CHAPTER 1

1) Marketing research involves the identification, collection, analysis and dissemination of information. Explain how each of these phases of marketing research applies to Gucci’s problem.

   Identification involves defining the marketing research problem (or opportunity) and determining the information that is needed to address it. As such, Gucci has already identified an opportunity—using promotional games to increase catalog readership. However, they need to specify the information which is needed to determine if this opportunity is a good one.

   Once specified, the information needed must be obtained from relevant sources. A variety of data collection methods varying in sophistication and complexity can be used. Gucci will have to determine which of the methods is best suited for the information which is needed.

   Once collected, the data are analyzed, interpreted, and inferences are drawn. Many different statistical techniques can be used to describe populations of interest or to infer causal relationships between variables. The choice of methods will determine the type of data to be collected.

   Finally, the findings, implications, and recommendations are provided in a format that allows the information to be acted upon and to be directly used as input into decision making. Gucci managers will want the information explained to them in business terms, not research terms, so that they can act on it. Researchers will have to prepare a report for management which will describe their findings, include the statistical analysis, and make recommendations.

2) Is the problem facing Gucci a case of problem identification research or problem solution research? Explain.

   This is a case of problem solution research since the research is being conducted to solve one specific problem: Can promotional games increase the readership of Gucci catalogs and sales from catalogs? Specific issues Gucci can consider are copy decisions and creative advertising testing.

3) How can Gucci use MIS or DSS to assist them in their study?

   A marketing information system consists of a formalized set of procedures for generating, analyzing, storing, and distributing pertinent information to marketing decision makers on an ongoing basis. Information is extracted from various sources, combined, and presented to the
decision maker in a format which can be readily used in decision making. The result is that more information can be obtained from MIS as compared to ad hoc marketing research projects giving the decision maker more accurate and complete information on which to base decisions.

Decision support systems (DSS) have been developed to overcome the limitations of MIS and to enable decision makers to interact directly with the databases and analysis models. The important components of a DSS include hardware and a communication network, data base, model base, software base, and of course the DSS user (decision maker). Marketing research contributes to the data base by providing research data, to the model base by developing marketing models and analytical techniques, and to the software base by developing specialized programs for analyzing marketing data. DSS differ from MIS in that they are aimed at solving less structured problems like the one facing Gucci. They combine the use of models or analytical techniques with the traditional access and retrieval functions of computers. They are easy to use in an interactive mode and can adapt to changes in the environment as well as to the decision making approach of the user. This enables the DM at Gucci to access the information she needs and to customize it to suit her needs when making a decision.

CHAPTER 2

1) Before marketing research can effectively be carried out, a marketing research problem must be defined. However, to arrive at a problem definition, the first thing that must occur is the analysis of the Environmental Factors of the problem. In the Gucci catalog scenario, what information, relevant to the construction of a problem definition, can be obtained from the following factors and how might it be obtained?

First, before any information is gathered, the researcher must meet with the decision maker in order to get a general grasp of what outcomes the decision maker expects from the marketing research. Once the general idea has been transferred from the decision maker to the researcher, the researcher can then analyze the environmental factors to gain more information about the problem — with the ultimate goal of defining the problem.

a. Past information and forecasting
   Trends with respect to demographics, lifestyles, and market potential should be identified, since this information is useful in segmenting the market and targeting the appropriate group — should the plan to build buyer readership be implemented. However, perhaps more importantly, the acquisition of the above information will play a major role in determining whether a consumer need exists that can be served by such a plan (i.e. touchtone game via AVR).
This type of information may be obtained through interviews with industry experts, and secondary data analysis. Interviews with experts can be used to find out what factors they feel are acting on consumer's decisions to make catalog purchases (i.e., the economy, perceived risk, etc.). Also, experts can provide information with regard to what techniques are currently being used by catalog marketers and what new methods of direct marketing are available to catalog marketers. By obtaining this information, alternative techniques, not considered by the marketing department, might provide directions for exploratory research — if it appears that the alternative techniques are better suited to the task at hand. Finally, expert interviews will help to give the researcher some valuable insights into the catalog industry, which might aid the researcher in determining the crucial aspects of the industry.

Secondary data is also extremely useful for obtaining past information and forecasts. Exploration of internal company records (such as demographics on previous customers and the merchandise purchased by them) may also yield valuable insight. Furthermore, extensive data can probably be obtained at the industry level from external secondary sources. Some useful sources for the AVR problem of Gucci are: Encyclopedia of Business Information Sources (5th edition), Data Sources for Business and Market Analysis (3rd edition), Findex and CIRR (Corporate and Industry Research Reports Index). See Chapter four's section on Secondary Sources for full references.

b. Resources and constraints

Once past information and forecasts have been gathered, it would be worthwhile for the researcher to again sit down with the decision maker and discuss what financial resources and time constraints the organization has. Then these resources and constraints should be considered in light of the industry level information on demographic and lifestyles. It may be that if the largest market for the catalog merchandise is comprised of customers with incomes greater than $50,000 a year, the resources and constraints may limit the research problem just to this segment of the market — rather than the market as a whole. However, before the researcher continues in the research, he/she should make the decision maker aware of the limitations of the research, due to the constraints imposed on it by the organization itself.

c. Buyer behavior

Qualitative research would probably have to be carried out to determine buyer behavior information. In the Gucci case, the researcher would be particularly interested in learning the number and location of current and potential buyers of catalog merchandise. Also, demographic profiles of the current customers should be developed so that the age, income level, education level, and other facts about customers can be analyzed and used to identify
potential customers. Along the same lines, psychological profiles or lifestyle should be
determined for current customers.

