

## **Adding Coupons as Another Benefit that Cell Phones Offer**

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## **ABSTRACT**

A group of four students at the University of Wisconsin – La Crosse (UW-L) was asked to conduct a research study for Dr. Jon Fields in cooperation with Dr. Laurie Stangman's BUS 230 class curriculum. The research was to pertain to the use of cell phones to make retail purchases. More specifically, would students at UW-L be interested in using their cell phones to receive coupons to various businesses. It was thought that students would use coupons more often if they had them with them at all times. It was also thought that students carry their cell phones with them everywhere they go. Combining these two aspects of a student's life may increase the coupon redemption rate and decrease the amount of money student's need to spend at certain establishments.

Select Survey was used to prepare an internet survey. Select Survey is a website that is sponsored and maintained by UW-L. The researchers sent out an e-mail to 1,000 UW-L students containing the statement of informed consent and a link to the survey itself. In two weeks, 202 people responded and the researchers edited and coded the data in Excel and then imported the file to SPSS for testing.

When the researchers tested the hypotheses that were associated with each research question, they had to reject three out of four hypotheses. Less than 70 percent of students would use the coupon technology, less than 50 percent of students would download the coupons by physically hooking up to a computer and less than 35 percent of students were willing to pay \$5 or more per

month for the coupon technology. The only hypothesis that was accepted was that 50 percent of UW-L students were willing to download the coupons from a nearby tower by pushing a button on his or her cell phone.

As it turns out, less people than expected were interested in the ability to download and use coupons on cell phones. It cannot be concluded that the technology should not be implemented because the sample was so small, but when speaking of this sample, people generally did not like the idea. People especially did not want to pay for the technology.

## INTRODUCTION

Businesses send out billions of coupons each year, but less than two percent of these coupons are redeemed (Park, ii). This research project investigated a way for businesses to distribute coupons in a way that would promote their product in a more effective manner. Specifically, this research targeted college students because advertisers experience difficulties reaching students using conventional methods.

The broad research problem was would University of Wisconsin-La Crosse (UW-L) undergraduate students be interested in using their cell phones in a manner that would save them money when making common retail purchases. The basic idea was that they would download coupons onto their cell phones so they have them wherever they go. This issue was important because it was a new idea that makes use of the advances and capabilities of technology to save people time and money and capitalizes on current consumer behaviors. Since about ninety-six percent of college students have cell phones, in adding a feature in which students can download coupons, businesses will have more access to the college student market. College students have already shown to be a receptive audience in receiving ads on their cell phones as advertisers are increasingly reaching them in this way (Ransford, 2007).

The first research question addressed was would UW-L students *use* coupons on their cell phones if they were available? The research hypothesis (Hypothesis Number One) associated with this research question was that 70

percent of UW-L students would use coupons on their cell phones if they were available. This can be attributed to the fact that a large number of college students have cell phones and having the coupons on their phones would be convenient. The second research question was would UW-L students be *willing to download* the coupons onto their cell phones? The first hypothesis associated to the second research question (Hypothesis Number Two) was that 50 percent of the respondents would perform the download of coupons by hooking up their cell phones to a computer. The second hypothesis associated to the second research question (Hypothesis Number Three) was that 50 percent of the respondents would perform a download through a tower that would send the cell phone users the coupons through common cell phone frequencies. Both of these hypotheses would save time by having coupons on their phones instead of clipping them out of newspapers. The third research question was would UW-L students be *willing to pay a fee* to download the coupons onto their cell phones? The associated hypothesis (Hypothesis Number Four) was that 35 percent would pay a fee of \$5 or less a month for downloading coupons onto their cell phones because students do not have a lot of money to spend.

The hypotheses were tested using a one-sample t-test. The result for the first hypothesis was that the proportion of UW-L students that would use coupons on their cell phones if they were available was not equal to 70 percent. A confidence interval was used to determine that the true population mean would fall between .34 and .51. The result for the second hypothesis was that the proportion of UW-L students that would perform the download of coupons by

hooking up their cell phones to a computer was not equal to 50 percent. A confidence interval was used to determine that the true population mean would fall between .28 and .44. The result for the third hypothesis was that the proportion of UW-L students that would perform a download through a tower was equal to 50 percent. The result for the last hypothesis was that the proportion of UW-L students that would pay a fee of \$5 or less a month for downloading coupons onto their cell phones was not equal to 35 percent. A confidence interval was used to determine that the true population mean would fall between .16 and .28.

