



Economic Premise

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Promoting Women's Economic Participation in India

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Despite rapid economic growth, gender disparities in women's economic participation have remained deep and persistent in India. What explains these gender disparities? Is it poor infrastructure, limited education, or the composition of the labor force and industries? Or is it deficiencies in social and business networks and a low share of incumbent female entrepreneurs? This note analyzes the spatial determinants of female entrepreneurship in India in the manufacturing and services sectors. It finds that good infrastructure and education predict higher female entry shares. Gender networks also influence women's economic participation, as strong agglomeration economies exist in both manufacturing and services. A higher female ownership among incumbent businesses within a district-industry predicts a greater share of subsequent female entrepreneurs. Moreover, higher female ownership of local businesses in related industries (similar labor needs, input-output markets) predicts greater relative female entry rates.

A central driver of economic growth over the past century has been the increased role of women. This empowerment comes in many forms: increased female labor force participation, reduced discrimination and wage differentials that encourage greater effort, and improved advancement practices that promote talented women into leadership and managerial roles. As the 2012 World Development Report highlights, empowering half of the potential workforce has significant economic benefits beyond promoting just gender equality (World Bank 2012).

In India, increases in reservations for women in *panchayats*—rural local self-government—have gone a long way in increasing political participation for women. However, when it comes to economic participation, gender disparities remain deeply entrenched. The 2012 World Economic Forum's Gender Gap Index ranked India 123rd out of 135 countries on economic participation and opportunity.

Figure 1 visually represents data from the *Global Gender Gap Report* (Hausmann, Tyson, and Zahidi 2011). India scores average on the gender gap index overall (horizontal

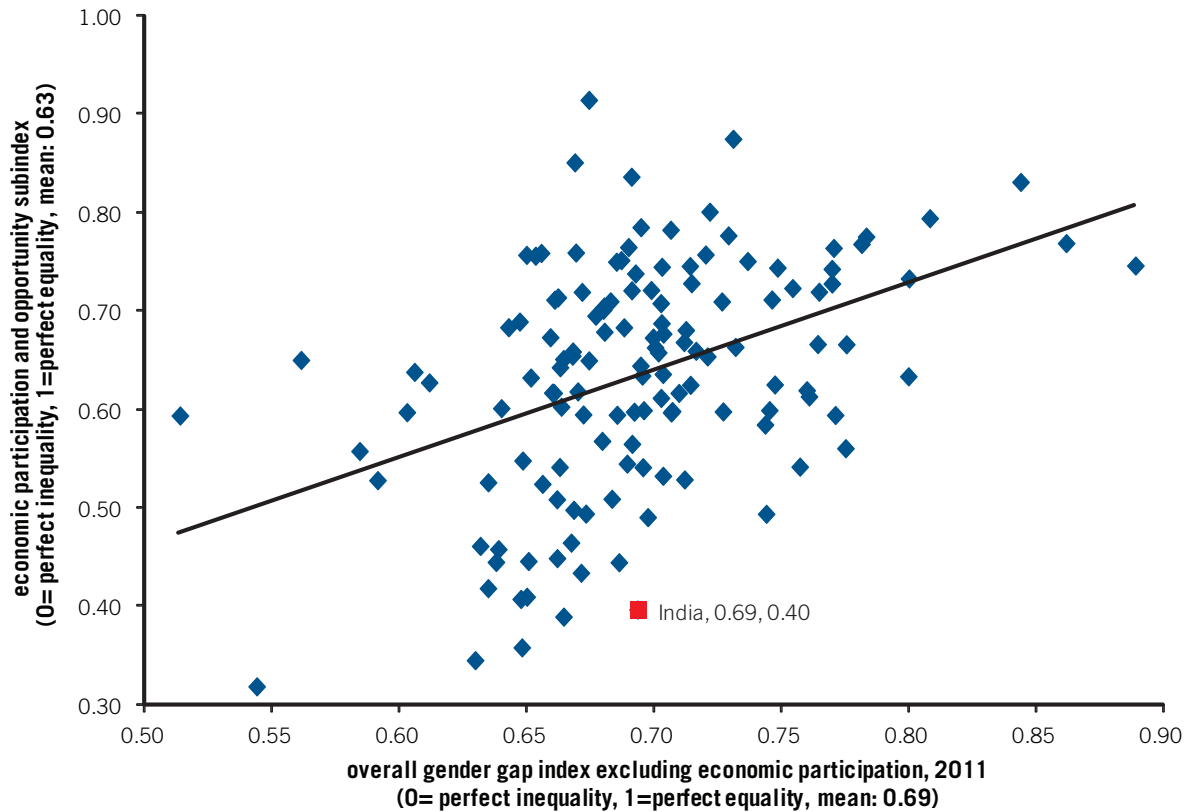
axis), but its score for women's economic participation and opportunity is worse than 95 percent of all countries in the sample (vertical axis).

