equal representation among winners can increase high-performing women’s propensity to enter competition; in this way, affirmative action could increase female participation without reducing the quality of winners.

However, experiments in the field in the US reveal additional nuance. For the job website, LinkedIn, Gee (2014) varied whether job seekers could see the number of individuals who had begun an application for the viewed posting. The likelihood of applying was 6 percent higher for women who could see this information, but it did not vary with the number of perceived competitors. This indicated that women were ambiguity averse, but not competition averse or influenced by herding behavior. The provision of information also increased the likelihood of a female job seeker to apply for a job perceived as male. Though women do not seem to avoid jobs that seem more competitive to obtain, Chapman et al. (2005) found that pay structure based on competitiveness mattered more to women than men in determining job attractiveness. Moreover, women were less sensitive to the perceived fairness of a job’s selection system than men. Similarly, Flory, Leibbrandt and List (2014) found that women were often averse to

jobs with competitive pay structures and greater pay uncertainty, particularly if they had valuable alternative job options. These effects disappeared if compensation was only mildly dependent on individual performance, or if it was based on team performance.

### *Gender differences in candidate selection*

There is also significant evidence that women face discrimination in the hiring process. A series of studies have undertaken a particular “audit” experiment around the world, in which researchers change the names on resumes to indicate a different gender and examine different rates of call-backs while controlling for supply-side variables on qualifications, experience, and age (Moreno et al., 2012; Bravo, Sanhueza and Urzúa, 2008). Considering employment segregation by occupation, one study in England examined bias for four occupations with different female representation: engineer (4.7 percent female), computer analyst programmer (20.8 percent female), chartered accountant (30.6 percent female), and secretary (97.3 percent female). Bias against women was revealed in engineering, but bias against men was revealed in the remaining occupations. This may suggest that employers with experience working with women reduce their bias towards female applicants (Riach and Rich, 2006). In a laboratory setting, Correll, Benard and Paik (2007) randomized the parental status of individuals in application materials and found a “motherhood penalty” in which women with children are judged as less competent and committed than childless women, and a lower salary is recommended for them. In contrast, men with children are perceived as more committed and a higher salary is recommended for them, compared to childless men. Randomizing information on application materials with actual employers, Correll, Benard and Paik (2007) found childless women received 2.1 times as many callbacks as women with children. Differences were not significant for men. These findings have been confirmed by large employment datasets in a dozen industrialized nations (Benard, Paik, and Correll, 2008). However, no known research has been conducted on whether the magnitude of this penalty differs by job type.

Several studies have examined discrimination in academia using audit studies. Some would expect discrimination in academia to be particularly low, given the emphasis on evidence in the scientific process. However, in the pathway to academia, Milkman, Akinola and Chugh (2015) found that when students sought mentoring, faculty were more responsive to white males than women and minorities. Rates of bias were observed in each field except humanities and fine arts, and rates of bias were higher in business, education, human services, and engineering and computer science, and in private institutions relative to public institutions. When examining resumes for lab managers, science faculty from research-intensive institutions rated applications with male names as more competent than identical applications with female names. Faculty who demonstrated this gender bias were more likely to hire and offer career mentoring to male applicants (Moss-Racusin 2012). In both studies bias did not vary with the gender of the faculty doing the hiring. Moreover, upon reading the abstract of the Moss-Racusin et al. (2012) study, men were more likely than women to question the study’s credibility if it reported gender bias than if it did not report gender bias. The gender gap was stronger among STEM-faculty than among non-STEM faculty or the general public. Thus, both men and women exhibit bias in hiring women, and this behavior is difficult to overcome as beliefs are not updated in response to new information. These considerations are particularly concerning given the increasing use of artificial intelligence in sorting through resumes, and their potential to develop algorithms that mechanize discrimination against women (Dastin, 2018).

However, such studies only reveal initial bias, and do not capture bias in the interview process and hiring itself. In one of the few studies to capture bias later in the hiring process, Goldin and Rouse (1997) examined the selection of musicians for orchestras and found that if identity-hiding screens were used during an audition, the advancement of female musicians in the hiring process increased by 50 percent. Furthermore, examining the details of the hiring and evaluation process is key. For instance, it has been

demonstrated that evaluators are more likely to focus on individual performance and less likely to rely on cognitive shortcuts such as gender stereotypes, if they utilize joint evaluations, rather than individual ones (Bohnet, Van Geen and Bazerman, 2015).

Simple regression analysis, which does not demonstrate causation, suggests that discrimination affects the short-term and long-term positions that women obtain. Carter and Silva (2010a) studied the career profiles of 9,927 alumni of 26 leading business schools in Asia, Canada, Europe, and the US who graduated between 1996 and 2007. Examining the first post-MBA job placement for alumni, the study finds that women were placed a lower level, on average, than men, even after controlling for years of experience, industry, and global region. This relationship continued to hold when the sample was isolated to those with CEO aspirations or those with no children. These initial placements can have important ramifications for promotions and one's career trajectory, and together with women's lower likelihood of negotiating and benefiting from negotiation (see 3.2.3), may explain short and long term vertical segregation.

Upon examining the motivation behind this discrimination, some theorize that the presence of women reduces the prestige of male dominated professions, such that men try to exclude women in order to protect the prestige of the occupation (Goldin, 1994). Even if no bias exists, the influence of networks may imply that a larger concentration of men in particular occupations will reduce women's likelihood of rising to the top of the list. Wage subsidies may be one method of helping women compensate for smaller networks, particularly at the time of labor market entry (Groh et al., 2016).