Manufacturers and retailers use coupons to promote their goods and services. However, since the early 1990's, coupon redemption rates have been on the decline. In 2002, approximately 248 billion coupons were distributed, valuing nearly \$220 billion. Of those, consumers only redeemed about 3.8 billion. Busy lifestyles contribute to the fact that many people do not consider "clipping" coupons worth their effort (Park, ii).

On the other hand, internet coupon redemption rates rose from .54 percent in 2005 to 1.31 percent in 2006 (Holland). These low figures can be attributed to the fact that searching for online coupons seems to take too much time to find and use (Park, ii). Therefore, providing an easier, more convenient way for consumers to receive coupons could be even more popular.

This feature could be popular among students at UW-L. Providing UW-L students with the opportunity would be feasible considering the fact that nearly seventy percent of students (as found in the study done by Ball State) have

Internet access on their cell phones (Ransford, 1). This would be essential for performing a download to receive the coupons.

Quite similar to the possibility of distributing coupons through cell phones is that some night clubs are currently using cell phones to send VIP guests an entry pass in the form of a barcode which they then use to check their identity for entrance into the club ("A Cash Call"). This demonstrates the various capabilities of cell phones and that redeeming coupons through one's cell phone is feasible.

Likewise, another technological advance in cell phone features is that smart cards and cell phones are rising as ways to pay with electronic cash. In other countries like Australia and Japan, cell phones can be used to make many different payments, such as buying groceries and paying bills. Worldwide, these payments are estimated to rise from \$3.2 billion in 2003 to more than \$37 billion by 2008. In fact, the average American consumer was two times as likely to carry his cell phone around as he was to carry cash; this increases to four times as likely for the age group 18-34 ("A Cash Call"). This demonstrates that consolidating the amount of things that consumers carry around is increasing in popularity; therefore having coupons downloaded onto cell phones follows this practice.

This research study will be targeted towards a random sample of 1,000 students at the University of Wisconsin – La Crosse. The method of investigation to reach this population will be through the use of an internet survey, in which a link to the survey will be sent in an email to the subjects. The internet survey that will be employed will be UW-L's Select Survey which will then deposit the data

into a database. Some key variables which were investigated were gender, on campus versus off campus residence and the prevalence of internet use through students' cell phones.

## METHODS

The target population for this research project was students at the University of Wisconsin – La Crosse (UW-L). The sample frame was a simple random sample of 1,000 students.

The data was collected using Select Survey, an internet survey provided by the University of Wisconsin – La Crosse. Each of the four researchers sent out 250 e-mails to his or her portion of the sample frame, including the statement of informed consent and a link to the survey itself. An internet survey was chosen as the method of data collection because the researchers felt that it would be the most efficient way to reach all 1,000 students and the easiest way to analyze the responses. Internet surveys are also very easy for respondents to use and this fact would aid in getting higher response rates. As an incentive for respondents to complete the survey, five \$10 pizza certificates for Little Caesar's Pizza were awarded to five random respondents.

After two weeks, the survey received 202 responses. The researchers were aiming for about 50 responses per person, or 200 responses. Select Survey records the responses in an Excel file. The survey was opened in an Excel file and responses edited for consistency and completeness. When the responses made sense, the variables were coded using the "Find and Replace" command. After double-checking the code values, the Excel file was then brought into SPSS for further investigation.

The statistical test that was used for all variables was the one sample t-test of proportions because the variables involved were nominal scale variables

that were recoded into two response categories. This test gave the researchers more information about the variables than a simple chi-square test would have given. The following is a table showing the four variables of interest and the recoded values that were used to conduct the tests.

