# The Effect of Bridging and Bonding Social Capital on Female Literacy in India

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**Introduction**

Shanti wanted to take out a loan to start her own beading business, but when the microloan institution presented her with the papers to sign, she could not read the document. Shanti, thirty-four years old and the mother of four children in rural Rajasthan, sought a loan to sustain herself. After years of physical abuse, she left her husband and moved back in with her parents. Since no jobs were available in her town, she leaped at the chance offered by a non-governmental organization to start her own sewing business. However, being illiterate, she could not read the paperwork that would grant her a new source of financing, and she would not trust a translator who might misrepresent the document.

Like Shanti, many women are hindered in their efforts to become independent by their incapacity to read. Literacy allows women to transcend typical culture norms. Finding that women who could read had greater autonomy and self-confidence, Malini Ghose argued that literacy and education increases the organizational capacity of women and further improves their freedom. Literacy and education can also "promote greater capabilities, such as the freedom to participate in political and economic processes; use new technologies; protect oneself against exploitation (legal, economic, sexual); exercise personal mobility; attain higher social status; and increase child and maternal well-being" (Ghose 2007). Furthermore, while literacy can help women in their quest to autonomy and independence, literacy can also be important for economic growth (Klasen 2002, Barro 2001).

India is in the process of massive economic development. Peter Mayer, a scholar on the development of India, writes, "It is widely recognized that the achievement of basic literacy, especially for girls, is probably the most important developmental outcome which a government can secure" (Mayer 2001). People in India have seen substantial increases to their real incomes, and social outcomes like literacy have been improving as well. While literacy has increased in India steadily over the past decades, the development has not been shared equally across states in India. In Rajasthan for example, less than half of woman can read, while in Kerala, over 90% of women can read. The reason that improvements to literacy have not been shared equally between states remains unanswered. What causes literacy to be high in some states of India and low in others?

Scholars debate the causes of literacy, but most rely on the widely accepted idea that poverty causes low literacy. However, while poverty is important and deserves consideration, it is only part of the picture. This study expands upon the causative effects of economics and reveals social capital as an additional cause of literacy. Bridging and bonding social capital can either improve or degrade female literacy rates. Bonding social capital refers to the depth of social interactions within a particular group (in this case within the family unit). Bridging social capital refers to the breadth of social interactions across multiple groups or families. Social scholars traditionally measure social capital through formal networks, but this study also includes measures of informal networks (Putnam 2000). This study finds that in India, states with high bonding social capital have low female literacy rates while states with high bridging social capital have high female literacy rates. The next section presents existing literature on the way scholars explain low literacy and then discusses the causative effects of economics. Next the paper moves into a discussion on social capital and shows the way bonding and bridging social capital can cause heightened or diminished literacy.

**Literature Review – Causes of Literacy**

Often literacy is cited as the cause of other variables. As Ghose mentions, female literacy seems to be a core factor in determining developmental success (Ghose 2007). Since most papers focus on the effects of literacy, evidence regarding the causes of literacy is lacking. In general, two main arguments exist in the literature: economic performance and the strength of local government institutions. For economic reasons, children in poverty attend school less frequently and thus underperform academically. Strong local governments can create better schools and school programs and can assure access to education. Another contested argument is that when women enter the workforce, girls leave school and thus do not learn how to read.