The described studies suggest key changes that employers can make in the recruitment, selection and hiring process to reduce employment segregation, though evidence is incomplete. Each of these changes require employers to identify and acknowledge the bottlenecks that are relevant to them, develop a strategy and appropriate metrics, and demonstrate a serious commitment to this strategy. Importantly, some of these are low-cost changes: the provision of more information in job postings, consideration of "male" wording in job postings, changes in compensation structure, affirmative action to compensate for gender differences in overconfidence, the removal of names, marital status and information about children before screening resumes, encouragement of gender-blind steps in the hiring process when possible, discouragement of questions related to an applicant's family, less reliance on networks and informal pathways in hiring, establishing unbiased and objective recruitment policies, evaluating candidates simultaneously and comparatively rather than individually, the use of skill building programs tied to job placements, and experimentation with the negotiation process. Firm-determined quotas or incentives for hiring women may be a promising solution, particularly in combination with measures to address the gender gap in application rates.

### **3.2.2. Evaluation and Promotion Practices**

Women who have "survived" the barriers in recruitment, selection and hiring as well as in the workplace, may still face additional obstacles when climbing the corporate ladder. A survey of mid and senior level managers found that women have equivalently high ambition, but they are 15 percentage points less likely to believe they will achieve that ambition given the current workplace environment (Devillard et al., 2013). This finding is particularly concerning if individuals are more likely to attrite if they have no hope of positive feedback and promotion. Evidence suggests that women may be placed in jobs with lower growth potential, not rewarded for positive behavior in firms with particular values or corporate cultures, and evaluated using different criteria as those used for men. Unfortunately, field-experiment evidence is particularly difficult to produce for promotions and performance evaluations, so the discussion below largely depends on survey results.

The presence of women in the upper echelons of the corporate hierarchy can be good for business. In the US, the proportion of female corporate directors was found to be correlated with the number of female officers and their earnings (Billimoria, 2006). In a survey of board directors in the US, Adams and Ferreira (2009) found suggestive evidence that greater gender diversity on boards resulted in better attendance and more stringent monitoring. Moreover, Süßmuth-Dyckerhoff, Wang and Chen (2012) demonstrated the importance of female behavior and values for organizational health. They examined which leadership behaviors influenced nine “pillars” of organizational health, and gender differences in these behaviors. Women were more likely to exhibit behaviors in people development (teaching, mentoring, listening to needs and concerns), defining expectations and rewarding achievement, and focusing on building respect and considering the ethical consequences of decisions. Women were slightly more likely to inspire and encourage participative decision making. These behaviors are tied to the leadership team capabilities pillar, work environment and values pillar, accountability pillar, direction pillar, and motivation pillar. Men were more likely to exhibit individualistic decision making, monitor individual performance, and take corrective action. These results are supported by Gallup poll results indicating that employees of female managers are more engaged, and that female managers themselves are more engaged than male managers (Fitch and Agarwal, 2014), though this may be influenced by selection bias and choice of occupation.

As promotions result in greater visibility of successful women, it can also be key to changing the social and workplace norms that underlie gender-biased workplace practices, policies and culture. Spillovers, from higher rates of women in management positions, can reduce leakage and increase female participation in occupations lower on the organizational hierarchy, as observed in Norway (Kunz and Miller, 2014) and among US Fortune 500 companies (Billimoria, 2006). Promotions may beget promotions if mentorship is encouraged among women (Carter and Silva, 2010b). Women in leadership positions may also be more sensitive to barriers faced by others, and directly target the supply-side and demand-side constraints to employment segregation. However, the presence of women in leadership positions may not result in greater inclusion of women throughout the hierarchy. Women and men may exhibit similar bias against women (Milkman, Akinola and Chugh, 2015; Moss-Racusin, 2012), or there may be backlash. In Italy and Spain, introducing gender quotas on scientific committees did not increase the proportion of women who qualified for professorships, and reduced the selection of women (in mixed-gender evaluation teams relative to all-male evaluation teams) if evaluators were not familiar with an applicant’s research area (Bagues et al., 2015).

Placement in particular positions at the time of entry is a key component of promotion potential. According to leadership development experts, 70 percent of employment development comes from on-the-job experiences that provide the challenging opportunities required for learning and influence. However, all jobs on the same level may not provide these opportunities. Carter and Silva (2010a) characterize these “hot jobs” as those involving highly visible projects, mission-critical roles, and international experiences. Similarly, Devillard et al. (2016) differentiates between line roles, which focus on core operations, such as strategy and finance, and staff roles which focus on company support functions, such as human resources and legal. Both survey studies find that women are underrepresented in hot jobs and line roles, which may place them on a lower career trajectory on average, relative to men. In this way, horizontal employment segregation into different occupations can result in long term vertical segregation. Women may not be selected for hot jobs or thrive after obtaining these roles if workplace values are not aligned with gender differences in behavior. Women’s aversion for competition-based pay (Heinz, Normann and Rau, 2016; Datta Gupta, Poulsen and Villeval, 2013; Azmat and Petrongolo, 2014) and making ethical compromises (Kennedy and Kray, 2014) may also inhibit their interest in line roles or ability to climb the corporate ladder. According to one survey of executives, 40 percent of women and 30 percent of men believed that women’s leadership and communication styles were not compatible with top management (Devillard et al., 2013).

A survey in Europe found that only 30 percent of women believed that their company's evaluations system treated men and women equally (Devillard et al., 2016). Several studies support these findings. Implicit attitude tests in the US showed that men and women were similarly biased against women in authority positions, while women were more explicitly egalitarian than men (Rudman and Kilianski, 2000). Another lab experiment with undergraduate students found that when gender-typed tasks were completed by a woman, the women were deemed less competent than if they were completed by a man, and they were deemed less likeable and more hostile—and being disliked can have negative consequences for one's performance evaluation (Heilman et al., 2004). Among recent college graduates in Jordan, women's employment and earnings were sensitive to their mental ability and English skills, which was not the case for men. Moreover, extraverted women were punished and extraverted men were rewarded with higher employment (Groh, McKenzie and Vishwanath, 2015). Another survey found that male and female MBA graduates were equally likely to take a nontraditional career path before returning to full-time work in the private sector. However, women paid a penalty in career advancement and men did not. Here, nontraditional work encompasses part-time work, or working for a nonprofit, the government, or educational sectors (Carter and Silva, 2010a). This devaluation of female work has had negative ramifications for earnings (Levanon, England and Allison, 2009).

