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# Doing Quantitative Grounded Theory: A theory of trapped travel consumption

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All is data. Grounded theorists employ this sentence in their quest to create original theoretical frameworks. Yet researchers typically interpret the word "data" to mean qualitative data or, more specifically, interview data collected from respondents. This is not to say that qualitative data is deficient; however, grounded theorists may be missing vast opportunities to create pioneering theories from quantitative data. Indeed, Glaser and Strauss (1967) argued that researchers would use qualitative and/or quantitative data to fashion original frameworks and related hypotheses, and Glaser's (2008) recently published book, titled *Doing Quantitative Grounded Theory*, is an attempt to help researchers understand how to use quantitative data for grounded theory (GT).

## Quantitative Grounded Theory

Glaser introduces quantitative grounded theory (QGT) by providing readers with a historical background of the methodology, which has ties to Glaser's sociological training by Paul Lazarsfeld at Columbia University. Although some readers may question the purpose of this introductory section, they should understand that QGT is willing to forgo some empirical rigor to generate frameworks that can be empirically tested at a future time. This stance contradicts the empirical rigor that Lazarsfeld was requesting and which represents the standard in the United States today. As a result, as social scientists, it is not surprising that we continue to learn increasingly more about increasingly less. Today, we clamor for complex structural equation models that illustrate putative causal relationships between and among exogenous and endogenous variables, which are either observed or latent. These research endeavors are far from inexpensive, as researchers must spend tremendous amounts of money gathering large data sets that are sizable enough to replicate an identifiable variance.covariance matrix. I am confident that contemporary social scientists who publish in leading journals can relate to the pressures involved in collecting data and to waiting for a "God-like" approval through an RMSEA or a CFI indicator.

Glaser is not denigrating empirical rigor; however, he makes readers question whether they can learn as much about the world by relying on relatively simple chi-square tests. He questions whether social scientists are wasting data, which many may perceive as meaningless based on an interpretation of model fit indexes. Then, QGT sets out to fashion creative models based on extant data sets and to do so in a way that assumes the data is nonparametric, but rich enough to capture a social phenomenon. Glaser spends the next major portion of the book providing novices with a thorough methodological instruction of QGT.

One of the greatest challenges to accomplishing a QGT study may be obtaining a data set. The data set must contain variables that evaluate a socially relevant and interesting condition. In essence, a core category must arise from quantitative data; thus, irrelevant empirical data can never lead to a core category. Although Glaser suggests that researchers can talk to fellow researchers to obtain raw data sets, I encourage researchers to explore Internet sites such as the Centers for Disease Control and Prevention, Roper Center for Public Research, Pew Research Center, and the U.S. Census for data sets that capture real social phenomenon. As a way to discuss QGT, I provide an actual example from one of my data sets.

The data set I selected for QGT was based on an actual project that I conducted for a 400-square-foot retail store aboard a ferry that transports people between Oahu and Maui. The trip lasts for three hours. The ferry's management sought input regarding product assortment. On a broader level, many retailers, such as airlines, bus tours, and railroads, serve consumers who are "trapped" for a few hours during transportation. For this project, a group of MBA students and I developed a list of products that might be of interest to ferry customers. In addition, we removed the influence of tourists by probing responses among residents. The reason for doing so is because the ferry targets residents who are seeking a more affordable, albeit longer, form of transportation to Maui; in contrast, tourists tend to fly interisland. We collected 377 questionnaires from the lower part of the Ala Moana Shopping Level, which caters to Honolulu's middle-class residents. Of the respondents, 58% were female, and 42% were male. The average ages of the respondents were between 25 and 35 years. Respondents were asked to analyze a list of 70 products and to indicate (0 = No, 1 = Yes) which of these they would be interesting in purchasing if they were taking a ferry to Maui. Respondents were also asked to indicate how much money they thought they would spend on the ferry. Finally, we obtained data about respondents' income level, residency status (as mentioned previously, only residents could participate), and ethnicity.

### Core Index

The first step in QGT is to create a core index. Similar to a core category, a core index represents a main concern among respondents. In the ferry study, the core index is based on the types of products customers planned to purchase to satisfy their needs during the three-hour excursion to Maui. The core index represents the combination of two or more questions or items in a questionnaire. In this study, ten different apparel items, such as men's and women's T-shirts and children's T-shirts, were added together to derive an apparel index; three items (dog bowl, collar, dog T-shirt) were added together for a total pet index, and so forth. During the summation process, the averages between 0 and .49 were coded as 0, and those between .50 and 1.00 were coded as 1. In terms of core index validation, Table 1 shows that at least one respondent displayed an interest in purchasing products from the indexes. Thus, the core index possesses face validity. Table 1 (cannot be shown)

### Consistency Indexes and Elaboration

After a researcher finds a core index, the next task is to develop a theory around the core index by presenting clusters of items that are associated with the core index. In this study, I chose to analyze gender as a consistency index. After completing a series of exploratory cross-tab

analyses between gender and each product from the core index, I elaborated on the study by considering planned spending on the ship as a third test variable. To accomplish this task, I divided the respondents into two mutually exclusive groups: one based on respondents who planned to spend $1.$20 and one based on respondents who planned to spend more than $20 (see Table 1).

### Creating Formal QGT

Whereas Glaser uses cross-tab analysis to highlight percentage differences among variables, I encourage researchers to use cross-tab analysis procedures from statistical packages, such as Excel, SPSS, SAS, and Minitab, to obtain p-values associated with a Pearson chi-square, which yield measures of statistical significance.