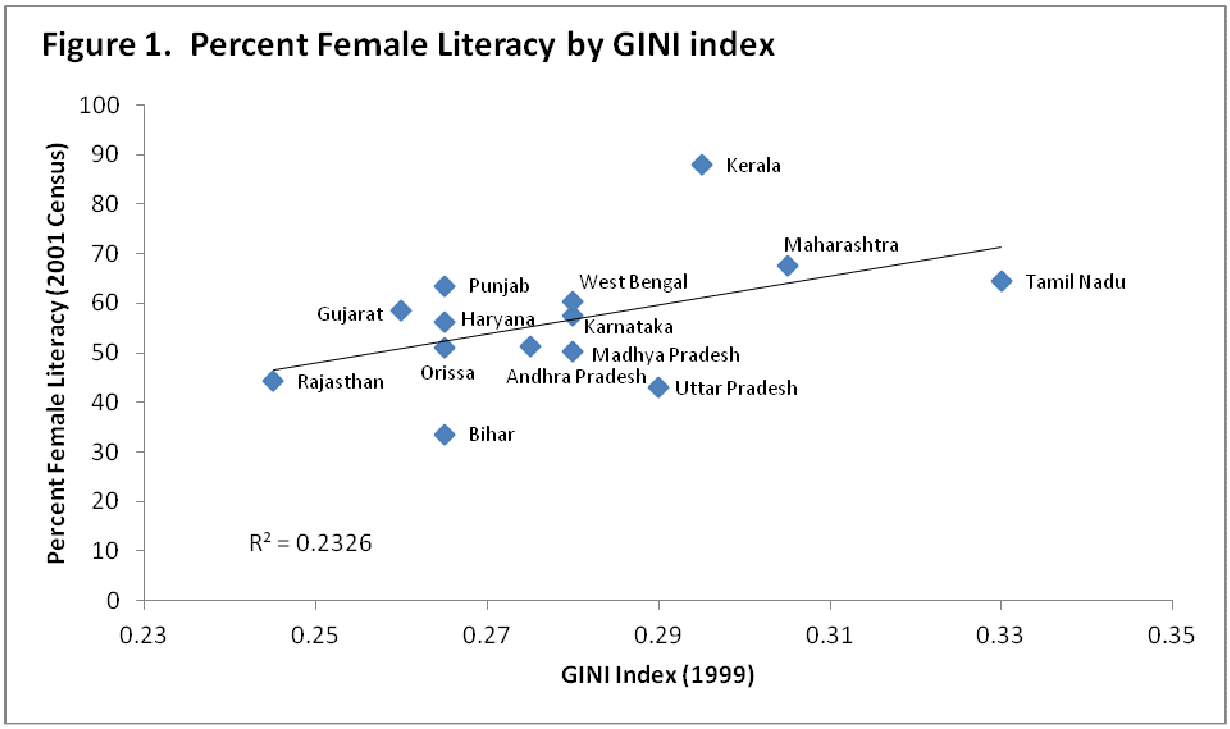
Poverty is a strong indicator of poor literacy. Families with less income often only have the capacity to send a few of their children to school. Finding that families usually prefer to send their male children to school, Sundaram noted that, "Girl's education is a low priority when resources are scarce" (Sundaram and Vanneman 2008). Part of the reason is that when girls marry, they move in with their husband's family. Parents who educate their daughters cannot

rely on them for support in their old age. Sundaram also argues that the high illiteracy rate in India is mostly a result of a lack of resources such as schools, teachers, and family resources. Economics has been shown to have an effect on literacy rates, but other factors are also important.

Murthi argues that female labor force participation causes higher female literacy rates (Murthi, Guio and Dreze 1995). Higher female employment can at times be an indicator of female empowerment. If girls are valued more, families may see a greater return on their investment in their daughters. Murthi argues that women's agency and empowerment equalizes gender inequalities. Countering this hypothesis is Sundaram's work on female work force participation and gender bias in literacy rates. She finds that a higher female work force causes a higher gender gap in literacy. While women's empowerment is seen to lead to positive outcomes for women, having women in the workforce also means that a greater number of young girls also work. In some cases, young girls work instead of going to school thus lowering female literacy rates. (Sundaram and Vanneman 2008). While women's employment and women's empowerment can help solve the literacy puzzle, economics seems to be a crucial component and deserves additional attention.