It appears that gender-based differences in evaluations may be explained by role congruity theory, the idea that disparities between behavior and gender stereotypes results in prejudice. In this way, social norms around identity can alter the criteria for evaluations away from those that align with productivity. Rudman and Glick (2001) provide suggestive evidence that hiring biases require that women who demonstrate agency (self-promotion and competence) must compensate with niceness (interdependence and cooperation) to be selected. Kennedy, McDonnell and Stephens (2016) found that female attorneys in the US were held to higher ethical standards and were punished disproportionately in disciplinary cases. The gender disparity in punishments was attenuated when more female judges were present on disciplinary panels. Lab experiments on negotiations suggest that women who initiate negotiations are punished for it (Bowles, Babcock and Lai, 2005); this assertive behavior is often punished for being less feminine, while female leaders often face backlash for not being assertive enough (Amanatullah and Tinsley, 2013). In anticipation of backlash, women choose to negotiate when they believe negotiations will be successful (Exley, Niederle and Vesterlund, 2018), such as when they advocate on behalf of others rather than advocating for themselves (Amanatullah and Morris, 2010).

The lingering perception against women as business leaders is another reason that women are not promoted to management and executive level at the same rate as men. The World Values Survey Wave 6: 2010-2014 asked the following question "On the whole, men make better business executives than women do?" Across the world, the proportion of respondents who disagree or strongly disagree with the statement ranges from as high as 90 percent in Sweden, 72 percent in Germany, to 43 percent in Japan, 35 percent in India and 20 percent in Egypt. Nevertheless, it may be possible to change perceptions of female performance through exposure to female leaders. After 10 years of quotas in India, voter perceptions of female leadership were altered, and women were more likely to stand for election and win (Topalova et al., 2008).

In summary, to reduce the gender bias in evaluations and promotions, employers must examine gender gaps in worker placement in growth-oriented jobs using comprehensive company data; the source of these gaps, ensuring that individuals are informed of and asked about available opportunities; the firm values that are key to company success; and the value system used for performance evaluations and promotions. Kalev, Dobbin and Kelly (2006) examined data from 708 private companies in the US, to find that diversity was most improved among employers that established managers or a committee responsible for diversity, which magnified the impact of other efforts, such as training, mentoring, and affirmative action.

### 3.2.3. Workplace Culture

In addition to practices and policies regarding recruitment, selection, hiring, promotion and evaluation, other aspects of workplace culture can be a critical deterrent or magnet for women to enter, stay, and advance in a job. The culture of a workplace is what gives an organization, firm, office or team its unique character, and it is an often overlooked source of employment segregation. It encompasses everything from its mission, vision and values, to its leadership, management (e.g. structure, hierarchy, systems, procedures), practices and policies (e.g. attendance, dress and conduct codes, wellness and work/life balance), workspace (e.g. infrastructure, equipment, allocation), people (e.g. gender, skills, experience, personality), and interactions and communication (e.g. degree, type, frequency), among other factors.

Values such as collaboration, reciprocity, and ethical behavior may vary with workplace and industry, and affect women's rates of retention and promotion. Gender differences in inclusion and perceptions of performance may be caused by a misalignment between individual and team values on leadership, competition, demonstration of confidence and warmth, assertiveness, ethics, trust and reciprocation. For example, a mismatch between collaborative and top-down leadership styles may result in low valuation of an individual's work, even if both methods can be strategically beneficial. However, it is unclear if this happens on a large scale with regards to gender. Carter and Silva (2010a) found that male and female MBA graduates often left jobs for similar reasons. Nevertheless, women were more likely to leave their first job because of a difficult manager, while men were more likely to leave their first job to seek money. Kennedy and Kray (2014) found that women were less willing to make ethical compromises in work settings, and if they were assigned fields with more immorality, their interest was reduced. Finally, Croson and Buchan (1999) found that men and women were equally likely to trust a colleague, but women reciprocated in greater magnitude than men.

Inclusion is not only central to interest (Cheryan et al., 2009) and enjoyment, but also to networking and promotional opportunities (Heilman et al., 2004). An employee's sense of inclusion may depend on his or her ability to socialize and network in the workplace, common conversation topics, the ambiance of the place itself, and workplace respect. For example, if most individuals in a workplace are men, and they converse and network in the sports and gaming domains, women who are not interested may feel excluded, or others may not consider them to be part of the team. In an experiment, Cheryan et al. (2009) showed that if group stereotypes are incompatible with one's identity, the individual will avoid the group. The researchers extend this to employment segregation and found that changes in ambiance and environment can change interest of new entrants: in the experiment, the removal of objects stereotypical of computer science in classrooms (e.g. popular culture posters) was found to elevate women's interest in computer science relative to that of men's. Qualitative analysis of engineering students in the US suggests that women who enter engineering fields are often deterred by team activities and internships where they are pushed into "social" roles or feel they are treated with condescension (Seron, Cech and Rubineau, 2016). One theory put forward by Akerlof and Kranton (2000) suggests that an individual's welfare may suffer if their actions differ from identity-based prescriptions for their behavior; if "male" traits are common in male-dominated occupations, women may adopt these traits to assume the identity of their occupation, though it is contrary to their preferred behavior.

Fear of harassment can also be a deterrent to entry or reason for exit, and there is suggestive evidence that it is more likely to occur in male-dominated workplaces (Berdahl, 2007) and organizations with large power differentials between organizational levels (McDonald, 2012). In male-dominated workplaces, harassment may be motivated by the belief that a woman's presence threatens his masculinity and identity (Akerlof and Kranton, 2000; Goldin, 1994), and may target women who have more "masculine" traits that defy gender norms (Berdahl, 2007). In the latter case, as determined by a survey, "masculine" traits included being assertive, dominant, or independent. Finally, one lab experiment indicated that

exposure to sex-typed images of women, relative to professional images, made men more tolerant of instances of sexual harassment (Dill, Brown and Collins, 2008).