### Variables

<b>Variable Name and Measurement Scale</b>	<b>Definition</b>	<b>Code Values</b>
<i>download</i> Ordinal	If coupons were available on respondent's cell phone, would respondent use them?	0= Definitely Yes 1= Probably Yes 2= Don't Know 3= Probably Not 4= Definitely Not 8= Not Applicable 9= No Answer
<i>download_rcd</i> Nominal	If coupons were available on respondent's cell phone, would respondent use them? (recoded)	0= No 1= Yes 2= Don't Know 8= Not Applicable 9= No Answer
<i>computer</i> Nominal	Is the respondent willing to hook their cell phone up to a computer to complete the download?	0= No 1= Yes 3= Don't Know 8= Not Applicable 9= No Answer
<i>computer_rcd</i> Nominal	Is respondent willing to hook cell phone up to a computer? (recoded)	0= No 1= Yes 3= Don't Know 8= Not Applicable 9= No Answer
<i>tower</i> Nominal	Is the respondent willing to press a button on their cell phone to download from a nearby tower?	0= No 1= Yes 3= Don't Know 8= Not Applicable 9= No Answer
<i>tower_rcd</i> Nominal	Is respondent willing to download from a tower? (recoded)	0= No 1= Yes 3= Don't Know 8= Not Applicable 9= No Answer
<i>pay</i> Ordinal	How much is respondent willing to pay per month for the coupon technology?	1= Would Not Pay 2= Less Than \$1/ month 3= \$1-\$2.99/ month 4= \$3-\$5/ month 8= Not Applicable 9= No Answer
<i>pay_rcd</i> Nominal	Is respondent willing to pay less than \$5 per month for the coupon technology? (recoded)	0= No 1= Yes 8= Not Applicable 9= No Answer

There are specific reasons why these four variables were measured. Each of the variables relates to a specific research question directly. The first research question of this study was whether or not UW-L students would *use* coupons on his or her cell phone if the technology were available. The variable *download* relates directly to this question. The question asked for this variable was “If coupons were available on your cell phone, would you use them?” As shown in the **Variables** table above, the response options ranged from “Definitely Yes” to “Definitely Not”. To perform a one-sample t-test on this variable, which was not an interval or ratio scale variable, it was recoded into a simple “Yes” or “No” question in order to perform a one-sample t-test of proportions. The values of the recoded variable are shown in the **Variables** table.

The second research question was whether or not UW-L students would be *willing to download* the coupons onto their cell phones. There were two variables used to measure this question. The first variable was *computer*. The question asked for this variable was “Would you be willing to physically hook your cell phone up to a computer to complete the coupon download?” The second variable was *tower*. The question asked for this variable was “Would you be willing to push a button on your phone to download the coupons from a nearby tower?” When doing the one-sample t-tests of proportions on these two variables, both variables needed to be recoded. For both variables, the code value for each response type remained the same, but the value of “3” for the “Don’t Know” category was changed to a missing value. The values for both recoded variables can be found in the **Variables** table.

The last research question was whether or not UW-L students would be *willing to pay a fee* to download the coupons onto their cell phones. The variable that directly relates to this question was *pay*. The question asked for this variable was “How much are you willing to pay per month for the coupon technology?” Again, the researchers wanted to conduct a one-sample t-test so the variable needed to be recoded into a simple “Yes” or “No” response. In order to do that, the hypothesis associated with this research question needed to look at. The hypothesis dealt with the percent of people who would pay \$5 or less a month for the technology. Therefore, when recoded, code values “2” through “4” were recoded into a response of “Yes” and the code value “1” was recoded into a response of “No.” The final code values for the recoded *pay* variable can be found in the **Variables** table.

The researchers collected data on a couple more variables in the survey. Some of the variables were solely for classification purposes and some of them served as filtering questions. Some were used to lead the respondent into the more difficult questions so he or she wouldn’t get confused with the later questions, seeing as this research is something completely new. A complete list of variables collected from the survey appears in Appendix B.

During the course of this research, there were a few limitations that were discovered. First of all, more females than males responded. This could skew the results one way, depending on the feelings of the different sexes. The researchers originally thought that females might want the coupon technology more because females are more likely to use coupons as opposed to males in

the sample, as shown in Appendix J, but there was no conclusive evidence on this topic due to the fact that a cross-tabulation is only a descriptive statistic and cannot be applied to the population as a whole. Also, all of the survey questions were made into nominal and ordinal variables. This fact limited the kinds of descriptive statistics and tests that could be run. The researchers were limited to only the univariate chi-square test and the one-sample t-test for proportions. The last limitation was the number of responses. If the researchers were able to collect a have a larger sample frame or collect a larger sample, the results may have been different and would have been more accurate. That just wasn't able to be done in the amount of time given for data collection.

Overall, the research was done in a very efficient manner. The researchers encountered a small amount of difficulty when trying to transfer the Excel file into SPSS but that was all sorted out and the data transferred correctly.

## RESULTS

Of the 1,000 students surveyed, 202 responded, making the overall response rate 20.2 percent. From these respondents it could be decided whether or not students would be interested in having coupons on their cell phones to make retail purchases.

