# Electronic Companion:
# How Does Popularity Information Affect Choices?
# A Field Experiment

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January 10, 2011

### Abstract

This Electronic Companion contains supporting materials for the paper: Tucker, Catherine and Juanjuan Zhang (2011), "How Does Popularity Information Affect Choices? A Field Experiment," *Management Science*, forthcoming.

# 1 Additional Tables

Table 1: Seasonality in the Wedding Industry

| Month | Percentage of Engagements | Percentage of Marriages |
|---|---|---|
| January | 5 % | 6 % |
| February | 8 % | 7 % |
| March | 4 % | 7 % |
| April | 6 % | 8 % |
| May | 6 % | 8 % |
| June | 8 % | 11 % |
| July | 9 % | 10 % |
| August | 9 % | 10 % |
| September | 7 % | 10 % |
| October | 9 % | 9 % |
| November | 9 % | 7 % |
| December | 19 % | 7 % |

Note: One concern with studying the wedding industry is that an experiment could be confounded by seasonal changes in the level of interest in weddings. This is why we use a rich set of controls to capture the time trend. Meanwhile, Table 1 provides additional assurance that the interest in the wedding industry is more evenly spread across the year than the conventional belief in "summer weddings" would suggest. The largest monthly shock is in December, when 19 percent of engagements take place. By contrast, there is less variation in how many weddings take place each month. June and July, commonly assumed to be the most popular months for weddings, only account on average for 10.5 percent of the interest in wedding vendors. Data source: Fairchild Bridal Infobank American Wedding Study 2002, and National Center for Health Statistics 2004.

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Table 2: The Effect of Popularity Information and the Moderating Effect of Appeal (Appeal Defined by Location; Pooling All Three Categories)

| | Full Panel (1) | Short Window (2) |
|---|---|---|
| **Test × Bridal × PrevClicks × NarrowAppeal** | 43.93** | 16.01* |
| | (20.14) | (9.231) |
| **Test × Caterers × PrevClicks × NarrowAppeal** | -7.860 | -4.119 |
| | (13.98) | (6.428) |
| **Test × Bridal × PrevClicks** | 23.09 | 13.98** |
| | (14.42) | (6.138) |
| **Test × Caterers × PrevClicks** | 13.96* | 12.40** |
| | (8.415) | (5.275) |
| Test | -29.47*** | -13.68*** |
| | (5.671) | (3.834) |
| Test × Bridal | 13.25 | 15.78*** |
| | (8.762) | (4.788) |
| Test × NarrowAppeal | -0.937 | -1.272 |
| | (10.08) | (5.090) |
| Test × Bridal × NarrowAppeal | 35.63** | 6.726 |
| | (15.98) | (7.790) |
| PrevClicks | 64.47*** | -35.31 |
| | (13.67) | (29.40) |
| Test × PrevClicks | -7.456 | -2.760 |
| | (6.375) | (4.387) |
| Bridal × PrevClicks | 181.9*** | 196.6*** |
| | (56.96) | (41.11) |
| NarrowAppeal × PrevClicks | -12.51 | 45.68 |
| | (17.88) | (32.50) |
| Test × NarrowAppeal × PrevClicks | -2.986 | -0.532 |
| | (8.622) | (5.004) |
| Bridal × NarrowAppeal × PrevClicks | -6.458 | -132.5** |
| | (82.97) | (58.70) |
| Test × Caterers | 34.77*** | 28.05*** |
| | (7.852) | (4.477) |
| Test × Caterers × NarrowAppeal | -9.447 | -2.533 |
| | (13.76) | (6.153) |
| Caterers × PrevClicks | 74.30* | 33.65 |
| | (41.51) | (44.22) |
| Caterers × NarrowAppeal × PrevClicks | -46.53 | -19.12 |
| | (53.70) | (54.26) |
| Vendor Fixed Effects | Yes | Yes |
| Observations | 334 | 334 |
| Log-Likelihood | -1463.6 | -1185.1 |