What explains these huge disparities in women's economic participation in India? Is it poor infrastructure, limited education, or the gender composition of the labor force and industries? Or is it deficiencies in social and business networks and a low share of incumbent female entrepreneurs?

Which Industries Attract Female Entrepreneurs?

In a recent paper, Ghani, Kerr, and O'Connell (2012) explore the factors that encourage female entrepreneurship in India. A representative sample of the Indian economy was captured using microdata on the unorganized service and manufacturing sectors during 2001–2 and 2005–6, respectively. The survey data were used to identify the presence of new entrants as well as the gender of the owner of proprietary establishments. This information was analyzed to find relative rates of female entrepreneurship and business ownership at

Figure 1. Women's Economic Participation: Opportunity and Overall Gender Gap Index, 2011



Source: Hausmann, Tyson, and Zahidi 2011.

the district-industry-year level, visually represented in figure 2 by district.

Overall, the average female business ownership share increased from 26 percent in 2000 to 37 percent in 2005. On an employment-weighted basis, the rate increased from 17 percent to 25 percent. The female ownership rates across major cities have a distribution that is mostly similar to the distribution across states.

The districts containing India's major cities have higher than average rates of female entrepreneurship. Karnataka, Kerala, and Tamil Nadu have relatively high female business ownership rates in unorganized manufacturing, with an average female establishment ownership rate exceeding 45 percent. In contrast, Delhi, Bihar, Haryana, and Gujarat have low female ownership and entrepreneurship shares.

Within the manufacturing sector, female ownership shares are highest and typically exceed 50 percent in industries related to chemicals and chemical products, tobacco products, and paper and paper products. At the opposite end, female ownership shares are 2 percent or less in industries related to computers, motor vehicles, fabricated metal products, and machinery and equipment.

In the service sector, female ownership rates in major cities tend to be higher than overall state averages. The correla-

tion of state gender ratios between manufacturing and services is about 0.5 on a count basis, and above 0.9 on an employment-weighted basis.

The states with the highest female service sector ownership rates are Kerala, Tamil Nadu, and Andhra Pradesh, with average female ownership shares exceeding 12 percent. The lowest female ownership rates are in Rajasthan, Bihar, Orissa, and Uttar Pradesh, each with 6 percent or less. The average female business ownership share, with and without employment weights, was between 8 percent and 9 percent for 2001 and 2006, respectively. Among service industries, female ownership shares exceed 30 percent in industries related to sanitation and education. Industries related to research and development, water transport, and land transport have the lowest female ownership rates, at 1 percent or less.

What Drives the Gender Balance of New Enterprises?

The data on female business ownership were then translated into metrics that combine the incumbent industrial structures of cities, with the extent to which industries interact through clustering or agglomeration mechanisms (Marshall 1920). Essentially, these metrics condense complex local industrial structures into simple indicators, looking at the suit-

Figure 2. Female Entrepreneurship in Unorganized Manufacturing and Service Sectors

