CAIP

CERTIFIED ANALYTICS AND INSIGHTS PROFESSIONALS OF CANADA

CAIP Canada
Exam Prep Seminar:
Analytics & Insight
Practice Questions Feedback

ROBERT A. G. WONG, CAIP, FCRIC

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Analytics and Insights

- NOT a statistical exam but how analytics and insights utilizes statistics

- Moving from data, analysis to insights

- Understanding when to use different analytical techniques

- Understand how to interpret statistical results

- Building insights

Practice Question 1: Food For Thought

- East Vancouver local parent volunteers have operated a food breakfast program at four elementary schools. Children can visit the school up to one hour before the start of school to receive a complementary nutritious breakfast served by fellow students and parent volunteers. Approximately 300 children attend the program. The Parent Group wishes to better evaluate where the program is reaching the "at risk" children.

- ResearchMe Inc, is helping the parent group and prepared a self-administered paper questionnaire sent home with children. They have received 430 responses. Here are some results:

		Breakfast Program Participation		
		Regular Use Count Col%/Row%	Occasional Use Count Col%/Row%	Does Not Use Count Col%/Row%	Total Counts
Perception of income	Not enough for necessities	110 42%/65%	32 21%/20%	25 41%/15%	**167**
	Just enough for necessities	88 33%/54%	59 37%/36%	15 25%/10%	**162**
	Enough for necessities and a bit more	66 25%/44%	65 42%/43%	20 33%/13%	**151**
	Totals	**264**	**156**	**60**	**450**

- What type of analysis is this? What conclusions would you draw? What inferential statistical test would you suggest and what would be your alternative hypothesis?

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Answer

1. This is a cross-tabulation table comparing perception of income and food for thought participation by their child

2. It appears that the more challenged financially the more likely the child will participate in the F4T. However, there appears to be a disconnect with 15% of the most financially challenged Did NOT participate.

3. The Chi-squared test and the H1 would be: there is a difference in participation in F4T by families with different financial situation. The Null hypothesis is there are no differences!

Answer only the questions asked. Understand what an inferential statistical test is and what it means in the context of the case.

- You are the director of research for a successful niche travel insurance company called Nofear. Nofear provides travel insurance to adventure travelers and is considering offering a credit card. Qualitative research has suggested that its customers are so attached to the Nofear brand that they'd switch cards in a minute if Nofear offered a card that had the features they wanted. The key features of the card being considered are as follows:

  - Annual Fee: No fee, $50, $100

  - Rewards: None, 1% cash back, 2% cash back

  - Car Rental Insurance: No, Yes with $100 deductible, Yes with no deductible

  - Interest rate: prime plus 2, prime plus 4, prime plus 8

- **Q1. The VP of marketing has suggested you conduct a survey of customers that asks customers what feature they would want in each category. Would such a survey work?**

- **Q2. What multivariate technique would be appropriate? Describe to your VP of marketing, who has no research experience, how this multivariate technique would work.**

Remember to Underline & Focus on Competency

Context → You are the director of research for a successful niche travel insurance company called Nofear. Nofear provides travel insurance to adventure travelers and is considering offering a credit card. Qualitative research has suggested that its customers are so attached to the Nofear brand that they'd switch cards in a minute if Nofear offered a card that had the features they wanted. The key features of the card being considered are as follows:

Issue →

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Questions → Q1. The VP of marketing has suggested you conduct a survey of customers that asks customers what feature they would want in each category. Would such a survey work?

Q2. What multivariate technique would be appropriate? Describe to your VP of marketing, who has no research experience, how this multivariate technique would work.

Answers

Q1. A quantitative survey design would determine the options that would best build loyalty and also which would not.

Q2. Conjoint analysis or trade off analysis would be recommended in this case. Customers would be shown a series of questions that asks them to choose between two potential card characteristics of the four features or indicate if neither appeal to them. The resulting analysis will determine the importance of each feature and help to identify the combination of features, if any, that would best meet the needs of Nofear and its customers.

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Practice Question 3: WheelsFast

- WheelsFast Bikes recently conducted a survey of serious cyclists in Canada who have purchased road bikes in the past 5 years. The study found a correlation of -.4 between the following two questions:

    - On a scale of 1 to 10 where 1 is very likely and 10 is not very likely, how likely are you to purchase a set of carbon wheels over the next 12 months?