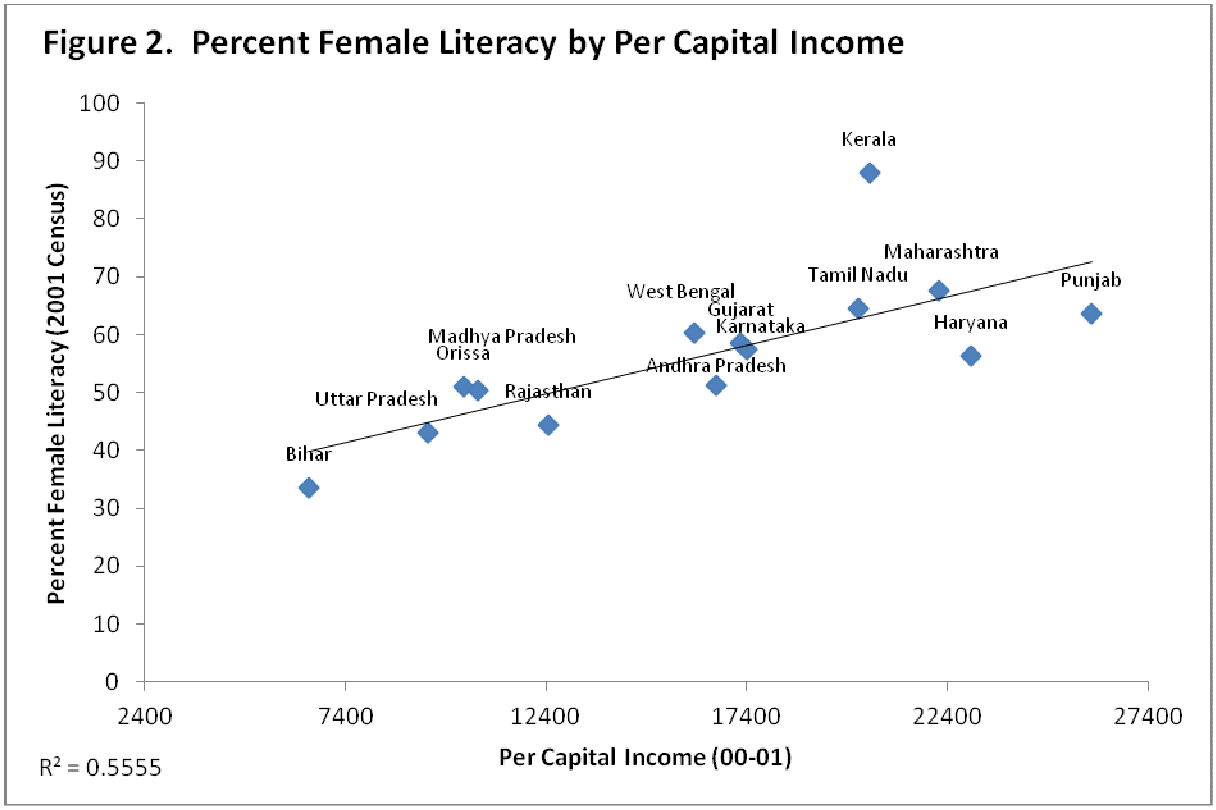
*The Role of Economics in Determining Female Literacy*

The literature shows that economics has an effect on literacy rates in India. This section examines the extent of this effect. In general, countries with heightened inequality generally have worse health and educational outcomes (Lynch, et al. 2000, Thorbecke and Charumilind 2002). Theoretically, higher inequality in states in India should lead to lower literacy rates. However, as shown by the General Inequality Index (GINI) the opposite holds true. States with high income inequality tend to have higher literacy rates (Figure 1). India's exception to the generality may be due to the nature of modern development. Indian states with high inequality also tend to have high per capita income. More developed states have better schools and a larger middle class that send children to school. With more development and more income taxes collected from the new middle class, states could better afford schools. In India, the correlation between income and literacy is weak and does not provide a good indicator for female literacy. Per capital income may provide a better explanation.




Source: Sen and Himanshu (2005),

The wealth of states in India can be measured by per capita income. Theoretically, states with higher income would have more revenue and would be able to fund more schools for their citizens. Richer families can afford books and other school supplies, and they would not need to keep their children home to help with household tasks. Comparing statewide per capita income to literacy rates shows a moderately strong correlation. As shown in table 2, per capita income explains 43% of the variation of female literacy. This relationship is twice as strong as the relationship between the GINI index and female literacy, but it still cannot fully explain the variation.




Source: Directorate of Economics and Statistics 2006.

Regarding per capita income and literacy, Kerala seems to be an outlier. Kerala has a much higher literacy rate than any other state even while its income is about average. Something about Kerala makes it a special case in India. Part of the reason for Kerala's high social success may be its high level of social capital. Excluding Kerala from the series, per capita income predicts 77% of the variation across the states in India. While income is a strong predictor, it still leaves part of the question unanswered. Since economics cannot fully explain the variation of female literacy rates between states in India, additional variables must be considered. The next sections examine the way social capital helps explain the presence and absence of female literacy.

## Social Capital in India

Scholars use social capital as a concept to provide a measure of the wealth of social connections between people. Generally, the

variables integrated into the overarching concept of social capital are trust, reciprocity, and social networks. In his book "Bowling Alone," Putnam argued that voluntary organizations can foster interpersonal connections and thus build trust and norms of reciprocity (Putnam 2000). He also demonstrated that trust and norms of reciprocity can lead to positive societal outcomes. In America, states with high levels of social capital have stronger education systems, less crime, better health, and more organizational involvement. Communities are strong when their members know and trust their neighbors; involve themselves and engage in local government, clubs, and groups; and generally spend more time with each other. Additionally, both social capital and a strong civic community can improve the effectiveness of government. Putnam found that in Italy, governments in regions with high social capital performed better than regions with low social capital (Putnam 1993). People's engagement with the political system and each other are critical components for creating an effective democracy. Putnam's work showed that social capital can measure the strength of communities.