Harassment may take the form of sexual coercion, unwanted sexual attention, or gender harassment whereby individuals convey hostile or offensive attitudes towards members of one gender (Lim and Cortina, 2005). Prevalence estimates of sexual harassment in the workplace have a wide range, as reporting may vary substantially with the question asked, who is asking, and the respondent's work culture and environment. Even when the same instrument is measured over time, it is unclear if increased rates of sexual harassment is indicative of more harassment, better understanding of the definition of harassment, or openness to reporting. Still, sexual harassment is consistently linked with lower job satisfaction and productivity, absenteeism, and withdrawal for both the victim and other employees; these are linked with organizational costs related to turnover, investigations, and legal cases (McDonald, 2012). Lower job satisfaction and retention are also linked with more subtle forms of harassment: workplace bullying, incivility, and aggression. These are disproportionately experienced by women, people of color, and those in lower job positions (Cortina et al., 2001; Cortina et al., 2013). There is a sizeable sociology and psychology literature in this space (Schat and Frone, 2011). Scraping data posted by anonymous commenters on an economic rumor mill, Wu (2017) found that discussions about women were more likely to involve personal information, physical appearance and sexual commentary, unlike conversations about men, which focused on economics and professional advice.

While experimental research on interventions is not available, existing evidence points to the importance of clearly stating expectations, procedures, and consequences for workplace incivility and harassment; establishing respectful social norms in the workplace and demonstration of respectful behavior by management; training on expectations and interpersonal skills, and specifically to engaging men as champions of women's inclusion (Prime and Moss-Racusin, 2009); grievance mechanisms with pre-determined consequences for perpetrators and without negative consequences for whistleblowers; and greater organizational responsibility in increasing inclusion and identifying harassment without reports.

Finally, the absence of work-life balance in work culture can result in inter- and intra-industry employment segregation, underlying the sorting of women between part-time and full-time work and driving women out of management positions (Süssmuth-Dyckerhoff, Wang and Chen, 2012; Devillard et al., 2013). The need for a culture of work-life balance is primarily driven by lifecycle events and persistent underlying social norms that place domestic responsibilities in the hands of women. As firms may differ in their ability and benefit from providing flexibility, women are more likely to select into particular firm types (Goldin, 1994; Blau and Kahn, 2016; Bender, Donohue and Heywood, 2005). This theory is supported by the negative correlation between the share of males working more than 50 hours per week and the share of married women working in that occupation in the US. Moreover, stronger effects are found for married women with children (Cortes and Pan, 2017). Using data from the US and the European Union, Dolado, Felgueroso and Jimeno (2002) also found a correlation between gender segregation and the prevalence of part-time jobs, as women crowd into part-time opportunities. Thus, firms with a culture of overwork may deter women from applying, or firms may hire based on preferences for the type of worker who does not require temporal flexibility.

Though benefits that support work-life balance may promote female entry into the labor force in general, they may also reinforce social norms and perpetuate gender gaps, particularly if the cost of these benefits falls solely on employers, and if benefits are not offered equivalently to both men and women. Certain benefits may also result in an income effect which discourages female labor force participation (e.g. if compensation for men in the household includes health insurance for the family). Even if benefits such as part-time work, flexible hours or parental leave are available to women, they may still face negative consequences from making use of them. Despite officially being in a part-time work arrangement, women may be still expected to work 40 hours per weeks, thus earning less for the same

work. More generally women who take up these benefits may lose significant job responsibilities and the opportunity to use their skills. They may be less respected and less included in the workplace (Stone, 2007). Given the inertia of social norms and the stigma towards men who take advantage of these benefits, employers may need to incentivize men to take them up. In the event that men are not taking advantage of these benefits, employers could for instance institute a “use it or lose it” policy for paternity leave and institute a deadline or pay individuals higher rates for vacation time.

Employers face cost constraints to offering these benefits, particularly if competitors are not following suit. If benefits are offered in some industries and not others, and social norms are unchanged, women will gravitate towards these industries and free men to pursue companies regardless of these benefits. Thus, government involvement may be essential to coordinate market-wide change. Coordinating financing through the government or a payroll tax that affects everyone will ensure that there is no differential cost in hiring, and reduce employment segregation accordingly.

### **3.3. MACRO-FISCAL, LEGAL AND REGULATORY FRAMEWORK**

Oftentimes, constraints do not only operate at the micro level on the supply (worker) and demand (employer) side, but through the overarching macro-fiscal, legal and regulatory frameworks that limit the availability of high quality employment opportunities and women’s ability to access them (Hallward-Driemeier and Hasan, 2013). Evidence is relatively thin in this domain, so we focus on key areas of potential disruption to the status quo: laws that specifically prohibit female work in particular occupations, policies that address the gendered division of domestic responsibilities with supply-side and demand-side ramifications, policies that discourage vertical segregation, and the encouragement of female work in growing high-return sectors. Here, government policies at the macro and meso levels may be leveraged to address significant general equilibrium effects in labor markets, micro-levels constraints, coordination failures, and multiple constraints that are simultaneously binding.

#### *Macroeconomic and fiscal policies*

Governments can work to address constraints in sectors that are projected to grow and produce high return jobs. Macroeconomic policy is used to determine the sectoral composition of the economy and the areas for investment to promote economic growth. While governments should not change the sectoral composition of the economy to serve gender issues, they can preemptively put policies in place to encourage female employment in these high growth, high-return sectors with formal wage jobs. Jobs diagnostics are crucial to this process and understanding the impacts of economic growth on job creation, the types of jobs that are created, and constraints that women face in entering and growing in these sectors. Accordingly, for example, governments may invest in particular skill programs for women, creating safe transport systems in key geographic areas, and incentivize and educate firms on improving hiring practices and grievance mechanisms. This highlights the key role that governments play in coordinating policy incentives for smart, efficient, and inclusive growth.