    - How many kilometers would you cycle during an average week?

- Please comment on the questions and the correlation? What is the cause and what is the effect?
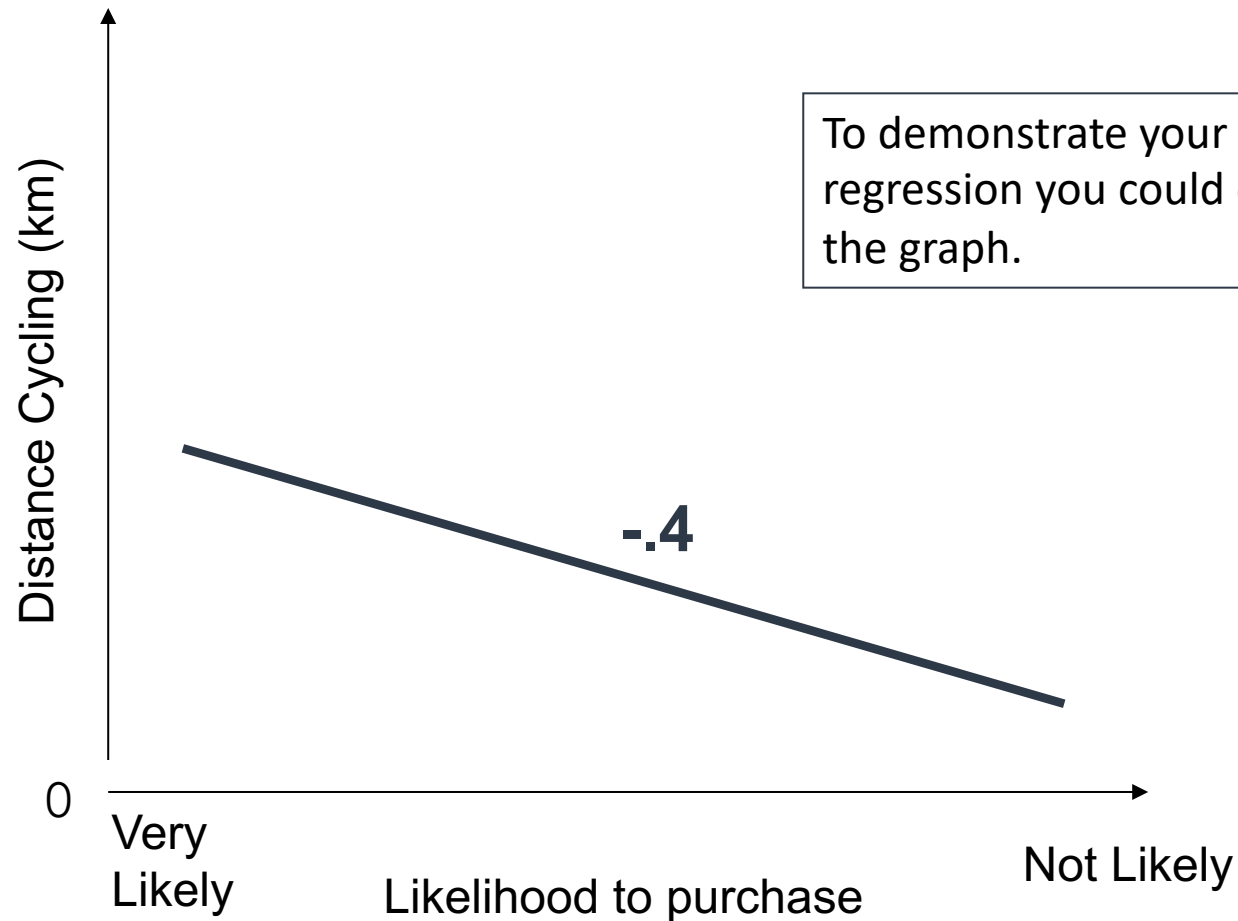
Practice Question 3: WheelsFast

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Context →

Results →

Method →

Question – stats & interpretation →

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  - On a scale of 1 to 10 where 1 is very likely and 10 is not very likely, how likely are you to purchase a set of carbon wheels over the next 12 months?

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- Please comment on the questions and the correlation? What is the cause and what is the effect?

Use a Graph to Illustrate the Concept

To demonstrate your understanding of regression you could offer a simple sketch of the graph.

