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1,000 live births and 78 under-five mortality per 1,000 live births. This rate is much lower in urban centers and consequently, much higher in rural areas.<sup>4,5</sup> Based on this, we can only conclude that macro-level statistics about India as a whole grossly inflate its progress. The reality is that against many of the MDGs, as of year 2010, much of rural India is seriously lagging.

If this disturbing situation has to change, it is important to educate and empower women. The issue of gender equity and advancement of women has been seen as key to the progress of developing countries in general. In no small measure, this has been the driving force behind the formation of *UN Women* that structurally brings under one umbrella the various entities within the UN that focused on women's issues.

Sadly, with the infusion of technology in agriculture, it is women's jobs that have been most displaced and the newly created jobs, e.g., operating the new technologies, have gone to men.<sup>6</sup> However, technology can also be a solution. A variety of technology-based solutions, such as Internet kiosks and cell phones, are in use across India to provide information to people in rural India. Women, in particular, stand to benefit from such Internet kiosks as they [kiosks] provide valuable information about prenatal and antenatal care for the mother and the baby. Within the past few years, it was noted that there were about 150 such Internet kiosk projects throughout India.<sup>7</sup> Despite the vast number of Internet kiosk projects, there are many important unanswered questions that merit attention:

- a. Do such kiosks lead to systematic benefits related to reducing infant, child and maternal mortality?
- b. If so, who is most likely to benefit?
- c. Are there any specific ways to foster success?

I attempt to answer these questions based on a five-year study of women in 10 villages in India that deployed Internet kiosks that were compared with 10 adjacent villages with no such intervention (i.e., a control group). Data were gathered using surveys and government archives.



friendship and hindrance. For example, advice networks are the interrelationships amongst individuals based on giving and getting advice from one another, and friendship networks are maps of the affective social relationships among individuals. I focus on friendship networks as it relates specifically to the bonds people develop and when it comes to sensitive women's issues, such as prenatal and antenatal care, friendship ties are likely to be most relevant in disseminating information. Such ties are particularly important in our context due to the low literacy, high poverty, high collectivism and an oral tradition of information dissemination, especially among women in rural India. The role of social networks is further underscored given the higher levels of illiteracy among women, especially in rural India, associated lack of computer knowledge, and the biases against seeking such information. Thus, the key vehicle for the diffusion of relevant information and consequent behavior will not be achieved by the use of the kiosks by many women but by the use by few women and the transfer of information via their ties, ties of their ties and so on. In sum, a social networks lens is well suited for this context. The approach of choosing one type of network is consistent with a vast body of prior research on social networks.

## **Theoretical Framework and Model**

It is widely recognized in social networks research that network position confers a variety of benefits.<sup>19</sup> Most important among those are benefits of having access to knowledge of others to whom one is connected. Such knowledge can lead to performance of specific behaviors that would otherwise not be possible or about which a person may be completely unaware. Further, network position itself can bring about behaviors through social pressures to act. Depending on

**Table 2. Impact of Interactions of Strong and Weak Ties on Outcomes Related to Natal Care**

		Strong ties	
		Few (low)	Many (high)
Weak ties	Few (low)	Worst	Bad
	Many (high)	Best	Moderate

**Role of the Lead User**

In much prior research, the lead user has been theorized to have an impact on the diffusion of a technology. Lead users tend to be opinion leaders who can influence others. Intuition would suggest that if the lead user is a highly central woman with many strong ties, she can not only positively influence other women to use the kiosk to acquire the relevant knowledge about medical care but also share the knowledge she has acquired with her many ties. However, I argue that an alternative mechanism will be at play: one where strong ties will again be detrimental to the diffusion of the knowledge and enactment of relevant positive behaviors among women—i.e., seeking care. I believe a woman with many strong ties in a friendship network will also be subject to the influence of others, who may not have used the kiosk and may be skeptical of the acquired knowledge. In turn, this will result in the lead user being far more tempered in their positive views. Further, strong ties are expensive and time-consuming to maintain and if the lead user is strongly embedded in the network, she may not necessarily have enough time to educate her vast network, which, of course, I acknowledge will be educated and influenced by the diffusion of information (rather than everyone having to acquire the information first-hand from a lead user). In contrast, a lead user with weak ties can help in presenting the information in a more balanced way without it being tempered in the negative. It should, of course, be acknowledged here that I am assuming that a lead user will acquire knowledge about medical care and view the same positively.

The research model is shown in Figure 1.

**Figure 1. Research Model**



## Project Overview

We present various details related to the project in a series of tables. Table 3 presents the basic details of the study context. Table 4 presents the various constructs and associated measurement.

### Table 3. Basic Details

Location	Villages in India
Number of villages	10 in technology intervention, 10 control group
Target population	Women
Intervention	One staffed (16 hours per day) Internet kiosk for every 100 families
Data collection	Survey at the start of the deployment of the kiosk

First, I present a summary of mortality rates in the intervention and control groups. As seen in Table 5, there is a declining trend in both groups, with a more rapid decline in the intervention group. Second, I present a summary of the percentage of women who visited the kiosk at least once during a year. As can be seen in Table 6, even after 5 years, the percentage of women using a kiosk is under 10% of all women. This confirms that using a social network lens is valuable because clearly the transmittal of information hinges not on using the kiosk but on women's ties to those who may have used the kiosk or ties of ties.

**Table 5. Mortality Rates**

Year	Control group (10 villages)	Intervention group (10 villages)
2002	73.1	73.5
2003	70.3	70.8



**Table 7. Predicting Medical Care Sought**

	1	2	3	4	5
R <sup>2</sup>	.24	.29	.34	.35	.43
ΔR <sup>2</sup>		.05***	.10***	.10***	.08***
<i>Control variables:</i>					
Age	.17***	.15**	.13**	.13**	.13**
Marital status	-.12**	-.11**	-.08	-.08	-.08
Family size	-.03	-.02	-.02	-.02	-.02
# of children	.07	.05	.03	.03	.03
Education level	.15***	.13**	.11**	.07	.07
Mortalities in family	.15***	.15***	.13**	.11**	.11**
Knowledge	.17***	.12**	.13**	.15***	

Table 9. Predicting Mortality

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