a. Manufacturing

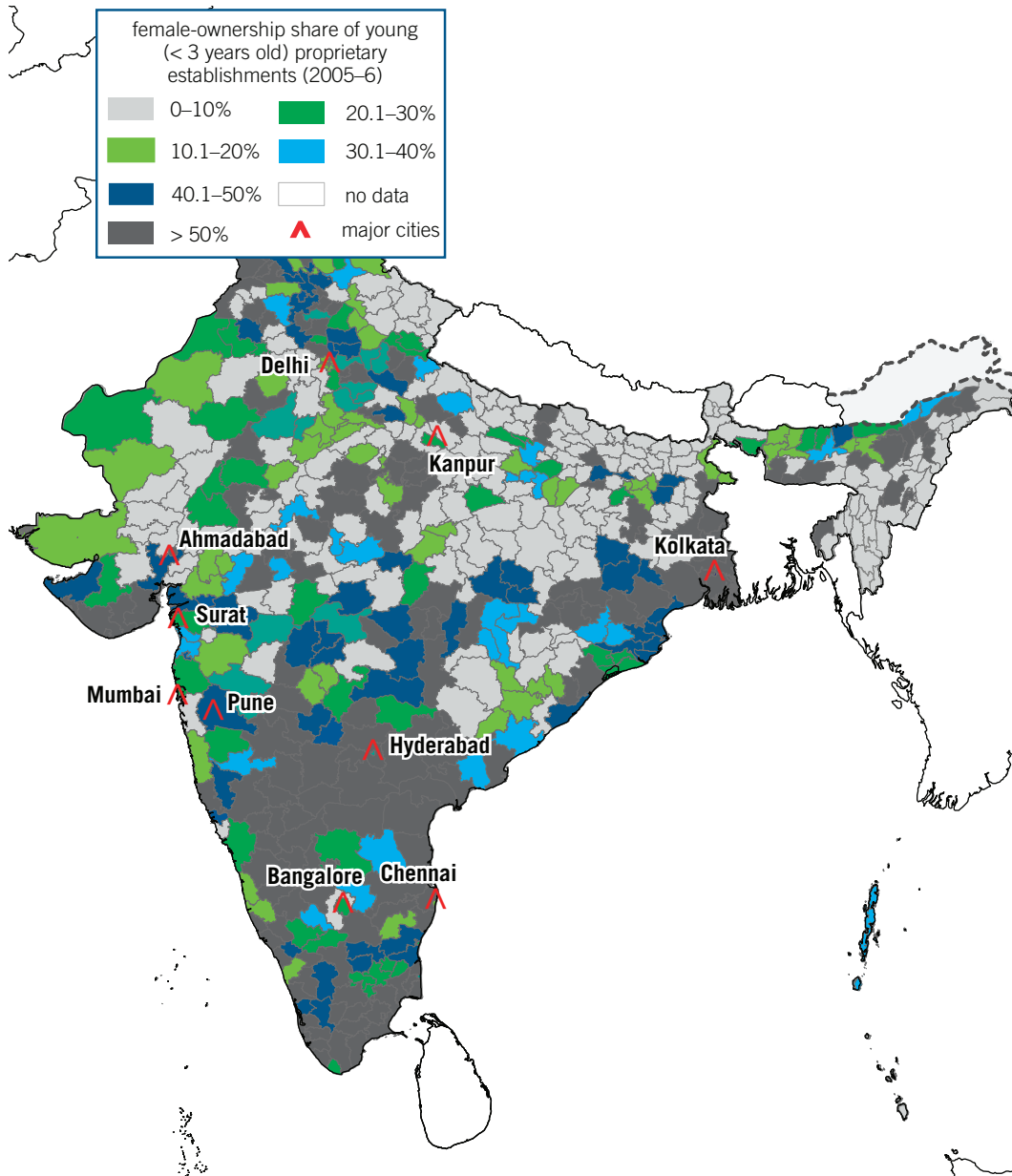


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ability of a given area for an industry in terms of local labor force compatibility or input-output relationships. The metrics are developed separately using female- and male-owned incumbent businesses to identify how gender-specific agglomeration benefits affect new entrants.