While social capital can lead to positive outcomes, bonding social capital can lead to negative outcomes (Norris 2003). Bonding social capital links people within a small network, whereas bridging social capital connects people between groups (Putnam 2000). Beyerlein and Hipp demonstrate that within church groups bonding social capital can increase crime rates whereas bridging social capital can reduce crime rates. Evangelical churches build bonding social capital between their members, and the presence of evangelical churches increases neighboring crime rates. Evangelical church members generally engage in activities exclusively within their own congregations (Beyerlein and Hipp 2005). These activities directly foster a set of norms within the community and build social networks between congregation members. While this is beneficial to the community members, such actions separate evangelical churches from the surrounding communities. Withdrawal from the surrounding community lowers trust between in-group and out-group members. Lack of trust makes the larger community more susceptible to crime.

Catholic and mainline churches build bridging social capital by engaging their members in activities outside the church. These activities help integrate the church into the surrounding communities. By doing so, they help increase trust across the whole community, which leads to less crime. Beyerlein and Hipp show that areas with

catholic and mainline protestant churches have lower crime rates than areas with evangelical protestant churches. They conclude that bridging social capital lowers crime by creating network structures within communities. In contrast, bonding social capital increases crime by decreasing trust and the communities' capability to form collective action (Beyerlein and Hipp 2005).

Social capital has been an elusive topic for authors studying India since the traditional measures of social capital are nearly absent in India (Serra 2001). Putnam measured social capital by counting the number of voluntary associations in towns and villages. However, only 13 percent of individuals in India belong to even one organization (Chhibber 1999). Though measurements of formal networks have traditionally been the way to measure social capital, formal networks do not work as an indicator in India. Organizational involvement does not directly measure social capital. It does not look directly at norms of trust and reciprocity, but instead looks at the manifestations of these ideologies (Krishna 2001). Rather than look at involvement in formal institutions, Anirudh Krishna chose to measure involvement in informal networks.

In his studies, Putnam uses "associational life" to measure social capital. Associational life has been classified as a specific form of social capital termed "formal social capital," However, other scholars also note that forms of social capital exist without the existence of formal organizations. Informal networks tie people together without the help of established organizations. Informal networks can include behaviors that rely on normalized trust and reciprocity. The idea of informal networks is an important distinction in the culture of India. Krishna noted the absence of formal networks among villagers in India. Since Putnam's indicators do not exist in India, Krishna resorted to measurements of informal networks to measure the strength of human interactions. His work in the states of Rajasthan and Madhya Pradesh showed that informal social capital helped promote political participation in rural villages (Krishna 2002). Krishna also found that informal social capital can help development of rural villages especially when combined with strong village leaders (Krishna 2001). This paper deals with social capital by moving between the realms of both formal and informal social networks.

To directly measure social capital, Krishna devised an index that used six indicators of social cohesion between villagers. His survey included questions that revealed levels of trust, reciprocity,

and collaboration by focusing on the specific cases of communal farming, communal child-rearing, and dealing with crop-disease and natural disaster. He found that villages characterized by high levels of trust and reciprocity also had high levels of political participation (Krishna 2002). In addition, he found that social capital predicted political participation when other indicators could not. Wealth, for example, had little effect on political participation. His work showed that social capital has real-world effects on the political lives of Indians. When communities trust each other more and when they work together on communal projects, they also tend to voice their concerns to the government and take an active role in democracy. His methods of measuring social capital appear to be useful to help explain literacy rates and developmental performance, unfortunately, his social capital index has not been utilized on a large scale. Krishna's study was limited to two countries and thus her method of measuring social capital could not be utilized to predict literacy in this paper. Instead, in order to analyze the causes of literacy on a national scale, other indicators had to be found. The next sections present indicators used to measure bridging and bonding social capital, and analyze the indicators' effects on literacy rates in India.