It is also important that governments consider the gender ramifications of their macro-fiscal policies, even if they are not directly tied to gender or employment segregation. For instance, marginal tax rates that are higher for secondary earners than single earners, which often occurs in joint tax systems, may deter married women from participating in the labor force, or incentivize them to select part-time jobs over full-time jobs (Jaumotte, 2003; Rastringa and Verashchagina, 2015). Additionally, if employment

segregation implies that women are concentrated in particular industries, they may be particularly impacted by policies tied to that industry, such as trade deals, outsourcing, and privatization. In one example, tariff reductions in Indonesia resulted in the expansion of sectors that were already dominated by women, which resulted in lower employment segregation, improved labor opportunities, and delays in marriage (Kis-Katos, Pieters and Sparrow, 2017), though tariff reductions may not have a similar effect in other contexts.

#### *Direct prohibition of occupations*

In an attempt to “protect” women from jobs with “inappropriate” or “dangerous” tasks, several countries impose legal and administrative restrictions that prevent women from entering certain occupations. Of the 173 economies surveyed by Women, Business and the Law, 100 restrict non-pregnant and non-nursing women from pursuing the same economic activities as men. Some countries directly prohibit women from holding particular jobs, for example: in Argentina, women are prohibited from making alcoholic beverages and cleaning machinery in movement; in France, women may not carry loads greater than 25 kilograms; in Madagascar, women are prohibited from preparing or selling printed literature contrary to morality; and in Russia, women may not drive trucks for agriculture or install antennas in high places (World Bank, 2017b).

Such laws limit women’s choice of occupation and flexibility and contribute to employment segregation, attitudes towards women in the workplace, and confinement of women to low-paying sectors and activities. In fact, many of the jobs prohibited for women are in highly paid industries, such as mining and manufacturing (World Bank, 2017b). Over the past decade, between 2007 and 2017, four economies—Bolivia, the Democratic Republic of Congo, Côte d’Ivoire and Togo—reformed to allow women to get a job or pursue a trade or profession without permission. The Democratic Republic of Congo, in particular, removed the law restricting women from working in industries like mining, manufacturing and construction (World Bank, 2019). Rather than artificially limiting female choice of occupation, governments would be better placed to encourage safety on the way to work and in the workplace, and create efficient grievance redressal mechanisms for reporting work hazards and verbal and physical violence.

#### *Female-specific policies*

The persistence of social norms regarding care and domestic activities and the inherent variation in employer’s workplace culture and approach to temporal flexibility imply that regulatory policies are central to reducing employment segregation. For example, policies surrounding parental leave and the availability of affordable child care have the potential to alleviate both supply-side and demand-side constraints to reducing employment segregation. While many attempt to draw women into the workforce by offering maternal leave, female-specific policies can increase employment segregation by reinforcing norms labelling women as primary caretakers, funneling women into occupations that are conducive to time away from work, increasing detachment from the labor force, or discouraging employers from hiring women due to the cost of maternity leave. Survey responses from employers in Bangladesh indicate negative views towards hiring women due to both bias and cost: 45 percent of respondents agreed that hiring women could disrupt the working environment; 43 percent agreed that women were more expensive employees due to required benefits and expenses, such as providing separate workplace facilities; 35 percent agreed that hiring women came with challenging government regulations on working hours and maternity leave; and 33 percent agreed that it was challenging to work with women due to their family commitments. These views were more pronounced among smaller firms

(World Bank, 2013). Prada, Rucci, and Urzúa, (2015) used quasi-experimental methods in Chile to show that government-mandated employer-provided child care resulted in lower wages for women who were hired.

The employer-borne cost of easing care constraints for women, and the bias that often accompanies this cost can be mitigated by shifting from an employer liability system to a social security system of funding maternity leave. However, employers may still incur costs due to absence and frictions in finding substitutes. Offering leave to both parents shows more promise: paternity leave in Norway has been found to improve the gender balance in domestic responsibilities (Kotsadam and Finseraas, 2011). However, only 24 countries provide more than two weeks of leave to new fathers (Addati et al., 2016). Additionally, paternity leave may have limited impact if take-up is low. This has been the experience in Europe according to a study of 21 countries (Castro-Garcia and Pazos-Moran 2016). Countries have experimented with ways of encouraging take-up by men, such as making parental leave paid, compulsory, nontransferable, or allowing households to exchange parental leave for a child care subsidy (Addati et al., 2016). Shocks in this domain may be particularly valuable if men do not use their leave due to unsupportive work environments or the lack of take-up by other men. Encouragement of pre-school is another gender-neutral method of relieving child care constraints on women, which has been successful at enhancing labor force participation in Indonesia, OECD countries, and a number of Latin American countries (Halim, Johnson and Perova, 2017).

Even if the balance of domestic responsibilities cannot be shifted within the home, government and employer support for affordable child care may allow women to seek work outside the home and full-time positions, and reduce discrimination and barriers to climbing the corporate ladder. In Albania and Chile, the provision of child care has been tied to training programs that encourage male participation in child rearing (Addati et al., 2016). A subsidized child care program in Canada improved the long-term labor supply of mothers, particularly among those who were less educated (Lefebvre, Merrigan and Verstraete, 2009). However, according to the Women Business and Law database, child care payments are only tax deductible in 20 out of 189 countries (World Bank, 2017b).

#### *Policies that discourage vertical segregation*

Quotas on women in leadership positions has been one highly debated instrument of change. Nevertheless, their use is limited and only effective when gender disparities in human capital and other selection problems are not binding. Out of 189 countries in the Women, Business and The Law database (World Bank, 2017b), 9 have gender quotas for corporate boards, 24 have gender quotas for Parliament, and 54 have gender quotas for candidates lists for national elections. In contexts where quality female candidates are available, quotas can be an effective way of countering taste-based discrimination, countering statistical discrimination by increasing information and transform perceptions of women's ability to lead, and illuminating the benefits of diversity.