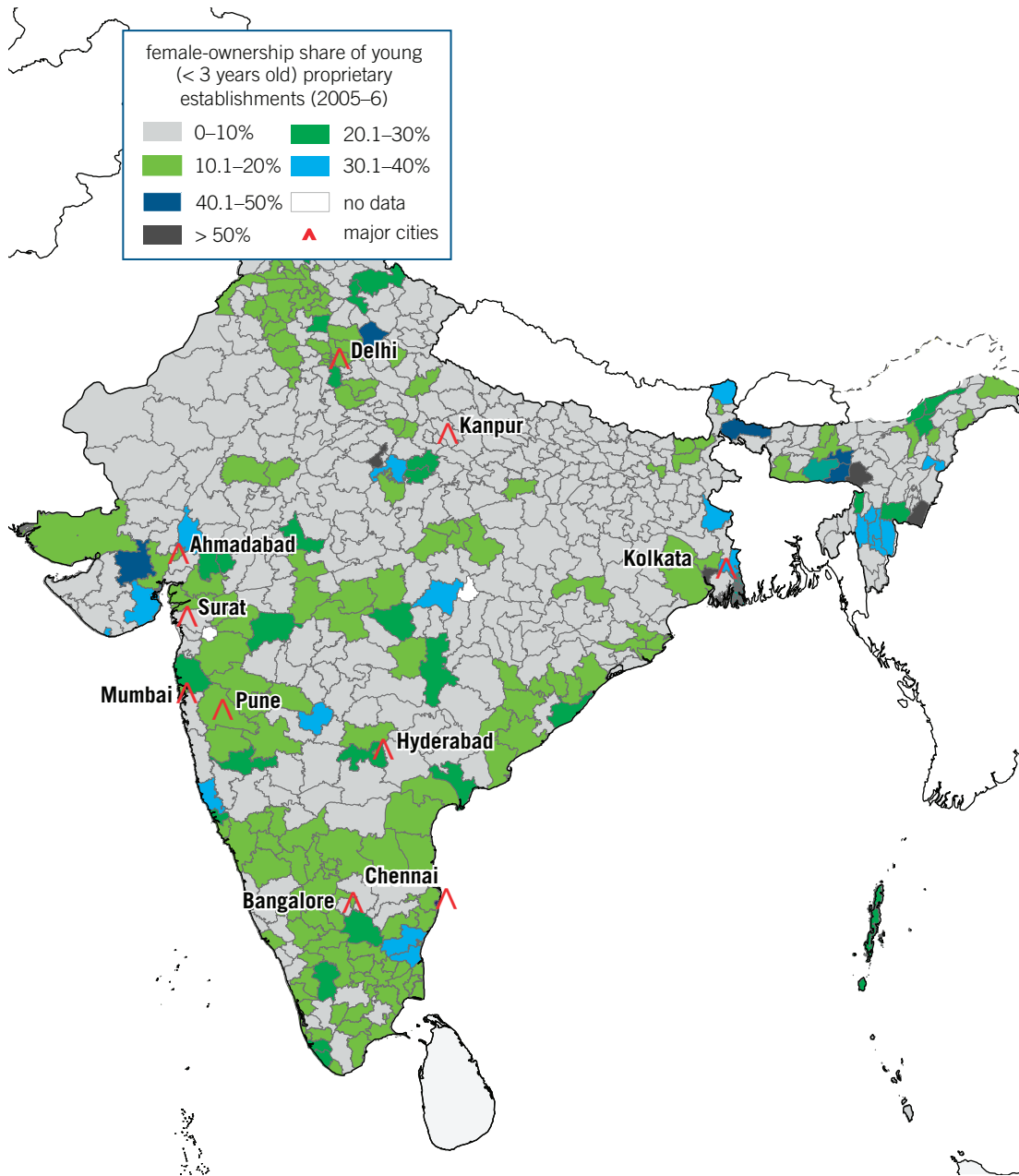
Table 1 highlights the factors influencing the share of female-owned new establishments at the district-industry level. Variables include broader district-level traits (population, education), indicators of women’s welfare in the area (female literacy rate, total fertility rate), indicators of local physical

infrastructure, travel time to biggest cities, and the stringency of labor laws. These estimations control for industry-year fixed effects. More rigorous models and instrumental variable strategies largely confirm these findings.

Initial explanatory measures focus on basic demographic traits of a district. Population control captures the size of the local consumer market, which can be especially important for service businesses, and the overall level of surrounding economic activity (for example, general availability of workers). Higher entry levels partially correlate with greater popula-

Figure 2. Female Entrepreneurship in Unorganized Manufacturing and Service Sectors (continued)

b. Services



Source: Authors' calculations using national sample survey data.

tion, but there is no theoretical reason to suspect population influences the gender balance after controlling for other district attributes.

Empirical results suggest that a district/industry with more incumbent female employment has a greater female entry share. Among district-level traits, a higher female-to-male ratio, an age profile emphasizing working-age population, and better quality infrastructure appear important.

Infrastructure

The relationship between infrastructure and female entry share is perhaps the most relevant for policy makers. While

basic infrastructure services like electricity are essential for all businesses, new entrants and the informal sector can be particularly dependent upon local infrastructure (established firms are better able to provision their own electricity if necessary). Inadequate infrastructure also affects women more than men, because women are often responsible for a larger share of, and often more time consuming, household activities.

Interestingly, empirical findings suggest that access to major cities does not influence the gender balance of entrepreneurship, but infrastructure access within a district does. In

Table 1. Unconditional Estimations of Female Entrant Share: Manufacturing and Service Sectors

| Estimations | Manufacturing (2005–6) | Services (2001–2) |
|--|------------------------|-------------------|
| Log female-owned incumbent businesses in district | +++ | ++ |
| Log female-owned incumbent businesses in district-industry | +++ | +++ |
| District traits: | | |
| Female literacy rate | 0 | ++ |
| Sex ratio | +++ | 0 |
| Population density | --- | -- |
| Education level | 0 | 0 |
| Age profile | + | + |
| Infrastructure level | +++ | ++ |
| Labor regulations stringency | + | ++ |
| Local industrial conditions of incumbent firms: | | |
| Index of labor market strength, female-owned businesses | +++ | n/a |
| Index of input-output strength, female-owned businesses | +++ | n/a |
| Observations | 4,336 | 4,458 |
| Adjusted R-squared | 0.328 | 0.220 |

Source: Authors' compilation.