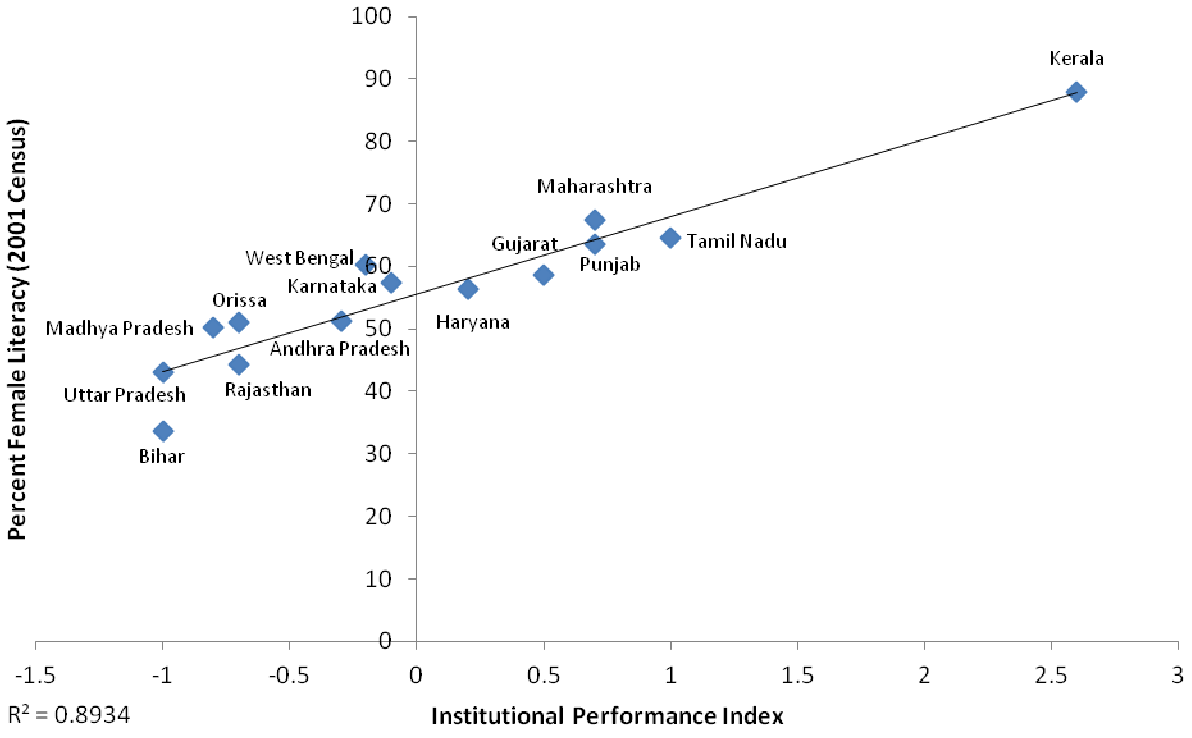
*Effect of Bridging Social Capital on Literacy:*

As mentioned above, typical measures of social capital are not present in India. In order to measure bridging social capital, I will use Peter Mayer's Institutional Performance Index (Mayer 2001). The Institutional Performance Index (IPI) measures states' strength of physical Infrastructure, medical services, education, enforcement capacity, bureaucratic independence, and welfare provision. In Italy, Putnam found that areas with high levels of bridging social capital had higher levels of institutional performance (Putnam 1993). If the same holds true in India, then a measure of Institutional Performance should show a state's level of bridging social capital. Mayer found that state's per capita income does not greatly affect the IPI. He shows that civic community is a much stronger predictor of IPI. Since social capital is hard to directly measure in India (Serra 2001), the Institutional Performance Index can indirectly show the level of bridging social capital in a given state.

If bridging social capital helps increase literacy rates, states with a high Institutional Performance Index should have high literacy. Figure 3 shows female literacy rates in relation to the

Institutional Performance Index. Overall, institutional performance accounts for 89% of the variation of literacy rates among states in India. This data shows that the original hypothesis was correct in that higher bridging social capital can lead to higher literacy rates. With the exception of Kerala, poorer countries score lower on the IPI. The BIMARU states (Bihar, Madhya Pradesh, Andhra Pradesh, Rajasthan, and Uttar Pradesh) fare less well with both literacy and Institutional Performance. Kerala scores very high on the IPI. Even without a large tax base, Kerala provides medical and educational services to its citizens. Since Kerala also scores very high on the Civic Community Index, it may be that social capital leads to Institutional performance and other positive social outcomes. Kerala's example shows that monetary wealth is not the sole indicator for social prosperity.