### *Hypothesis Number One*

The first hypothesis was that 70 percent of students at the University of Wisconsin – La Crosse would use coupons on their cell phone if they were available.

**Figure 1: If coupons were available on respondent's cell phone, would respondent use them recorded**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	79	39.1	57.2	57.2
	Yes	59	29.2	42.8	100.0
	Total	138	68.3	100.0	
Missing	DK	50	24.8		
	NAP	11	5.4		
	NA	3	1.5		
	Total	64	31.7		
Total		202	100.0		

A one-sample t-test was used, as shown in Appendix C, and the conclusion was to reject the null hypothesis. This means that the proportion of students that would use the coupons is not equal to 70 percent.

### *Hypothesis Number Two*

The second hypothesis was that 50 percent of students at the University of Wisconsin – La Crosse would be willing to perform a download by connecting to a computer in order to receive the coupons.

**Figure 2: Is respondent willing to hook cell phone up to a computer recoded**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	90	44.6	64.3	64.3
	Yes	50	24.8	35.7	100.0
	Total	140	69.3	100.0	
Missing	DK	48	23.8		
	NAP	11	5.4		
	NA	3	1.5		
	Total	62	30.7		
Total		202	100.0		

A one-sample t-test was used, as shown in Appendix D, and the conclusion was to reject the null hypothesis. This means that the proportion of students that would perform a download straight from a computer is not equal to 50 percent.

### *Hypothesis Number Three*

The third hypothesis was similar to the second, but tested whether students would perform the download from a tower. Specifically, it was hypothesized that 50 percent of students at the University of Wisconsin – La Crosse would be willing to perform a download by means of a tower in order to receive the coupons.

**Figure 3: Is respondent willing to download from a tower recoded**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	63	31.2	45.0	45.0
	Yes	77	38.1	55.0	100.0
	Total	140	69.3	100.0	
Missing	DK	48	23.8		
	NAP	11	5.4		
	NA	3	1.5		
	Total	62	30.7		
Total		202	100.0		

Again, a one-sample t-test was used, as shown in Appendix E. The null hypothesis was accepted. This means that the proportion of students that would perform a download from a nearby tower is equal to 50 percent.

*Hypothesis Number Four*

The last hypothesis was that 35 percent of students at the University of Wisconsin – La Crosse would pay a fee of \$5 or less a month to receive the coupons.

**Figure 4: Is respondent willing to pay for the coupon technology**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	147	72.8	78.2	78.2
	Yes	41	20.3	21.8	100.0
	Total	188	93.1	100.0	
Missing	NAP	11	5.4		
	NA	3	1.5		
	Total	14	6.9		
Total		202	100.0		

A one-sample t-test was used, as shown in Appendix F, and the conclusion was to reject the null hypothesis. This means that the proportion of students willing to pay for performing the download was not equal to 35 percent.

## DISCUSSION

Overall, the hypotheses were overstated. Fewer students than expected were interested in having coupons available on their phones. The idea of having a money-saving coupon on cell phones was thought to be an attention grabber. The idea was meant to be another resource on cell phones.

Regarding the first hypothesis, the percentage of students that would use the coupon technology if it was available was lower than expected. The 95 percent confidence interval, as found in Appendix G, shows that the true population mean lies between .312 and .51. One reason for this might be that students, as shown in the table below, do not use many coupons in general. According to Figure 5, 79.1 percent of respondents either do not use coupons at all, or they use only one per month. This explains why fewer respondents than expected would use the coupon technology if it were available.

**Figure 5: How often does respondent use coupons per month**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	71	35.1	35.3	35.3
	Once a month	88	43.6	43.8	79.1
	2-3 times a month	28	13.9	13.9	93.0
	4 or more times a month	14	6.9	7.0	100.0
	Total	201	99.5	100.0	
Missing	NA	1	.5		
Total		202	100.0		

Concerning the second hypothesis, the percentage was, again, lower than expected. The 95 percent confidence interval, found in Appendix H, for this hypothesis lies between .28 and .44. One reason for this could be that students do not have the time to sit down and wait for a download to take place.

Since the third hypothesis, which is similar to the prior hypothesis, was accepted, it can be concluded that students would be more willing to download coupons from a tower than through a computer. One reason for this could be that this method is easier than downloading straight from a computer and the student would not have to sit down and wait for the download.