Note: Coefficient direction and significance level shown; “+++” implies positive coefficient significant at the 1 percent level; two and one +/- signs imply 5 percent and 10 percent significance, respectively.

particular, transport infrastructure and paved roads within villages play an important role.

Travel in India can be restrictive and unpredictable, and women face greater constraints in geographic mobility imposed by safety concerns and social norms. In addition, better electricity and water access may reduce the burden of women in providing essential household inputs for their families, and allow for more time to be directed toward entrepreneurial activities.

Labor regulations

The positive association for stringent labor regulations is also relevant for female entrepreneurship. Several studies link labor regulations in Indian states to economic performance (Basu and Maertens 2009; Besley and Burgess 2004; Aghion et al. 2008). These regulations may affect the gender balance of entrepreneurs by shifting activity into industries or sectors that female entrepreneurs tend to be more involved in, or influencing occupational decisions within the family. This note does not investigate this further, given that the focus is on the networks evident in local industrial structures—although the partial correlation is worthy of additional research.

Agglomeration effects

Development economists frequently mention the role of business networks among women in developing countries. However, few studies systematically look at female business ownership across regions and industries in multiple sectors and explore the importance of the gender profile of the incumbent industrial structures.

The agglomeration metrics suggest that female connections in labor markets and local buyer/seller (input-output) markets contribute to a higher entry share. A 1 standard deviation increase in either of these incumbent conditions correlates with a 2–3 percent increase in the share of new entrants that are female. This compares to a base female entry ratio of 21 percent.

The first rationale is that proximity to customers and suppliers reduces transportation costs and thereby increases productivity (for example, Fujita, Krugman, and Venables 1999). Within the manufacturing sector, the extent to which districts contain potential customers and suppliers for new entrepreneurs can be measured. Beyond material inputs, labor is perhaps the most important input into any new firm, and entrepreneurship is quite likely to be driven by the availability of a suitable labor force (for example, Combes and Duranton 2006). However, while a district's education and basic demographics can determine the suitability of the local labor force, these aggregate traits can miss the specialized nature of many occupations.

Most of the basic district-level links observed for manufacturing hold true for services as well. Somewhat surprisingly, a higher female entry ratio is not associated with a greater female ratio in the district, but female literacy rates and general education levels are more predictive. This link may be due to services being more skill intensive than manufacturing in India (Ghani 2010). Stronger female-owned incumbent businesses again predict a greater female entrepreneurship in service industries.

These results support the conclusion that female entrepreneurship in India follows from incumbent female-owned businesses in a district/industry that encourage subsequent entry. The strength of local input-output conditions are important, and their effects appear to be driven primarily by the presence of other local female-owned businesses.

Correcting Gender Imbalances through Policy

Economic growth and development depend upon successful utilization of the entire workforce, both male and female. Despite its recent economic advances, India's gender balance in economic participation and entrepreneurship remains among the lowest in the world.

To encourage more equitable economic participation and growth, better access to education and infrastructure is

needed. Due to the nature of household responsibilities, inadequate infrastructure particularly affects women. The lack of specific transport infrastructure and paved roads within villages is a bottleneck, given the constraints in geographic mobility imposed by safety and social norms. Investment in local transport infrastructure may thus directly alleviate a major constraint to female entrepreneurs in accessing markets.

There is also strong evidence of agglomeration economies in both manufacturing and services. Higher female ownership among incumbent businesses within a district/industry leads to a greater share of subsequent female entrepreneurs. Moreover, higher female ownership of local businesses in related industries (for example, similar labor needs, input-output markets) predict greater relative female entry rates, even after taking into account the particular district/industry conditions. Promoting gender networks can directly stimulate female entrepreneurship.

However, more research is needed to understand how gender networks influence aggregate efficiency. An important message is that these links and spillovers across firms can depend a lot on common traits of business owners. Likewise, interactions between the informal and formal sectors may not be as strong as interactions within each sector. Further research needs to identify how these economic forces vary by the composition of local industry. This will be especially helpful for evaluating the performance of industry concentrations in developing economies and guiding appropriate policy actions.

This Economic Premise emphasizes the connection that female entrepreneurs have to favorable incumbent industrial structures, and the high degree to which existing female business ownership enables future female entry. While achieving economic equality sometimes requires tough choices (for example, progressive taxation that may discourage effort), the opposite is true in the case of gender. Unlocking female empowerment and entrepreneurship is a direct path to shared prosperity and a more dynamic and sustainable growth.

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