Distance Cycling (km)

-.4

0

Very Likely

Not Likely

Likelihood to purchase

Practice Question 3: WheelsFast

Please comment on the questions and the correlation? What is the cause and what is the effect?

Answer

- Study asked questions using a numerical rating scale and a ratio scaled question and a regression analysis was conducted between two questions: likelihood to purchase carbon wheels & distance cycling per average week.

- The negative correlation actually indicates a low to moderate positive relationship between distance cycling and likelihood to purchase. That is to say, the more distance one rides they are somewhat likely to purchase a set of carbon wheels.

- The value of .4 is a low to moderate correlation. However, because the numerical rating scale has reversed anchor points (e.g. 1 very likely & 10 never) for the likelihood to purchase question we have a negative correlation. I would recommend developing directional consistency for all of the scales (e.g. low to high, negative to positive).

Remember to answer all the points in the question: correlation, cause & effect & question design.

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- You are the manager of Insights for TouchMe, a technology hardware manufacturer and retailer. One of your primary research suppliers, Asana Research, has just finished the fieldwork on a quantitative study that it is completing on your behalf. The purpose of the study was to assess customer satisfaction with your new premium tablet called the ZZZ Touch. A representative sample of 500 customers completed the survey which asked them to rate their overall satisfaction with the ZZZ Touch. The survey also asked them to rate both the importance of and their satisfaction with several attributes related to their purchase. In advance of the full report, Asana Research has provided you with the top line results as shown below.

- **List three of the key findings of the research based on the topline results shown above?**

- **What additional analysis, if any, would you ask Asana Research to provide and why?**

- **What additional research do you recommend and why?**

Practice Question 4: TouchMe Tablet

Context →

Issue →

Methodology →

- You are the manager of Insights for TouchMe, a technology hardware manufacturer and retailer. One of your primary research suppliers, Asana Research, has just finished the fieldwork on a <u>quantitative study</u> that it is completing on your behalf. The purpose of the study was to assess <u>customer satisfaction with your new premium tablet called the ZZZ Touch.</u> A representative sample of <u>500 customers</u> completed <u>mobile</u> survey which asked them to rate their overall satisfaction with the ZZZ Touch. The questionnaire also asked them to rate both the <u>importance</u> of and their <u>satisfaction</u> with several attributes related to their purchase. In advance of the full report, Asana Research has provided you with the <u>top line results</u> as shown below.

Questions →

- **List <u>three</u> of the key findings of the research based on the topline results shown above?**

- **What <u>additional analysis</u>, if any, would you ask Asana Research to provide and why?**