**Figure 3. Percent Female Literacy by the Institutional Performance Index**




Source: Mayer 2001

One issue with using Mayer's index to predict female literacy is that he includes the percent of girls attending school in his index. A strong positive correlation exists between school attendance and female literacy so using school attendance as an indicator would cause the variables to correlate better than they would otherwise. School attendance in this case is an endogenous variable. In his article, Mayer argues that historical female literacy causes civic community, which in turn causes strong institutional performance (Mayer 2001). Institutional performance creates stronger educational resources, which increases literacy rates. This spiral relationship, as he calls it, sees historical literacy as a cause and modern literacy as an effect. Even so, the evidence showing that institutional performance and female literacy is compelling leading us to the conclusion that bridging social capital can improve female literacy rates. The next section will examine the effect of bonding social capital on literacy rates.

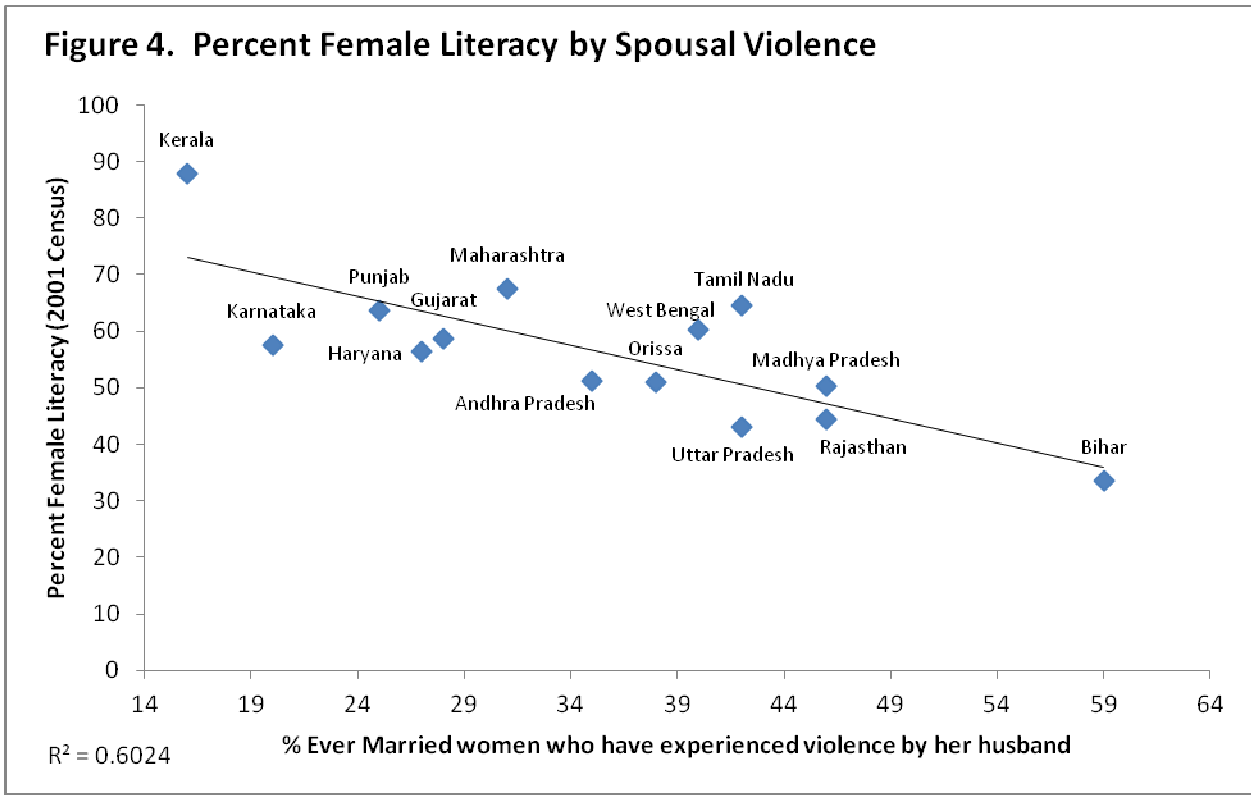
*Effect of Bonding Social Capital on Literacy*

Bonding social capital usually refers to the interactions within a group of people who share similar backgrounds or beliefs (Norris 2003). Since families share similar backgrounds, this paper treats families as groups so that bonding social capital can be measured by looking at interactions within families. Family is a central part of the Indian traditions. The children in the family are expected to look after their parents when their parents get older. In some families in India, girls marry at a young age and move in with her husband's family. The girls then become a part of the domestic workforce. Even from an early age, girls are trained by their mothers to cook, clean, and do the rest of the housework. In these types of families, girls are expected to take care of her husband's household when wed. These strong networks within the family can be referred to as bonding social capital, especially when girls stay close to home and rarely interact with people outside of the family.