Quotas may also have positive externalities for women farther down in the hierarchy or for girls' aspirations, due to role model effects and networking potential. However, quotas may crowd out other marginalized groups, cause backlash if women are perceived as having an unfair advantage, or result in inefficiency if qualified female candidates are not selected, or women are less motivated to invest in themselves because they believe the quota has rendered advancement easier. Causal evidence on political quotas in India have demonstrated none of these negative consequences, but several positive effects: greater participation by women, changes in policy investments, greater aspirations and educational attainment among girls, and less corruption (Pande and Ford, 2011). However, corporate quotas may be incentivized rather than mandated, as there may be short-term trade-off between the benefits of female representation and costs in profits. Evidence on the corporate quotas in Scandinavia

has suggested that, in the short-term, greater female participation on corporate boards results in lower profits or firm value (Matsa and Miller 2011; Ahern and Dittmar, 2010). While Matsa and Miller (2011) attributed this to the lower age and CEO experience of selected women, Ahern and Dittmar (2010) attributed short-term reductions in firm value to higher employment rates and preferences for long-term profit. However, no evidence is available on long-term impacts of corporate quotas (Pande and Ford, 2011).

#### *Coordination failure and general equilibrium impacts*

Far-reaching law reforms led by Governments, addressing multiple simultaneous constraints and requiring the engagement of multiple diverse stakeholders, may be particularly important in contexts with high ethnic and cultural variation, where religious and customary laws are honored. For example, the Ethiopian government revised its family law in 2000 to address gender norms, time, and capital constraints that were simultaneously binding: it gave women the authority to administer common marital property, increased the minimum age of marriage to 18, removed the ability of a spouse to deny permission to work, and improved court authority to settle disputes from divorce and inheritance. Hallward-Driemeier and Gajigo (2013) found that this reform increased the participation of young women (below age 27) in work outside the home, paid work, year-round work, and work that required higher educational attainment.

Governments may also play a coordinating role in reducing gender-based harassment in the public spaces and at work. These programs may have a direct impact on safety and mobility restrictions to employment opportunities, as well as an indirect impact on gender attitudes in general. Mexico City's Hazme El Paro program, which translates to "Have my back", creates campaigns to teach bystanders and bus drivers about actions they can take if they see women being harassed (Alves, 2018). As norms on female behavior are often the source of harassment and biased valuations of women's performance, the government may play a role in increasing the public's exposure to women who defy prescribed female behaviors.

Finally, as a significant source of wage-employment itself, particularly in developing countries, the government has a role to play in encouraging gender parity in different positions and organizational levels. The government can also incentivize other employers to promote gender parity. Incentives vary in invasiveness from softer nudges, such as promoting discussion on employment segregation, to recognizing companies with supportive work cultures, to anti-discriminatory policies that sanction particular hiring practices. There is much to be done in this regard. Currently, only 72 out of 189 countries mandate nondiscrimination based on gender in hiring; and only 15 prohibit prospective employers from asking about family size (World Bank, 2017b).

## 4. FUTURE RESEARCH DIRECTIONS

Despite the vast number of studies covered in this review paper on employment segregation, the literature directly concerned with the topic is still thin on many fronts; and the lack of causal and non-causal evidence makes it difficult to propose strategic policy recommendations and priorities. In many instances, we extrapolated our analysis from lab experiments, survey results, and studies on the link between policies and female labor force participation more generally. Future work must expand the scope of this literature to examine the nuances of employment segregation. Several areas for future research are highlighted in Table A.2 in the Appendix. Here, we focus on six large gaps in analytical work and research: (i) country level diagnostics, (ii) cross country studies, (iii) dynamics of employment segregation, (iv) gender norms and changes, (v) sexual harassment and safety, and (vi) effective demand-side policies. In terms of the audience, the first topic—country diagnostics—provides context specific suggestions for policy makers, while the rest are aimed at underexplored areas, with the potential to generate global knowledge goods.

### *Country level diagnostics*

Country level diagnostics are crucial to motivating policy interest and designing strategies to combat gender-based employment segregation. Such diagnostics are key to aligning policy with both women's empowerment and economic growth. A comprehensive diagnostic should begin by assessing the state of employment segregation and developing indicators that can be tracked consistently. Key employment indicators such as participation and compensation (wages as well as non-monetary benefits) should be disaggregated by gender and geography (urban versus rural) and measured across industries, occupations, sectors, firm sizes, skill levels, and positions.

To determine policy priorities, it is similarly important to track demand-side and supply-side constraints. While some of these are commonly measured (e.g. educational attainment and access to finance), our review indicates several indicators that are often overlooked: aspirations, specific choice of educational stream, types of employment at labor market entry in contrast to later in the life cycle, hours spent on domestic activities, mobility, inter-gender attitudes and cooperation, harassment and belongingness in the workplace, and the presence of women in various levels of leadership. However, this data must be supplemented by qualitative data on women and men's preferences, and research on local gender norms, to ensure policies are sustainable, desirable, and address the root cause of segregation. Here, local researchers may consider adapting studies similar to that of Berdahl (2007) and Rudman and Kilianski (2000) to understand attitudes that influence segregation but are difficult to measure.

To motivate policy that targets employment segregation, it is important to quantify its impacts on the gender wage gap and economic growth. A good starting point may be to replicate studies that estimate economic growth in the case of gender parity such as Esteve-Volart (2004), or studies that decompose the gender wage gap such as that of Blau and Kahn (2016). The latter would provide insight into first-order policy priorities in educational attainment and work experience relative to occupational choice.

Finally, to promote sustainable change, sectoral analysis—identifying high return sectors, sectors with growth potential, and sectors changing their factors of production—would allow countries to target

female entry into high return sectors, thus reducing the gender wage gap effectively and creating networks and role models for future cohorts.