Note: Linear panel specification with vendor fixed effects. Dependent variable: the total number of clicks a vendor receives during the pre-test versus the test period. Previous clicks are standardized and mean-centered. In the Bridal Shops treatment category, previous clicks information is displayed, and vendors are ranked in descending order of popularity. In the Florists control category, no previous clicks information is displayed, and vendors are ranked alphabetically. In the Caterers control category, no clicks information is displayed, and vendors are ranked in descending order of popularity. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

Table 3: How Prices Influence The Effect of Popularity Information and the Moderating Effect of Appeal (Appeal Defined by Location)

| | Full Panel (1) Florists as Control | Full Panel (2) Caterers as Control | Short Window (3) Florists as Control | Short Window (4) Caterers as Control |
|---|---|---|---|---|
| **Test × Bridal × PrevClicks × NarrowAppeal** | 45.71** | 55.91** | 14.03 | 20.54* |
| | (19.41) | (26.96) | (9.137) | (12.08) |
| **Test × Bridal × PrevClicks** | 21.73* | 7.386 | 15.26** | 1.565 |
| | (12.61) | (11.34) | (5.962) | (5.001) |
| Test | -30.75*** | 4.571 | -14.91*** | 13.47*** |
| | (8.293) | (7.623) | (3.721) | (3.169) |
| Test × Bridal | 10.22 | -25.10** | 16.17*** | -12.21*** |
| | (10.71) | (10.43) | (4.933) | (4.422) |
| Test × NarrowAppeal | 14.24 | -9.658 | 4.372 | -2.909 |
| | (13.51) | (17.00) | (6.145) | (7.919) |
| Test × Bridal × NarrowAppeal | 30.28* | 54.18** | 3.601 | 10.88 |
| | (17.58) | (20.70) | (8.155) | (9.421) |
| PrevClicks | 65.25** | 129.2*** | -37.81 | 0.465 |
| | (25.09) | (41.70) | (37.18) | (32.89) |
| Test × PrevClicks | -8.211 | 6.129 | -4.201 | 9.495*** |
| | (9.276) | (6.930) | (4.121) | (2.861) |
| Bridal × PrevClicks | 103.0* | 39.07 | 83.46 | 45.18 |
| | (52.14) | (63.60) | (62.58) | (58.13) |
| NarrowAppeal × PrevClicks | -8.627 | -49.49 | 35.62 | 24.42 |
| | (30.58) | (71.25) | (52.46) | (91.12) |
| Test × NarrowAppeal × PrevClicks | -0.268 | -10.47 | 2.003 | -4.503 |
| | (12.78) | (22.16) | (5.624) | (9.950) |
| Bridal × NarrowAppeal × PrevClicks | 89.28 | 130.1 | -24.46 | -13.27 |
| | (73.54) | (100.0) | (93.61) | (117.3) |
| Test × Bargain | 6.042 | 16.83 | 3.425 | 26.07 |
| | (29.83) | (32.24) | (29.49) | (37.56) |
| Test × Bridal × Bargain | 17.36 | 6.577 | -10.76 | -33.40 |
| | (37.28) | (38.76) | (31.16) | (38.76) |
| Test × Bargain × NarrowAppeal | -66.99 | -109.5** | -15.79 | -14.07 |
| | (45.62) | (42.52) | (41.19) | (20.83) |
| Test × Bridal × NarrowAppeal × Bargain | -42.51 | | 1.714 | |
| | (60.99) | | (46.64) | |
| Bargain × PrevClicks | -15.44 | | -3.257 | |
| | (121.8) | | (217.4) | |
| Test × Bargain × PrevClicks | 8.143 | | 23.03 | |
| | (54.23) | | (37.84) | |
| Bridal × Bargain × NarrowAppeal × PrevClicks | 187.3 | | 170.5 | |
| | (139.6) | | (224.5) | |
| **Test × Bridal × PrevClicks × Bargain** | -20.73 | | -26.99 | |
| | (55.76) | | (38.33) | |
| NarrowAppeal × Bargain × PrevClicks | 12.53 | | 70.15 | |
| | (137.0) | | (234.3) | |
| Test × Bargain × NarrowAppeal × PrevClicks | -4.723 | | -35.54 | |
| | (79.76) | | (57.59) | |
| Bridal × NarrowAppeal × Bargain × PrevClicks | -427.2 | | -295.7 | |
| | (279.0) | | (294.1) | |
| **Test × Bridal × PrevClicks × NarrowAppeal × Bargain** | -272.6 | | -12.88 | |
| | (241.2) | | (102.3) | |
| Vendor Fixed Effects | Yes | Yes | Yes | Yes |
| Observations | 240 | 232 | 240 | 232 |
| Log-Likelihood | -1036.2 | -1017.0 | -848.1 | -812.4 |