Lastly, the percentage of students that would be willing to pay for the coupon technology was lower than expected. The 95 percent confidence interval, shown in Appendix I, illustrates that the true population mean falls between .16 and .28. One reason for this might be that students do not have the money to pay for a download. Some students may also think that the cost of a download will be more than would be saved using the coupons.

Although the percentages that were predicted in the hypotheses were not correct, the relationship among them was correct. Progressing from the first hypothesis to the fourth, the percentages were predicted to decrease. The confidence intervals for the hypotheses show that this relationship is correct. As the amount of effort and the cost increases, students' willingness to use the technology decreases.

One limitation in the study was the number of respondents. More time was needed to send out a second round of emails in order to get more respondents. Another limitation was that the data limited the type of statistical test that could be used to either a one-sample t-test or a chi-square test.

## **CONCLUSION AND RECOMMENDATIONS**

This study found that college students use very few, if any, coupons. For this reason, fewer students than expected said that they would use coupons on their cell phone if they were available, fewer than expected would be willing to perform the download, and fewer would pay a fee of \$5 or less for the technology.

The college student market, because of its size and financial situation, could be a prime target for the coupon technology if interest in coupons were generated. In order for the coupon technology to be successful in this market, it must be available to students at no (or very little) cost. It would also be most successful if it were available in a manner in which little effort is needed to attain the coupons. Therefore, downloading coupons from a tower is preferable to using a computer to perform the download.

Limitations encountered in this study include the number of responses, the disproportionate number of respondents of each gender, and the statistical tests being limited due to the types of questions asked. Future studies could take more time to collect data in order to get more responses, which would also help with the gender issues of respondents. Also, future studies could reword the questions in order to produce more in-depth data that more statistical tests could be performed on.

To expand on this study, future studies could be conducted at larger universities, where more responses could be achieved and where the cost of living is higher, thus the use of coupons may be more prevalent. Or, they could be directed to a target market of the greatest users of coupons.

The one remaining question regarding coupon technology on cell phones is whether or not its implementation would be profitable among college students. Even though it may not be as well-received among students, other markets may be more interested in it.

## Appendices

### APPENDIX A: SURVEY INSTRUMENT

#### Statement of Informed Consent

*Purpose:*

We are conducting research for our Business 230 class. This survey will help us collect information on the use of coupons to make retail purchases. The data we are collecting could eventually help you save money and time by downloading coupons onto your cell phones. This survey is completely confidential and **completely voluntary**. You are not required to take it, and you may stop taking the survey at any time if you so choose. We will use your answer solely for the purpose of this research. There are no known risks to taking this survey. We would greatly appreciate it if you would take just a couple of minutes to take this brief survey.

*Contact Information:*

Student: Melissa Sherman  
[sherman.meli@students.uwlax.edu](mailto:sherman.meli@students.uwlax.edu)

Professor: Dr. Laurie Strangman  
[strangma.laur@uwlax.edu](mailto:strangma.laur@uwlax.edu)  
785-6865 (office)

**\*\*By taking this survey, you will have the chance to win one of four \$10 pizza gift certificates. However, you must respond to the survey before Friday, April 6 to be entered into the drawing.**

#### One Minute Money Saving Survey

1. Do you have a cell phone?  
Yes  
No  
*\*If yes, continue to number 2; if no, go to number 3*
  
2. Do you have internet access on your cell phone?  
Yes  
No  
I don't know.

3. Do you use coupons for retail purchases?
  - Never
  - Once a month
  - 2-3 times a month
  - 4 or more times a month
  - \*If you answered yes to number 1, continue to number 4; if you answered no to number 1, to go number 9*
4. Suppose coupons could be downloaded onto your cell phone; would you use them to make retail purchases?
  - Definitely Yes
  - Probably Yes
  - Don't Know
  - Probably Not
  - Definitely Not
5. Would you be willing to perform a download process in order to receive money-saving coupons on your cell phone?
  - Yes
  - No
  - I don't know.
6. Would you be willing to push a button on your cell phone to download coupons onto your cell phone from a nearby tower?
  - Yes
  - No
  - I don't know.
7. What would discourage you the *most* from performing the download?
8. What is the most you would be willing to pay to download the coupons?
  - \$0
  - Less than \$1 per month
  - \$1-\$2.99 per month
  - \$3-\$5 per month
  - Over \$5 per month
9. Gender: (choose one)
  - Male
  - Female
10. Do you live on-campus or off-campus? (choose one)
  - On-campus
  - Off-campus
11. Class rank?