#### *Cross country studies*

Our literature review has not seen many cross-country studies on employment segregation, despite data availability. Cross-country studies are essential because they can incorporate the variation in macro, meso and micro variables to examine their role on employment segregation. Available data include labor outcome variables from labor force and enterprise surveys, as well as regular multipurpose household surveys. Such data can be analyzed in conjunction with country level macroeconomic indicators, as well as gender-relevant norms, institutional, political and legal indicators such as laws related to occupational restrictions from the World Bank's Women, Business and the Law database and women's economic empowerment indicators (from OECD's SIGI database and the World Value Surveys). Most countries have time series data of labor outcomes, policies and country characteristics that can be used to construct panel data. Future studies could explore correlation between the extent of employment segregation and factors such as country level characteristics, norms, public opinion, laws and policies.

#### *Dynamics of employment segregation*

Few studies look at the evolution of employment segregation overtime. While Borrowman and Klasen (2017) and Blau and Kahn (2016) describe how employment segregation changes over time, little has been done to examine the dynamic process of the decline in employment sex segregation. Learning from occupations in which segregation has fallen over time could help to understand the transformation process—for instance, whether there is a threshold for women's entry into a sector that needs to be crossed to eliminate gender-biased norms; or whether employment segregation fades away through redistribution of men and women already in the labor markets or through entry of new cohorts of workers. Future research could also examine research questions such as: how do gender-dominated jobs emerge and is it the same across different countries, legal systems, and gender norms? How does the process of desegregation vary by countries or locations (within a country)? How does progress in education help explain the dynamics of employment segregation, and how is this mediated by social mobility or rigidity?

#### *Norms about men and women's roles in the labor markets and ways to change them*

The literature often alludes to gender norms when there are unexplained factors affecting employment segregation. Across all societies, we observed there are differences in jobs that are deemed appropriate for men and women. The set of such jobs is large in some countries while quite limited in others. In addition, the enforcement of gender roles may be severe or lax. For a given locality, research is needed on desirable traits or behaviors of men and women, how individuals identify with these behaviors, and community reactions to deviations from these desired behaviors. While gender norms are often mentioned as a whole, they can be broken down into smaller parts—by specific types of beliefs and enforcing mechanisms. Doing so will allow for targeted efforts to transform norms.

A type of gender norm affecting employment segregation is related to the formation of aspirations of girls. Since early in life, boys and girls are often socialized differently, resulting in gendered differences in their aspirations regarding their roles in the economy (whether to join the labor markets) and their choice of employment. In this regard, potential research questions for the future include: what are possible interventions to change gender norms about appropriate jobs for men and women? How important are role models and networks to changing aspirations versus changing success in the workplace? Are visible role models or a critical mass of female role models or network members necessary to induce a tipping point and change aspirations, change success in the workplace, or change statistical discrimination?

Research is also needed on which socio-emotional skills can help women negotiate existing gender norms or are needed to enter fields dominated by the other gender; and whether these skills are necessary for inclusion and mimicking the dominant gender, overcoming adversity, or actual productivity. This will help differentiate whether policies should target employers or prospective employees. Moreover, since findings are likely to vary across contexts, such research should be conducted across different countries and settings.

Norms about gender roles not only dictate the types of jobs that men and women can perform in the labor markets, but also their roles within the household. Future research could provide a better understanding of questions such as: how do marriage, childbearing, and household composition affect women and men's occupational choice? How do gender wage gaps between couples affect their job choices and household chore allocation? How can employer-based policies address intrahousehold chore allocation?

Finally, data must be collected on the attitudes of men, into order to consider whether men can be incorporated into interventions, and their attitudes can be shifted or embraced to become supportive champions of women in their roles as fathers, employers, colleagues, and employees. This will be particularly important in male-dominated sectors.

#### *Sexual harassment, safety and mobility*

Risks of gender-based violence and sexual harassment in the workplace tend to disproportionately affect women and their labor market decisions. While the problem of sexual harassment is recently gaining visibility, prevalence estimates have a wide range. Additionally, very little rigorous research has been conducted on effective government and human resource policies to address harassment at work and on the way to work.

The literature also show that women face greater restrictions on mobility than men, which is expected to affect their choice of jobs. Domestic responsibilities may make working women more sensitive to distance and time needed to travel to work relative to men. Moreover, in many settings, women's families place restriction on women's movement—whether they can leave their dwelling and travel to certain locations. While some studies have examined the relationship between restriction on women's mobility and labor force participation, few studies have delved into the effects of mobility restrictions and transport options on women's skill acquisition, incomes, and choice of work or business type. Finally, research must investigate how safety differs from *perceived* safety, and whether choice of employment is optimal in this regard.

*Policies to reduce gender bias in hiring, workplace cultures, promotions, and evaluations*

While we see that in general there is a pattern of vertical segregation in recruitment, retention, inclusion, and performance evaluations, strikingly few studies have been conducted on demand-side constraints and what policies work. This is partly because firm-level data and cooperation in studies is more difficult to secure. Still, in Section 3.2 we highlighted several promising low-cost means of reducing employment segregation via better recruitment, selection and hiring strategies. However, the impact of these policies has not been assessed. Additionally, most of the literature on job postings (changes in wording, the inclusion of information, and the established pay structure) is confined to formal jobs in developed countries in the West. It is important to understand how these questions apply to other sectors and countries and examine deterrents to entry for less formal jobs. Future research may also explore what recruitment strategies reduce use of cognitive shortcuts? How can a firm increase belongingness in male-dominated sectors? Does the magnitude of the motherhood penalty in hiring differ with occupation? What are effective public policies for incentivizing firms to attract, hire, and promote women?

