\subsection{Summary}

\paragraph{}

In order to better understand one of the major plague of our society, we have applied the SISa model proposed by Hill et al. to a sample of subjects living in a community next to MIT. Our aim was to evaluate the extent to which obesity spread through social networks. However when evaluating the SISa model parameters, neither do we find any evidence that obesity spread through social networks nor can we refute this. There are two main reasons accounting for such reasons. The first is that our results are highly influenced by the nature of our sample as there are only few datasets containing large longitudinal personal information on obesity and publicly accessible. The second is that the claim of obesity spread through social network has been subject to virulent controversy and our results may corroborate the doubts raised by Shalizi and Thomas. While we cannot conclude on weight homophily in our sample, we exhibited the role of social environment, namely household income in our case, in becoming obese.

\subsection{Outlook}

Given the importance of obesity, we believe it is essential to account for the roles of confounding variables in obesity spread. We do not exclude that obesity may spread through social network and think it is critical to perform a new study based on dataset comparable to the Framingham Heart Study to clarify the controversy surrounding the potential social contagion of obesity. The number of deaths linked directly or indirectly to obesity as well as the high social costs of obesity (Cawley \& Meyerhoefer, 2012) are such that this issue needs to be tackled.

For References

\paragraph{}

Cawley, J., \& Meyerhoefer, C. (2012). The medical care costs of obesity: an instrumental variables approach. Journal of health economics, 31(1), 219-230.