Freshman  
Sophomore  
Junior  
Senior

12. Please enter your email address if you wish to be entered into the drawing for the pizza certificates.

## APPENDIX B: CODE BOOK

Variable Name and Measurement Scale	Definition	Code Values
<i>phone</i> Nominal	Does respondent have a cell phone?	0= No 1= Yes 9= No Answer
<i>internet</i> Nominal	Does respondent have internet access on their cell phone?	0= No 1= Yes 3= Don't Know 8= Not Applicable 9= No Answer
<i>coupons</i> Ordinal	How many times per month does the respondent use coupons?	0= Never 1= Once a Month 2= 2-3 Times a Month 3= 4 or More Times a Month 9= No Answer
<i>download</i> Ordinal	If coupons were available on respondent's cell phone, would respondent use them?	0= Definitely Yes 1= Probably Yes 2= Don't Know 3= Probably Not 4= Definitely Not 8= Not Applicable 9= No Answer
<i>computer</i> Nominal	Is the respondent willing to hook their cell phone up to a computer to complete the download?	0= No 1= Yes 3= Don't Know 8= Not Applicable 9= No Answer
<i>tower</i> Nominal	Is the respondent willing to press a button on their cell phone to download from a nearby tower?	0= No 1= Yes 3= Don't Know 8= Not Applicable 9= No Answer

<b>Variable Name and Measurement Scale</b>	<b>Definition</b>	<b>Code Values</b>
<i>discourage</i> Nominal	What would discourage the respondent from performing the download?	1= Cost 2= Time 3= Mess Up Phone/ Spam 4= Would Not Use 5= Other 7= Don't Know 8= Not Applicable 9= No Answer
<i>pay</i> Ordinal	How much is respondent willing to pay per month for the coupon technology?	1= Would Not Pay 2= Less Than \$1/ month 3= \$1-\$2.99/ month 4= \$3-\$5/ month 8= Not Applicable 9= No Answer
<i>gender</i> Nominal	What is the respondent's gender?	1= Female 2= Male 9= No Answer
<i>live</i> Nominal	Does the respondent live on-campus or off-campus?	1= Off-campus 2= On-Campus 9= No Answer
<i>rank</i> Ordinal	What is the respondent's class rank?	1= Freshman 2= Sophomore 3= Junior 4= Senior 9= No Answer
<i>download_rcd</i> Nominal	If coupons were available on respondent's cell phone, would respondent use them? (recoded)	0= No 1= Yes 2= Don't Know 8= Not Applicable 9= No Answer
<i>computer_rcd</i> Nominal	Is respondent willing to hook cell phone up to a computer? (recoded)	0= No 1= Yes 3= Don't Know 8= Not Applicable 9= No Answer

**Variable Name and  
Measurement Scale**

**Definition**

**Code Values**

*tower\_rcd*  
Nominal

Is respondent willing  
to download from a  
tower? (recoded)

0= No  
1= Yes  
3= Don't Know  
8= Not Applicable  
9= No Answer

*pay\_rcd*  
Nominal

Is respondent willing  
to pay for the coupon  
technology? (recoded)

0= No  
1= Yes  
8= Not Applicable  
9= No Answer

## APPENDIX C

### ONE-SAMPLE T-TEST TO TEST FOR THE PROPORTION OF RESPONDENTS THAT WOULD USE COUPONS IF THEY WERE AVAILABLE ON THEIR CELL PHONES

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
If coupons were available on respondent's cell phone, would respondent use them recoded	138	.43	.497	.042

One-Sample Test

	Test Value = .7					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
If coupons were available on respondent's cell phone, would respondent use them recoded	-6.446	137	.000	-.272	-.36	-.19

$$H_0: \pi = .7$$

$$H_a: \pi \neq .7$$

Results:  $p = .000 < .05 = \alpha \rightarrow$  reject the null hypothesis

## APPENDIX D

### ONE-SAMPLE T-TEST TO TEST FOR THE PROPORTION OF RESPONDENTS THAT WOULD BE WILLING TO PERFORM A DOWNLOAD STRAIGHT FROM A COMPUTER IN ORDER TO GET COUPONS ON THEIR CELL PHONES

#### One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Is respondent willing to hook cell phone up to a computer recoded	140	.36	.481	.041