Few people have attempted to measure bonding social capital in India. With the absence of available indicators, this paper focuses on the effect insular families have on women. To measure insular families, I examine spousal violence and the age of females' first marriage. Both of these measures relate to the cultural conception of woman hood in India (Singh and Hoge 2010). The measures affect

the status of women within the family and thus their bonding social capital. Women who marry into insular families have less access to people outside their new family. Additionally, women who spend time with family members often do not join formal organizations (Norris 2003) Since the number of connections outside the home is limited, they depend more on their family members thus increasing their bonding social capital at the expense of their bridging social capital.

The first indicator of bonding social capital measures the level of spousal violence. If bonding social capital leads to low literacy rates, then states with high spousal violence should have low literacy. Figure 4 shows the correlation between female literacy and spousal violence. This data from the National Family Health Survey (National Family Health Survey 3 2008) shows that states with a higher percent of women who have experienced violence from her husband also have lower literacy rates confirming the hypothesis. The variation in the occurrence of violence between states is startling. In Bihar, which scores low in virtually every measure of social progress, 59% of married women have experienced violence from their husbands. In Kerala, which scores high in many indicators of social progress including literacy, only 16% of women experienced violence. The rest of the states in India fall between these two states. This data shows that spousal violence accounts for 60% of the variance in female literacy. This correlation is even stronger than the correlation between per capita income and literacy showing the importance of indicators of social capital.




Source: National Family Health Survey 3

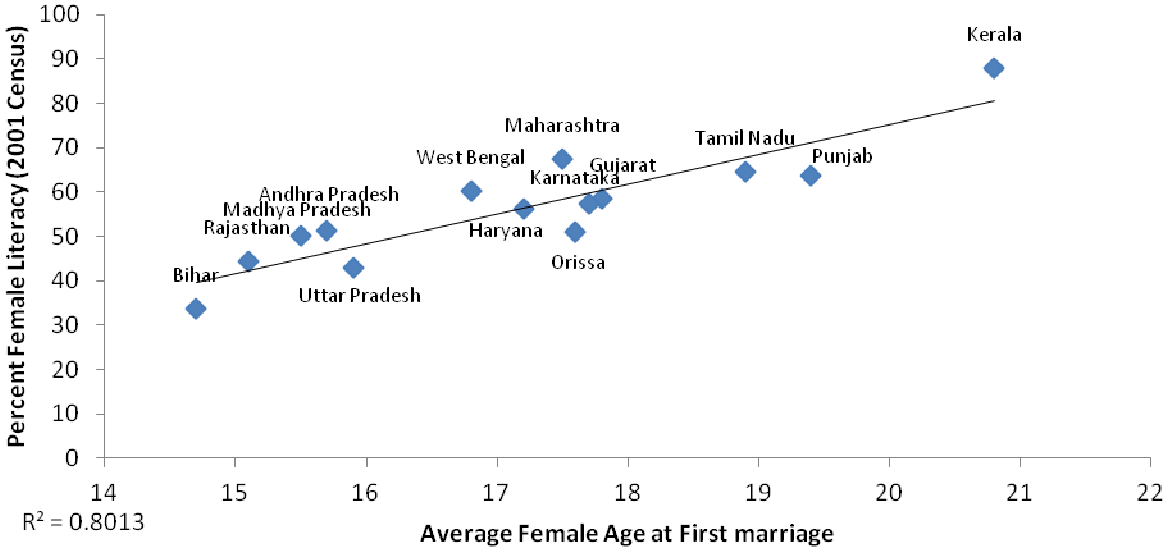
While the causation is not clear, these two variables are linked in a meaningful way. While some scholars mention that females are better able to protect themselves when they are literate (Sundaram and Vanneman 2008), it also makes sense to view the causation as such: families that experience traumatic events such as spousal violence tend to produce illiterate girls. Even though the causation is not clear, bonding social capital as measured by spousal violence is negatively linked to female literacy. What might lead to higher spousal violence?