Note: Linear panel specification with vendor fixed effects. Dependent variable: the total number of clicks a vendor receives during the pre-test versus the test period. Previous clicks are standardized and mean-centered. In the Bridal Shops treatment category, previous clicks information is displayed, and vendors are ranked in descending order of popularity. In the Florists control category, no previous clicks information is displayed, and vendors are ranked alphabetically. In the Caterers control category, no clicks information is displayed, and vendors are ranked in descending order of popularity. 18 florists and only 4 caterers in our sample are rated as bargains. Therefore, we could only estimate the full set of interactions when using the Florists category as a control. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

Table 4: The Effect of Popularity Information and the Moderating Effect of Appeal (Appeal Defined by Name; Pooling All Three Categories)

|  | Full Panel (1) | Short Window (2) |
|---|---|---|
| **Test × Bridal × PrevClicks × NarrowAppeal** | 53.42** | 21.62** |
|  | (25.85) | (9.138) |
| **Test × Caterers × PrevClicks × NarrowAppeal** | 5.065 | 2.881 |
|  | (14.58) | (4.973) |
| **Test × Bridal × PrevClicks** | 21.72 | 10.64** |
|  | (14.33) | (4.954) |
| **Test × Caterers × PrevClicks** | 14.38* | 10.56*** |
|  | (7.367) | (3.697) |
| Test | -32.44*** | -13.94*** |
|  | (5.486) | (2.706) |
| Test × Bridal | 22.64** | 13.73*** |
|  | (9.606) | (4.115) |
| Test × UnusualName | -0.235 | 0.877 |
|  | (8.335) | (4.803) |
| Test × Bridal × UnusualName | 14.23 | 6.933 |
|  | (16.89) | (7.373) |
| PrevClicks | 42.96*** | -16.52 |
|  | (12.22) | (19.36) |
| Test × PrevClicks | -7.726 | -2.907 |
|  | (4.841) | (2.704) |
| Bridal × PrevClicks | 170.9*** | 64.83 |
|  | (50.87) | (41.57) |
| UnusualName × PrevClicks | 30.30* | 32.26 |
|  | (17.48) | (33.04) |
| Test × UnusualName × PrevClicks | -8.494 | -0.149 |
|  | (7.448) | (4.210) |
| Bridal × UnusualName × PrevClicks | -85.08 | 33.57 |
|  | (92.69) | (58.03) |
| Test × Caterers | 34.11*** | 26.11*** |
|  | (7.731) | (3.628) |
| Test × UnusualName × Caterers | 8.976 | 4.715 |
|  | (14.23) | (5.508) |
| Caterers × PrevClicks | 67.56* | -12.94 |
|  | (35.78) | (42.85) |
| Caterers × UnusualName × PrevClicks | 3.961 | 60.79 |
|  | (66.13) | (51.17) |
| Vendor Fixed Effects | Yes | Yes |
| Observations | 334 | 334 |
| Log-Likelihood | -1472.2 | -1176.9 |

Note: Linear panel specification with vendor fixed effects. Dependent variable: the total number of clicks a vendor receives during the pre-test versus the test period. Previous clicks are standardized and mean-centered. In the Bridal Shops treatment category, previous clicks information is displayed, and vendors are ranked in descending order of popularity. In the Florists control category, no previous clicks information is displayed, and vendors are ranked alphabetically. In the Caterers control category, no clicks information is displayed, and vendors are ranked in descending order of popularity. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$.