The types of hobbies, interests, and opinions customers hold should be assessed so that
individuals possessing similar characteristics can be targeted for the catalog (i.e. segmentation).
Types of products that consumers purchase from Gucci catalogs, other catalogs, and retailers
should be examined; perhaps the factors that lead catalog purchasers to make retail purchases
should be explored. Also, since Gucci has a fairly high image, it might prove important to
ascertain the opinions that both current and potential customers have regarding the touchtone
game idea. It may be that loyal customers' image of Gucci is damaged by this game if they
perceive the game to be "tacky", and if this is so, whether this will detract from the probability
of their purchasing catalog merchandise through Gucci in the future. Furthermore, their
opinions about a 900 or 800 number should be obtained.

d. Economic environment

The current economy and what effect that has on the purchase of the luxury goods offered
by Gucci should be examined. Also, the number of individuals with sufficient incomes to
purchase Gucci products should be estimated — to determine the potential customer base. The
economic environment might also influence whether Gucci chooses to employ an 800 or 900
number for its game.

2) What is the management decision problem?*

Can a catalog readership game, implemented through AVR technology, be used to build
readership for the Gucci Catalog?

3) What is the marketing research problem?**
a. Broad
Determine the potential effectiveness of a readership game, through the examination of
customer preferences and intentions toward the game.

b. Specific
1. What criteria are used by consumers in deciding whether or not they prefer the game?
2. What criteria are used by consumers in deciding whether they would play the game?
3. What are the characteristics (demographic and psychological) of consumers who exhibit
   positive preferences and/or intentions toward the game?
4. What is the effect of the game on the Gucci image?
5. What factors cause consumers to examine and order from Gucci catalogs as opposed to other catalogs and retailers?

* Remember that the management decision problem might be phrased in another manner, the answers provided here are only one interpretation.

**The marketing research problem may be defined in several different ways depending on the information found when researching the environmental factors, and the goals to be achieved in the research. The definition provided here only represents one conceptualization of the problem definition.

4) While the tasks undertaken to help define the problem (i.e. discussions with management, interviews with experts, secondary data analysis, and qualitative research) are also helpful in developing an approach to the marketing research problem, two other techniques may be used when developing an approach. What are these techniques, and how might they be employed in the case of Gucci?

The first technique is a case study. Since, in order to be useful, case studies must be closely related to the research problem, the Gucci case study should probably be limited to the examination of other catalogers to find out whether they have been successful in gaining and maintaining readership, and if so, how. Better yet, it would be very profitable to examine other catalogers' games or promotions to increase readership. Factors that made competitors' games effective or not effective could then be identified. These factors then be taken into account when carrying out the research on the feasibility of the Gucci game.

Simulation is the second technique a researcher might employ to further develop the approach to the problem. By using a simulation model, the researcher could conceivably determine the ideal or target demographic/psychological customer profile, the potential size of the market of these "ideal" consumers, and where they are most likely to be found. Then the research effort could be focused on the potentially profitable segment of consumers, to both reduce the cost of the research and to discover the exact preferences and intentions of this group toward the proposed game. Furthermore, the game could be altered (i.e., experimentally manipulated by the researcher) when presented to some groups by changing the format, the rules, or some other factor of the game to arrive at the most effective form of the game.
5) Regardless of which techniques are used to develop the problem, the approach development process should produce several outputs. What output might result from the approach process applied to the Gucci scenario, in terms of:

a. Objective/Theoretical Foundations

In the investigation of secondary sources, the marketing literature should have been examined for theories and studies relevant to the catalog marketing environment. Through this review and the scrutiny of relevant studies, critical factors in consumer preferences for catalogs might be uncovered. This would then direct the researcher to be sure to include these factors in the current marketing research study. Factors which might prove to be salient are: perceived risk, perceived quality, convenience, and/or value. Also, errors or flaws found in previous studies could be avoided in the present situation.

Just as important as the factors, however, are theories that explain. (or have the potential to explain) consumer response to catalogs and their promotions (such as games) which might also be extracted from the literature. This theory or theories will then give the researcher a strong foundation to build on for the subsequent research and experimental design. For example, studies on perceived risk may indicate that as risk increases, purchases decrease, and that increasing risk is a function of price, cataloger image, perceived quality, and guarantees offered by the cataloger, as well as the strength of the consumers' beliefs in these guarantees.

b. Research Questions

As stated in Chapter 2, research questions are refined statements of the specific components of the problem; therefore for each problem component, the responses to several questions should be obtained. If we look at the marketing research problem for Gucci, we see that the first component deals with criteria used by consumers in deciding whether or not they prefer the game. Research questions for this component might include:

1. Do the consumers exhibit interest or curiosity about the game?
2. Is the consumer interested in receiving discounts on merchandise (i.e., are they price or value conscious)?

For the second component:

1. Is the return/benefit of the game (i.e., the discount on catalog merchandise) worth the cost (both time and money wise)?
2. Is the game easy to understand and play (i.e., are the rules straightforward and the rewards clear), or is the game confusing to the consumer?
3. Is the game a better game or promotion than the ones offered by the competition?
For the third component:
1. What is the education level of the consumers with interest in the game or intentions to play the game and/or make purchases? Level of income? Age? Family size? Location? Sex?
2. Do the positively oriented consumers possess loyalty toward Gucci as a cataloger?
3. What kinds of promotions would increase readership and why?

For the fourth component:
1. Is the image of Gucci enhanced or detracted from by the game? Why?
2. How could the game be modified to better fit or enhance the Gucci image?

For the fifth component:
1. Do these customers patronize other catalogers or retailers? If so, who, what merchandise, how often, and for what reasons?
2. Are these people price conscious? