Q. Are number of contacts and purchase amount correlated?

It is observed that email was sent intensively during 2007 with a maximum of 48 emails sent to a single customers. This question is to investigate whether the number of emails/catalogues sent to a customers was correlated to how much they would purchase.

Fig. 1 and Fig. 2 shows the distribution of number of emails and catalogue sent. Fig. 1 shows the number emails and catalogues from 2004 to 2007. Each point represents a customer. Fig. 2 shows the distribution of emails and catalogues sent in different period.

Fig. 1

Fig. 2

From the linear regression, we see that both number of email sent and the number of catalogue have positive effect on the amount of purchase made by the customers. However, the number of email sent is economically insignificant when compared with the effect of catalogue sent. Also, the adjusted R square of the model is very small, indicating that they cannot explain the variation of purchase amount. Consider that people might have different response in different season, further analysis was done for each month. However, the result was still insignificant, suggesting that sending out contacts more frequently is unlikely to boost sales.

Table. 1

From fig. 2, it is obvious that email and catalogue were sent especially frequently on specific seasons and there could be a potential seasonal effect for their products. To take care of the potential heterogeneity in different seasons, the regression was done for different months in table 2. However, the regression results are still insignificant and there is no evidence found that sending emails or catalogues frequently can boost sales.

Table. 2