# 2 Additional Figures

Figure 1: Mock-Up Webpage: Before and During the Experiment

| Boutique La Reine | | Jenn & Jills Bridal Boutique | **Clicks** |
| Boston, MA | | Boston, MA | |
| | (781) 899-0348 | | (617) 998-0779 | **1587** |
| Bridals by Rochelle | | Bridals by Valerie | |
| Uxbridge, MA | | Reading, MA | |
| | (508) 278-9166 | | (781) 942-2525 | **1563** |
| Bridals by Valerie | | Boutique La Reine | |
| Reading, MA | | Boston, MA | |
| | (781) 942-2525 | | (781) 899-0348 | **800** |
| Flair | | Yolanda's | |
| Boston, MA | | Waltham, MA | |
| | (617) 247-2828 | | (781) 398-1027 | **796** |
| Gowns by Jane | | Gowns by Jane | |
| Nowell, MA | | Nowell, MA | |
| | (781) 878-2050 | | (781) 878-2050 | **648** |
| Grandasia Bridal & Fashion | | Flair | |
| Worcester, MA | | Boston, MA | |
| | (508) 328-6380 | | (617) 247-2828 | **573** |
| Jenn & Jills Bridal Boutique | | Grandasia Bridal & Fashion | |
| Boston, MA | | Worcester, MA | |
| | (617) 998-0779 | | (508) 328-6380 | **489** |
| Yolanda's | | Bridals by Rochelle | |
| Waltham, MA | | Uxbridge, MA | |
| | (781) 398-1027 | | (508) 278-9166 | **134** |

(Before the experiment)          (During the experiment)

Note: Due to confidentiality agreements with the web site, we are not permitted to reprint the actual webpages concerned. However, to give a basic idea of what they looked like before and during the experiment, we constructed the two mockup webpages shown in this figure.

Figure 2: Distribution of Pre-Test Clicks by Appeal (Name)
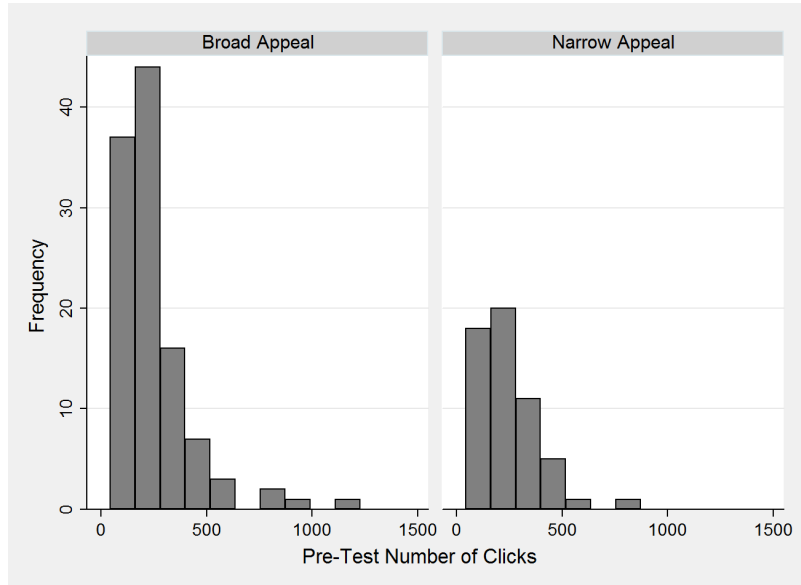