## A Theory of Trapped Travel Consumption

Modern transportation often means that travelers are trapped in one place for an extended period, usually any time from one to three hours. Table 1 represents a first attempt to put forward a theory of trapped travel consumption. More specifically, the framework shows the various types of products that respondents are likely to purchase on a three-hour ferry service, based on gender and planned expenditures on the ferry. Although it is intuitive that ferry customers would purchase cold beverages and motion sickness medication, it is less clear which other products consumers would purchase during the three-hour ride. However, the findings indicate that every respondent planned to spend at least $1 on products during the ferry service. Thus, the ferry service can essentially increase its profit potential by fine-tuning its product mix.

### Magazine Time

Nearly three-quarters of respondents, in both spending groups, planned to purchase a local newspaper on the ferry. In addition, approximately 40% of the respondents, in both spending groups, planned to purchase a national news publication, such as *USA Today* or *Newsweek*. Over half the women in the highexpenditure group planned to purchase a female-oriented magazine, such as *Cosmopolitan*, and 37% of the women in the low-expenditure group planned to do so. In contrast, 17% of the men in the high-expenditure group planned to purchase a maleoriented magazine, and 14% of the men in the low-expenditure group planned to do so. Of interest, nearly 20% of the men in the low-expenditure group indicated that they planned to purchase a leading U.S. paper, such as the *New York Times* or the *Los Angeles Times*, and 11% of the men in both the low- and the highexpenditure groups planned to purchase a leading business magazine, such as *Forbes* or the *Economist*. These results show that reading is integral to travel consumption, and thus the ferry service should consider outsourcing this department to a national chain such as Barnes & Noble. This tactic would enable consumers to use their loyalty card to save money and enable the ferry service to benefit from Barnes & Noble's merchandising expertise.

### Catch Some Rays

The data also reveal that the overwhelming majority of respondents indicated likelihood to purchase sunscreen on the ferry. This finding shows that the purchase of sunscreen is not planned

but rather arises from the circumstances. Furthermore, a desire to purchase sunscreen on the ferry emerged in both the low- and the high-expenditure groups. Thus, the ferry service could capitalize on such a last-minute purchase by selling sunscreen at value prices.

### Eat, Drink, and Be Merry

It is intuitive that ferry customers would purchase cold beverages during the service. Yet the data also reveal that more than one-half of the women in the low-expenditure group and nearly two-thirds in the high-expenditure group planned to purchase snacks on the ship, including candy, chips, gum, and so forth. Only 44% of the men in the low-expenditure group planned to purchase snacks, and this figure increased to approximately 59% among men in the high-expenditure group. Thus, the ferry service might consider focusing on snacks that are appealing to women, such as those that are healthier for the family in general.

### Reading and Writing

Another major finding is that approximately one-third of the respondents, across gender and planned expenditures, planned to purchase books, stationary, and greeting cards, perhaps in an effort to catch up on a novel or to send friends a letter. Indeed, without e-mail access, many consumers might recall how enjoyable it was to receive a post card from a friend or a greeting card from a family member.

### Get the Sun Out of My Eyes

Given that most of the respondents forgot sunscreen at home, it is not surprising that more than one-third of the men in the low-expenditure group and one-half in the high-expenditure group planned to purchase a baseball cap on the ferry.

### Need Tunes

Approximately one-third of the men in the high-expenditure group planned to purchase CDs, DVDs, or game cartridges on the ferry, and more than 20% of the women in that group planned to do so. This percentage reduces to half among those in the lowexpenditure group.

### A Floating Pharmacy

Another surprising finding is that between 20% and 25% of all respondents indicated that they would purchase cold medicine or eye solutions on the ferry, respectively.

## Conclusion

Overall, the data reveal that consumers are in an active purchasing state during trapped travel occurrences, which provides an organization the opportunity to maximize its profit potential by developing an appropriate product mix. Taken as a whole, the data reveal that consumers view a three-hour trip as a means to catch up on enjoyable pastimes that are lost in today's fast-paced, high-technological world. Although planned purchasing rather than actual purchasing was

explored in this example, the emergent theory typifies consumers seeking a respite from technology by purchasing newspapers, books, magazines, greeting cards, and even CDs and DVDs. In addition, a trapped travel occurrence is a time when consumers tend to take a break from their health regimen and indulge in sweet and salty snacks. Finally, trapped travel occurrences spur the purchase of essential items, such as sunscreen and baseball caps.

Future researchers can easily expand on the theory of trapped travel consumption, especially those in hospitality and marketing. Pioneering opportunities abound for research to explore family size and household income as additional variables. Furthermore, the rising cost of fuel in the United States will most likely influence people's consumption during travel excursion.

The impetus of this article was to show readers how to follow Glaser's (2008) QGT methodology by illustrating a theory of trapped travel consumption from actual quantitative data. In many ways, QGT is somewhat easier than traditional GT because the researcher has the flexibility to learn from each respondent and to constantly change questions. A questionnaire is a finite representation of reality, and whether QGT can develop a theory that possesses conceptual grab remains unknown. Thus, a QGT researcher faces the challenges of working with a completed data set to see latent theoretical patterns in a series of numbers, which can be conceptually interesting.

I anticipate that researchers who opt to use QGT will be questioned as to their desire to use cross-tab analyses to tease out an emergent framework from a data set rather than employing a more rigorous structural equation modeling or analysis of variance program. By easing methodological constraints, such as multivariate normality or non-correlated error terms, researchers acquire the freedom to explore a data set and to generate an original framework that yields hypotheses that can be empirically tested at a future time. Glaser's contribution in doing QGT is that he encourages researchers to counterbalance empirical rigor with theoretical sensitivity, as doing so leads to hypotheses that can be empirically verified. Unfortunately, too many social scientists clamor for rigor by forgoing theoretical sensitivity.

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