- **What <u>additional research</u> do you recommend and why?**

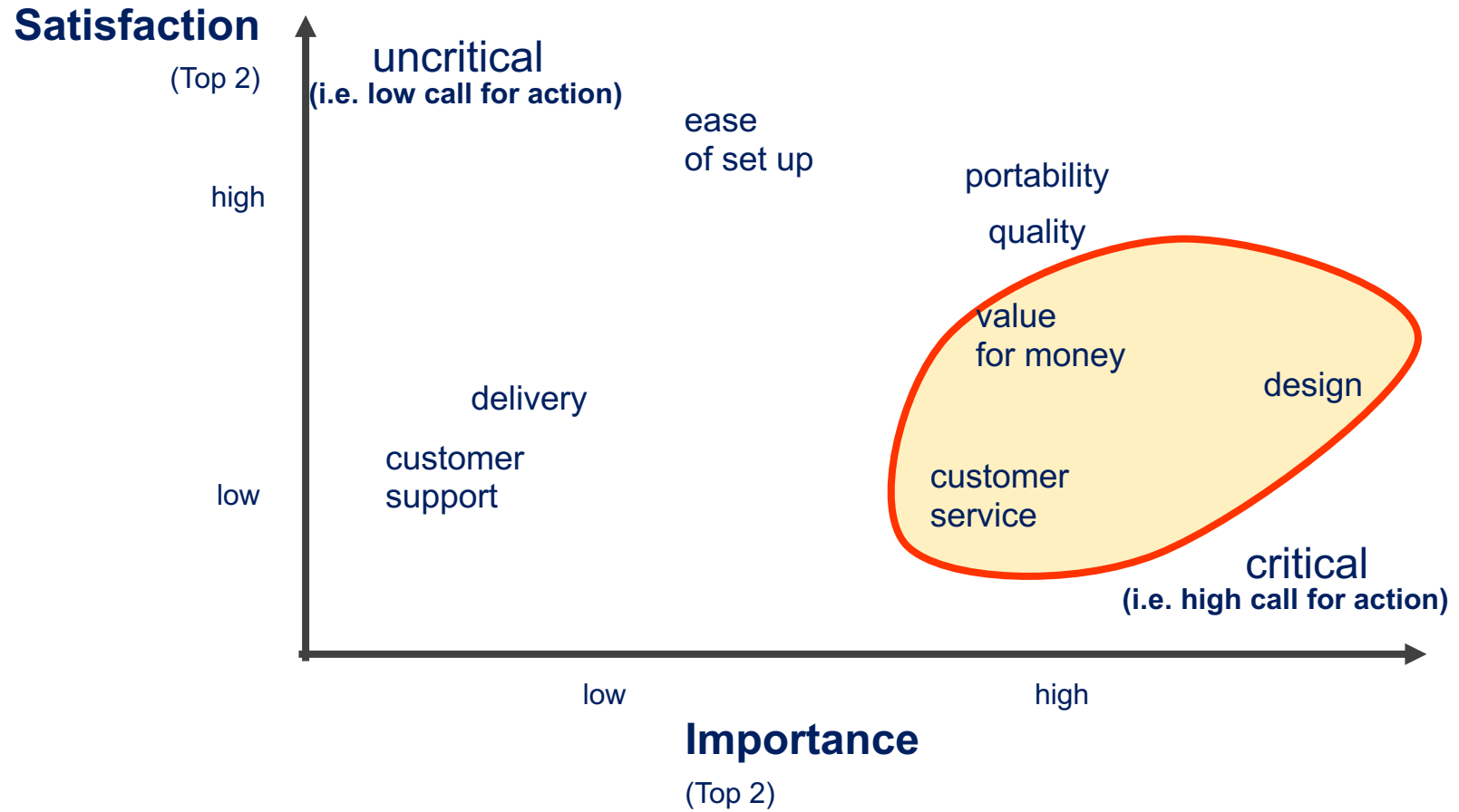# *Maybe Like This?*

Overall satisfaction with ZZZ Touch very high!

1) Design - Importance very high, satisfaction could be better

2) Portability – high level of satisfaction

3) Quality – good level of satisfaction

4) Value for money - satisfaction could be better

5) Customer service when buying – satisfaction very low!

6) Low importance of ease of set up, but highest level of satisfaction

(Ranking according to importance)

Or maybe Like This

	Satisfaction*	Importance*	Interpretation
Quality	High	High	Great work
Portability	High	High	Great work
Customer Service when buying	Low	High	Needs improvement
Design	Moderate	High	Needs improvement
Value for the Money	Moderate	High	Needs improvement
Customer support after purchase	Low	Low	OK but could be future concern
Ease of set up	High	Moderate	Better than needed
Delivery	Moderate	Low	Better than needed

* Based on % in top 2 boxes

This table demonstrates a synthesis of the analysis without a lot of effort to calculate mean scores and differences.
Sort by priority for client & use colour to enhance

Answers

Q1. Although satisfaction with some key attributes is very low, overall satisfaction is fairly high and these poorly rated attributes are likely not key drivers of satisfaction for existing customers

Satisfaction with customer support is an example of an item that is not highly rated but item is also rated very low in importance to many customers

Although satisfaction with design is reasonably high, this is the most important attribute to clients and may be worthy of improving

Q2. Stepwise multiple regression analysis among the attributes satisfaction and overall satisfaction to determine which attributes are the biggest driver(s) of satisfaction

Q3. Qualitative research because it would allow you to explore in depth the reasons why respondents answered the way they did.

-online bulletin board to examine design, support, customer service at buying and after (since it is new), and value for money.

-online fits the technology market allowing them to use the computer at the same time as the discussion

Make the synthesis easy to follow

Organize using tables & bullets

Answer all the questions directly

Then get out!

What did you take away?

- NOT a statistical exam but how analytics and insights utilizes statistics
- Moving from data, analysis to insights
- Understanding when to use different analytical techniques
- Understand how to interpret statistical results
- Building insights
- Building confidence

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