#### One-Sample Test

	Test Value = .5					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Is respondent willing to hook cell phone up to a computer recoded	-3.515	139	.001	-.143	-.22	-.06

$$H_0: \pi = .5$$

$$H_a: \pi \neq .5$$

Results:  $p = .001 < .05 = \alpha \rightarrow$  reject the null hypothesis

## APPENDIX E

### ONE-SAMPLE T-TEST TO TEST FOR THE PROPORTION OF RESPONDENTS THAT WOULD BE WILLING TO PERFORM A DOWNLOAD FROM A TOWER IN ORDER TO GET COUPONS ON THEIR CELL PHONES

Tower

#### One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Is respondent willing to download from a tower recoded	140	.55	.499	.042

#### One-Sample Test

	Test Value = .5					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Is respondent willing to download from a tower recoded	1.185	139	.238	.050	-.03	.13

$$H_0: \pi = .5$$

$$H_a: \pi \neq .5$$

Results:  $p = .238 > .05 = \alpha \rightarrow$  accept the null hypothesis

## APPENDIX F

### ONE-SAMPLE T-TEST TO TEST FOR THE PROPORTION OF RESPONDENTS THAT WOULD BE WILLING TO PAY FOR THE COUPON TECHNOLOGY

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Is respondent willing to pay for the coupon technology	188	.22	.414	.030

One-Sample Test

	Test Value = .35					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Is respondent willing to pay for the coupon technology	-4.368	187	.000	-.132	-.19	-.07

$$H_0: \pi = .35$$

$$H_a: \pi \neq .35$$

Results:  $p = .000 < .05 = \alpha \rightarrow$  reject the null hypothesis

## APPENDIX G

### CONFIDENCE INTERVAL FOR THE PROPORTION OF RESPONDENTS THAT WOULD USE COUPONS IF THEY WERE AVAILABLE ON THEIR CELL PHONES

#### Descriptives

			Statistic	Std. Error
If coupons were available on respondent's cell phone, would respondent use them recoded	Mean		.43	.042
	95% Confidence Interval for Mean	Lower Bound	.34	
		Upper Bound	.51	
	5% Trimmed Mean		.42	
	Median		.00	
	Variance		.247	
	Std. Deviation		.497	
	Minimum		0	
	Maximum		1	
	Range		1	
	Interquartile Range		1	
	Skewness		.296	.206
	Kurtosis		-1.941	.410

The 95% confidence interval shows that the true population mean falls between .34 and .51.

## APPENDIX H

### CONFIDENCE INTERVAL FOR THE PROPORTION OF RESPONDENTS THAT WOULD BE WILLING TO PERFORM A DOWNLOAD STRAIGHT FROM A COMPUTER IN ORDER TO GET COUPONS ON THEIR CELL PHONES

#### Descriptives

			Statistic	Std. Error
Is respondent willing to hook cell phone up to a computer recoded	Mean		.36	.041
	95% Confidence Interval for Mean	Lower Bound	.28	
		Upper Bound	.44	
	5% Trimmed Mean		.34	
	Median		.00	
	Variance		.231	
	Std. Deviation		.481	
	Minimum		0	
	Maximum		1	
	Range		1	
	Interquartile Range		1	
	Skewness		.603	.205
	Kurtosis		-1.661	.407

The 95% confidence interval shows that the true population mean falls between .28 and .44.

## APPENDIX I

### CONFIDENCE INTERVAL FOR THE PROPORTION OF RESPONDENTS THAT WOULD BE WILLING TO PAY FOR THE COUPON TECHNOLOGY

#### Descriptives

			Statistic	Std. Error
Is respondent willing to pay for the coupon technology recoded	Mean		.22	.030
	95% Confidence Interval for Mean	Lower Bound	.16	
		Upper Bound	.28	
	5% Trimmed Mean		.19	
	Median		.00	
	Variance		.171	
	Std. Deviation		.414	
	Minimum		0	
	Maximum		1	
	Range		1	
	Interquartile Range		0	
	Skewness		1.376	.177
	Kurtosis		-.107	.353

The 95% confidence interval shows that the true population mean falls between .16 and .28.

## APPENDIX J

### CROSS-TABULATION TABLE COMPARING GENDER AND COUPON USE

What is the respondent's gender \* How often does respondent use coupons per month cross-tabulation

Count

		How often does respondent use coupons per month				Total
		Never	Once a month	2-3 times a month	4 or more times a month	
What is the respondent's gender	female	39	60	22	11	132
	male	31	27	6	3	67
Total		70	87	28	14	199

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