

Executive Summary

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Introduction

In a recent round of Miss N Magazine distributions, there was an error in the routing numbers that resulted in many magazine issues being sent incorrectly to the same addresses. StatCon Enterprises was hired to construct and conduct a telephone survey that determined what happened to the mail when the routing number was incorrect, and our goal is to further the analysis to obtain a realistic estimate of the number of magazines that were delivered properly.

Methodology

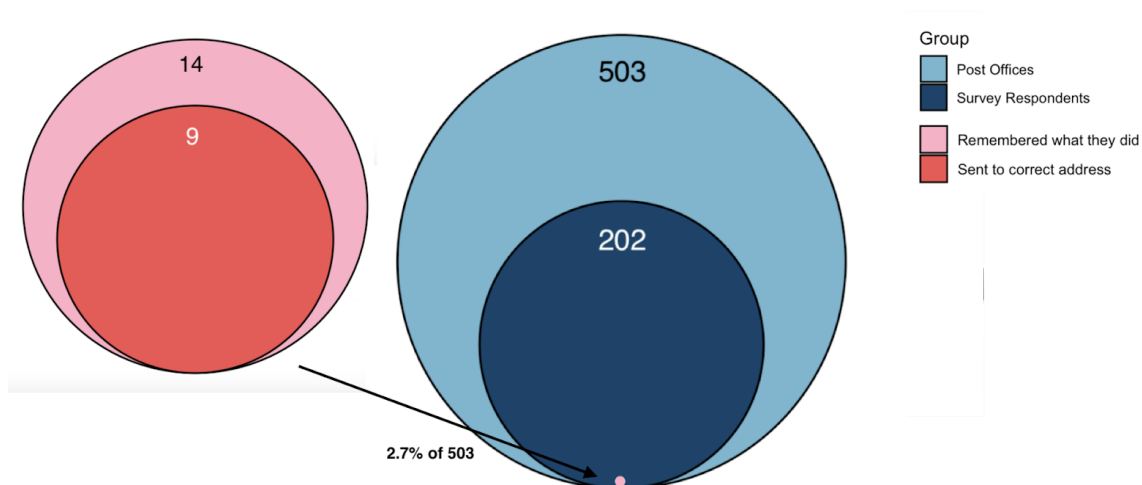
To uncover what happened to the Miss N Magazine issues, StatCon Enterprises conducted a telephone survey of carrier managers at the post offices that deliver the magazines, so the survey units are post offices. The managers were asked if they knew about the issue and what they did in response—delivered to the correct address, returned to the sender, or disposed of. If the manager did not remember, they were asked what they would have done in such a scenario. To avoid oversampling post offices with a small number of magazines, StatCon Enterprises generated a stratification of the list of postal zip codes. Based on the survey responses of what the postal managers did with the magazines, we proceed with the statistical analysis and derive an estimated proportion of how many magazines were delivered properly to the correct address.

Tables and Figures

Table 1: Response counts and proportions in StatCon Enterprises survey

Group	Total Respondents	Aware of issue	Remembered what they did with the mail	Delivered at least 95% of magazines to right address (re-sent mail)
Count	202	20	14	9
Percent 1	40% of sample size 503	9.9% of total respondents 202	70% of aware of mailing issue 20	64% of remembered what they did 14
Percent 2			6.9% of total respondents 202	4.5% of total respondents 202

Figure 1: Comparison of response proportions to StatCon Enterprises survey



Conclusion

Based on the few post offices that responded to the survey, we may observe just the units where managers were aware of the problem. Between Questions 1 and 2, we see that 182 out of 202 responding post office managers were not familiar with the problem, and about two thirds (70%) of the managers who were aware actually remembered what they did with the mail (Table 1). Although the responses to Question 4 reflect that around 86% of the managers hypothetically would have delivered the mail to the correct address, we see through analysis of both Questions 3 and 4 that the actual percentage of mail sent to the surveyed post offices and then received by the correct addresses is slightly smaller than this hypothetical 86%, at 64% (Table 1). We may conclude with 95% confidence that, even with the error in routing numbers, 94% of the magazines sent to the post offices were eventually delivered properly according to our respondent group.

Limitations

The biggest drawback of conducting a survey is always nonresponse bias. As seen in Table 1, there were responses from 202 post offices, but there are many more than 202 post offices nationwide. In missing the responses of many post offices that also certainly dealt with the problem of this study, we failed to account for much of the population, and our conclusion that 94% of the magazines sent to the post offices were delivered properly likely holds a large degree of error. The survey received useful responses (post offices that were aware of the issue and knew what they had done with their mail) from only 2.7% of post offices, seen in Figure 1 and Table 1, which is an even smaller portion of post offices across the United States. Even in consideration of the stratification method, which served to strengthen the survey, the survey's allowed standard error of 2.5 to 5% within the context of the tens of thousands of post offices can amount to a considerable number of units left out. Additionally, since some of the survey asked about hypothetical cases, we cannot entirely rely on the responses as factual and draw strong conclusions on the proportion of magazines that were delivered properly.

Recommendations

A potential next step would be to create and conduct a survey with the same goal but with more informative questions. The most productive option, however, would be for Miss N Magazine to survey the customers themselves and have the recipients of the magazines share their experience of the issue or the lack thereof. If there is room within the budget of Miss N Magazine, customers may be rewarded for their participation with discounts, coupons, or free copies. This would yield more comprehensive and thorough data which may directly lead to stronger conclusions for the company to proceed with.