Note: The sample includes vendors from all three categories. The horizontal axis measures the number of clicks received during the two-month pre-test period. The vertical axis measures the number of vendors who receive the corresponding number of pre-test clicks.
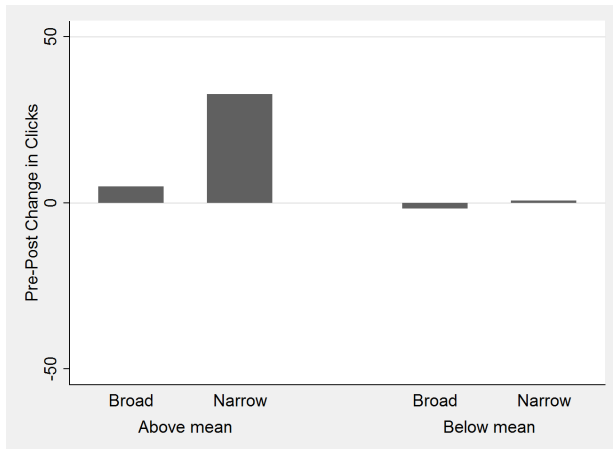
Figure 3: Before-After Changes in Clicks by Popularity and by Appeal (Name)
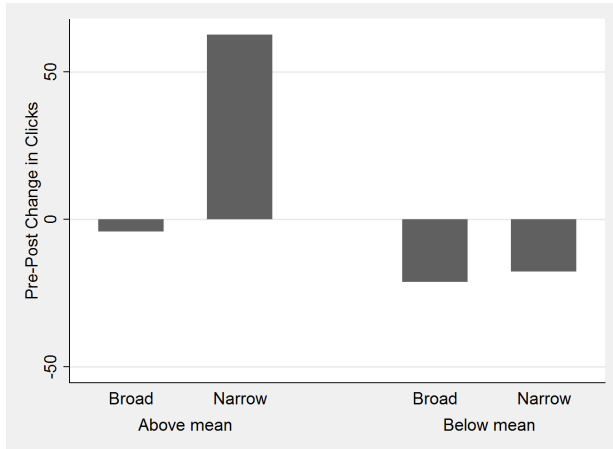


(a) Bridal Shops (popularity displayed; ranked by popularity)
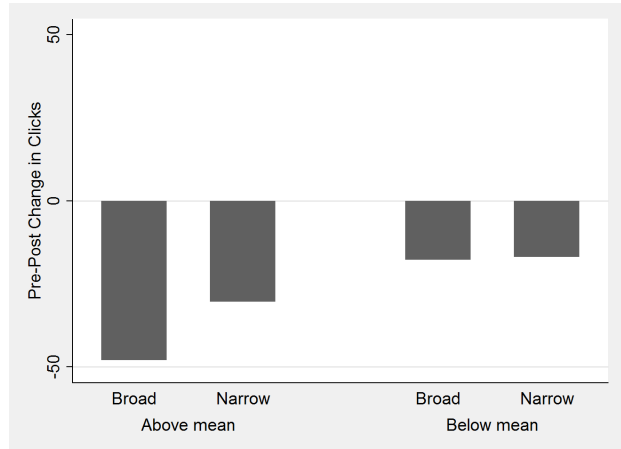


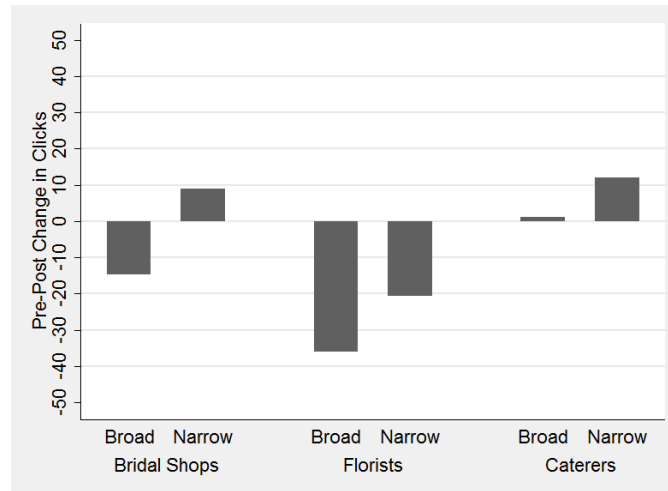(b) Florists (popularity not displayed; ranked alphabetically)



(c) Caterers (popularity not displayed; ranked by popularity)

Note: The vertical axis is the total number of clicks in the test period minus that in the pre-test period. In each category, vendors are grouped by whether their pre-test clicks are "above mean" or "below mean," and by their breadth of appeal as defined by vendor name.

Figure 4: Unconditional Effect of Popularity Information (Appeal Defined by Name)



Note: The vertical axis is the total number of clicks in the test period minus that in the pre-test period. In the Bridal Shops treatment category, previous clicks information is displayed, and vendors are ranked in descending order of popularity. In the Florists control category, no previous clicks information is displayed, and vendors are ranked alphabetically. In the Caterers control category, no clicks information is displayed, and vendors are ranked in descending order of popularity.