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# APPENDIX

**Table A. 1 Duncan Index by Country**

Country	Duncan Index	Country	Duncan Index	Country	Duncan Index
Albania	0.277	Germany	0.456	Occupied Territory	0.547
Algeria	0.675	Greece	0.105	Panama	0.632
Aruba	0.428	Guatemala	0.625	Peru	0.483
Australia	0.495	Hungary	0.452	Philippines	0.419
Austria	0.464	Iceland	0.442	Poland	0.448
Bangladesh	0.313	Indonesia	0.185	Portugal	0.428
Belarus	0.608	Ireland	0.31	Qatar	0.419
Belgium	0.493	Israel	0.424	Romania	0.368
Belize	0.559	Italy	0.461	Russian Federation	0.566
Bosnia and Herzegovina	0.443	Japan	0.224	Samoa	0.475
Brazil	0.473	Latvia	0.551	Serbia	0.432
Brunei Darussalam	0.423	Liberia	0.205	Seychelles	0.45
Bulgaria	0.167	Lithuania	0.659	Slovakia	0.552
Cambodia	0.26	Luxembourg	0.243	Slovenia	0.445
Costa Rica	0.557	Macau, China	0.229	South Africa	0.439
Croatia	0.477	Madagascar	0.378	Spain	0.473
Cyprus	0.554	Malaysia	0.469	Sri Lanka	0.292
Czech Republic	0.609	Maldives	0.283	Sweden	0.481
Denmark	0.493	Malta	0.459	Switzerland	0.441
Dominican Republic	0.61	Mauritius	0.423	Tanzania	0.137
Ecuador	0.431	Mexico	0.468	Thailand	0.254
El Salvador	0.635	Moldova	0.43	Turkey	0.376
Estonia	0.56	Mongolia	0.399	Uganda	0.17
Ethiopia	0.217	Myanmar	0.229	Ukraine	0.585
Finland	0.686	Namibia	0.476	United Kingdom	0.51
France	0.497	Netherlands	0.518	Uruguay	0.46
Gambia	0.369	Norway	0.495		

**Table A.2. Constraints in the Employment Pipeline and Key Research Questions**

<b>Employment Pipeline</b> <b>Constraint to High Quality Employment</b>	<b>Aspirations</b>	<b>Obtain skills</b>	<b>Apply and Hired/ Start Business</b>	<b>Employment Sustained/ Promotion/Growth</b>	<b>Key Research Questions</b>
Education <i>Attainment</i> <i>Choice of stream</i> <i>Technical, Socio-emotional skills</i>	Self-assessment of skills Belief that skills can be developed Information on returns	Choice of stream TVET to “compensate” for bias	Self-assessment of skills Ability to promote oneself Soft skill training to overcome internal bias/ gender norms		Which soft skills matter for overcoming internal bias and gender norms? How to encourage entry into high return education streams?
Capital <i>Control/Access to Assets/Incomes/Loans</i>		Investment in education	Access affects risk appetite and ability to invest in high return industries/crops Less decision-making power, or expropriation of income, affects returns/investments		How does access to capital affect investment in education or particular businesses/crops? Should policies focus on loan application rates?
Intra-Household Allocation of Time <i>Division of responsibilities</i> <i>Relative opportunity cost of not working</i>		Youth domestic responsibilities Expected future income Transferable skills	Gender balance in domestic responsibilities: incentives to encourage male role		How does segregation vary with lifecycle, whether women are primary earners, household composition? What can effectively change norms on division of responsibilities? Effect of child care/ technology/ wage gap
Safety and Mobility <i>On the way to work</i> <i>At work/home</i>		Restrictions to mobility on the way to school	Restrictions to mobility on the way to work Perceived/Actual safety in the workplace Intra-household backlash towards working women		What is the prevalence of threats to safety? Large need to explore interventions
Networks <i>Known role models</i> <i>Role models in media</i> <i>Peers</i> <i>Business contacts</i>	Prevalence Visibility Socialization Advice/Encouragement Information on returns	Learn from network in a field	Advice Referrals Expected returns and ability to succeed	Presence of women in a field can affect statistical discrimination Promotions through connections Market linkages for higher profits	What is the relative importance of the aspirations/information/referrals provided by networks? Can they be replaced directly? Do role models/networks need to be female? Are visible role models or large cohorts necessary to change bias/gender norms?

**Table A.2. (cont.) Constraints in the Employment Pipeline and Key Research Questions**

<b>Employment Pipeline</b>	<b>Aspirations</b>	<b>Obtain skills</b>	<b>Apply and Hired/ Start Business</b>	<b>Employment Sustained/ Promotion/Growth</b>	<b>Key Research Questions</b>
Recruitment, Selection and Hiring		Risk of investing in skill and not being hired	Bias and use of networks in recruitment strategies/ads, mentorship, entry level income/ placement Considering women's preferences for location/pay structure	Placement in jobs with growth potential Discrimination based on motherhood Perceptions of women who negotiate or are assertive	When women enter male-dominated sectors, how does income/ placement differ? What recruitment strategies reduce use of cognitive shortcuts? What are demand-side barriers to entry in non-wage employment?
Work Culture	Social exclusion can reduce interest in skill development Risk of investing in skill and facing harassment or discrimination		Belongingness, Social Environment Sexual Harassment Discrimination based on expected imbalance in household division of responsibilities Anytime/anywhere performance model Occupational differences in accommodation of imbalance: ability to rejoin after childbearing/ stay at work and use leave, flexible hours		How do men and women respond to benefits/child care incentives for men/women? How prevalent is harassment/unfair treatment? What policies are effective? How can a firm increase inclusion in male-dominated sectors and education streams?
Promotions and Evaluations	Presence of women at the top of the hierarchy	Risk of investing in skill and not being valued	Values misaligned with management: ethics, reciprocity, competition, leadership and communication styles Gender-biased perceptions of performance/likeability: agency, authority, competence, aggression Interest from company leadership		What policies can reduce the devaluation of female work/qualities? Do women who climb the employment ladder change their values/personalities to accommodate bias?
Legal and Regulatory Framework	Age of marriage laws, coordination with religious and customary law		Laws affecting women's ownership of assets, right to work in particular jobs, taxes on secondary earners, options for recourse in home/work disputes, availability of affordable child care, parental leave, incentives to use paternal leave, incentives for diversity in workplaces and management, trade, privatization		How can governments incentivize firms to attract, hire, and promote women?



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