

DETERMINING SIGNIFICANT DIFFERENCES IN NEW ENTRANTS FLYER MAILING EXPERIMENT

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Westat conducted an investigation of various approaches to the use of advance flyers in the 1993 National Survey of Recent College Graduates. There were four experiment groups that were tested:

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|---------|--|
| Group 1 | Offer Federal job information/business reply envelope used |
| Group 2 | Offer nothing/business reply envelope used |
| Group 3 | Offer study results/stamped return envelope |
| Group 4 | Offer study results/business reply envelope |

Three comparisons were made: the effect of offering Federal job information, the effect of offering study results, and the effect of using a stamped return envelope. Of the three comparisons only the effect of the stamped return envelope had differences that were significant, i.e. the confidence interval of the difference between the groups being compared did not contain zero. All the other confidence intervals contained zero, thus these differences are not statistically significant. The calculations follow for each comparison.

Group 1 and 2: Offer Federal Job Information

$$\begin{aligned} \text{Confidence interval} &= (.29 - .29) \pm 2* \sqrt{\frac{.29*.71}{3724} + \frac{.28*.72}{6069}} \\ &.01 \pm .019 \\ &(0, .029) \end{aligned}$$

Group 2 and 4: Offer Study Results

$$\begin{aligned} \text{Confidence interval} &= (.29 - .28) \pm 2* \sqrt{\frac{.29*.71}{6070} + \frac{.28*.72}{6069}} \\ &.01 \pm .016 \\ &(0, .026) \end{aligned}$$

Group 3 and 4: Stamped Return Envelope

$$\begin{aligned} \text{Confidence interval} &= (.32 - .29) \pm 2* \sqrt{\frac{.32*.68}{3719} + \frac{.29*.71}{6070}} \\ &.03 \pm .019 \\ &(.011, .049) \end{aligned}$$

In addition, a final comparison that seemed useful was comparing groups 1, 2, and 4, where the business reply envelope was used with offers of job information, nothing, and study results, with group 4 where the stamped return envelope was used. This comparison also showed significant differences. First we had to calculate the weighted percent for groups 1, 2, and 4. This was done as follows:

$$\text{Percent} = (3724 \cdot .29) + (6069 \cdot .28) + (6070 \cdot .29)$$

$$\frac{4539.58}{15863}$$

$$.2862$$

Group 1, 2, 4 and 3: Business Reply Envelope vs. Stamped Return Envelope

$$\begin{aligned} \text{Confidence interval} &= (.32 - .2862) \pm 2 \sqrt{\frac{.32 \cdot .68}{3719} + \frac{.2862 \cdot .7138}{15863}} \\ &.034 \pm .017 \\ &(.017, .051) \end{aligned}$$

The results indicate that a higher response rate is achieved when the stamped return envelope is used and study results are offered, as opposed to a business reply envelope and no offer, or offer of job information or study results. We are unsure of the effect of the stamped return envelope when federal job information is offered or no information is offered.

COMPARISONS FOR EACH EXPERIMENT TYPE

Federal Job Information Offered

29%	Group 1: Federal Job Information offered (business reply envelope)
<u>28%</u>	Group 2: Nothing offered (business reply envelope)
1%	Difference

Study Results Offered

29%	Group 4: Study Results offered (business reply envelope)
<u>28%</u>	Group 2: Nothing offered (business reply envelope)
1%	Difference

Stamp on Return Envelope

32%	Group 3: Stamp on return envelope (Study Results offered)
<u>29%</u>	Group 4: Business reply envelope (Study Results offered)
3%	Difference