The second indicator of bonding social capital is the age of girls' marriage. Girls who marry earlier will be more dependent on their new family and husbands for emotional and financial support. The early marriage increases their bonding social capital in that the bonds that exist between the wife and the family will be stronger since they have fewer ties outside the family. An early age of marriage signifies the importance families place in their daughters, and shows the values parents instill in their daughters. Girls at the marrying age

(12-20) do not have control over their own lives. Their lives are dictated by their parents, and in many cases, their marriages are arranged by their parents. The decision to marry and the decision to become educated fall in the hands of the parents. Even if daughters have a say in their own education family constraints play a large role in their decision. Parents and other relatives urge daughters to stay at home and learn the skills of housekeeping in order to find a good husband. Even if one or more parent imbues the daughters at an early age with a sense of ambition, it is difficult for girls to act against the cultural norms keeping them near the home and pursue a higher education (Liddle and Joshi 1986). These norms are embedded through family's high bonding social capital.

Figure 4 shows that states with a higher age of first marriage also have higher literacy. The correlation between these two variables is surprisingly strong. Eighty percent of the variation in literacy rates across states in India is explained by the age of first marriage. This correlation is twice as strong as the correlation between per capita income and literacy suggesting that delaying marriage would benefit girls twice as much as increasing their family's income.

**Figure 5. Percent Female Literacy by Median Age of First marriage**




Source: National Family Health Survey 3

In this section, I have attempted to argue that insular families have higher bonding social capital. The data presented showed that states with insular families had lower female literacy rates suggesting that high bonding social capital leads to low literacy rates. It is not so much that early marriage or spousal violence causes illiteracy, but that both of these variables are indicators of a strong patriarchal system in which females are undervalued. The underlying argument may be that the valuation of women within family structures is one of the primary factors that determine female literacy. To improve female literacy, a cultural shift to improve the status of women in the culture is necessary.

**Conclusion**

Why does female literacy vary across states in India? States with high bridging social capital have high female literacy rates whereas states with high bonding social capital have low female literacy rates. Levels of literacy in states in India were compared to levels of bridging and bonding social capital. This study measured state's bonding social capital by measuring levels of spousal violence and the age of females' first marriage. Bridging social capital was measured by looking at the Institutional Performance Index and the Civic Community Index. The data presented showed that indicators of bonding social capital (spousal violence and female's age of first marriage) strongly predicted literacy levels. Additionally, the presence of bridging social capital (measured with the Institutional Performance Index) accurately predicted higher levels of female literacy. With these indicators, the relationship between social capital and literacy begins to reveal itself. Bonding social capital prevents females from learning to read while bridging social capital creates an environment conducive to female literacy. Including this work of social capital into the current literature provides a more complete picture of the causes of female illiteracy. While economic conditions greatly affect girls' chances for education, the social landscape of families and villages also greatly affect female literacy. This study used measures family ties as indicators of social capital. While this study shows strong correlations between certain indicators of bonding social capital and literacy, these indicators could not provide a clear view of bonding social capital. Future scholars should find better ways of measuring bonding social capital in India and see if those indicators can predict female literacy. It was also clear that per capita income and bridging and bonding social capital are meshed in

ways unexplored by this paper. A deeper understanding of the link between these variables could improve research showing the causes of literacy.

Once causes of literacy are better understood, social action groups can develop strategies that address underlying issues. Non-Governmental Organizations (NGOs) have a strong ability to improve conditions in local areas (Blum 2009). While NGOs have improved the educational system in India, in order to get more girls in school something must be done to begin to break the insular effects families have on their women. Especially in areas where institutional performance is low, NGOs should work to provide opportunities for women outside of the home. Women's unions provide a strong support network outside the home (Singh and Hoge 2010). This network can begin to instill cultural norms that treat women as productive members of society instead of the traditional notions of womanhood, which lead to domesticity of women. Unless bridging social capital can be improved in India, women's educational achievement will be hard to attain.

In 2008, India had an adult literacy rate of 66%, placing it well below the world average of 84%. Although literacy in India has been gradually improving over the past decades, India still has one of the lowest national literacy rates in the world. Low literacy rates are in part to blame for India's low economic performance. India's developmental potential may hinge on its ability to educate its women. If women like Shanti are going to learn to run their own businesses, they must first be able to read. Women in India face many obstacles to literacy, many of which stem from insular family ties. Strengthening social capital that connects women with people outside of the home may be the key to India's progress.

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