

Appendix: Bias analysis

Although our response rate is consistent with, or better than, the response rates other financial surveys, we were concerned about a series of biases in our responses via a self-selection, non-response or other source of response bias. Therefore, we looked for evidence of such bias in the response set. We hypothesized that there may be a self-selection bias based on the financing stage (such as Early or Late stage) or on eventual outcome of the company leading to an over or under representation of failed or successful companies.

We tested for the presence of these biases using two different tests - the Kolmogorov-Smirnoff test (KS Test) and the Chi-Squared test. We applied both these tests to compare the response to the random sample as well as to compare the response to the initial universe of all companies in the database that we originally selected from. (Note that the ``universe" in this case consisted of all 16478 companies that survived the heuristic filter, and includes companies that were eventually disqualified). Finally, for completeness, we also tested for any bias in our random sample by testing the random sample against the universe.

These two tests have slightly different null hypotheses. The KS-test tests whether all three sets of companies (universe, sample and responses) are drawn from the same continuously distributed ``parent" population. The Chi-Squared test tests pair wise, to see whether responses were biased in the draw from the sample set, whether the sample set biased from the universe, and whether the responses were biased from the universe. We include results from both tests.

1. No evidence of statistically significant bias on the company status.

We categorized each firm into one of three categories:

Active : combination of Active and Pending Acquisition.

Failed : combination of Bankruptcy - Chapter 11, Bankruptcy - Chapter 7 and Defunct

Successful : all other categories.

The distribution across these 3 categories in percentage terms follows:

Appendix Table 1. Company Status Distributions in Percentage Terms

<i>Status</i>	<i>Universe</i>	<i>Sample</i>	<i>Response</i>
Active	44.17	39.00	35.86
Failed	20.26	22.87	17.24
Successful	37.57	38.13	46.90

The K-S tests in Appendix Table 2 below suggest that there is no evidence of statistically significant bias, even at very high levels of statistical significance. Under the Chi Squared test, we see that there is no statistically significant evidence of bias even at very high levels of significance between the Response and the Sample, or the Sample and the Universe, and the only mild evidence of bias (at the 10 % level) between the Response and the Universe.

Appendix Table 2. Kolmogorov-Smirnov Test and Chi Squared Test Results for Firm Status

Comparison	K-S Statistic	K-S p-value	Chi-Squared Statistic	Chi-Squared p-value
Response-Sample	0.3333	0.9768	3.3601	0.1612
Response-Universe	0.3333	0.9768	5.6196	0.0602
Sample-Universe	0.3333	0.9808	1.1258	0.5696

Thus, we can infer that there is no statistically significant evidence of bias using either the K-S test or the Chi-Squared test (at the 5% level of significance) based on either test.

2. No evidence of statistically significant bias on the company stage.

We categorized each company based on the VentureXpert company stage at the time of the last investment within the 1998-2002 period, into one of 3 categories: 1) Seed, 2) Early Stage, and 3) Expansion or Later Stage.

The distributions of the regrouped company stage corresponding to the last financial round are as follows:

Appendix Table 3. Company Stage Distributions (in %)

<i>Status</i>	<i>Universe</i>	<i>Sample</i>	<i>Response</i>
Seed	11.26	8.60	6.21
Early Stage	24.13	26.20	26.21
Expansion/ Later Stage	64.61	65.20	67.59

The results of the KS and Chi-Squared tests are as follows:

Table 4. Kolmogorov-Smirnov Test and Chi Squared Test Results for Company Status

Comparison	K-S Statistic	K-S p-value	Chi-Squared Statistic	Chi-Squared p-value
Response-Sample	0.3333	0.9774	0.7533	0.6862
Response-Universe	0.3333	0.9810	2.5803	0.2725
Sample-Universe	0.3333	0.9768	0.8095	0.6671

These results suggest that there is no evidence of bias in the responses based on the company financing stage.

3. Nonresponse bias analysis

In order to verify whether significant differences in the early responses and the late responses, we performed a t-test comparing the means of the 2 groups for each of 63 questions. The late respondents served as proxies for non-respondents. This test is suggested by Wallace (cf. Wallace, 1988).

We first ordered the data by response date, then we defined the late responses as 10, 20, 33, and 50 percent of the last responses. In Appendix Table 5, we report the t-test results for two thresholds of significance: the 5 and 10 percent levels.

Appendix Table 5. Number of Questions for Early and Late-Group Differences

Late respondents are	Significant at 5% level	Significant at 10% level
10% of the population	2	6
20% of the population	4	5
33% of the population	3	5
50% of the population	4	8

Our results are similar to those of other financial surveys such as Graham and Harvey, 2001 and Brau and Faucett, 2006.

Appendix Table 6. Nonresponse Bias Results

References	Total	Significant at 5% level	Response
Graham and Harvey	88	8	13
Brau and Faucett	66	3	6
Our survey *	63	3	5

* with last 33% of responses are considered as late.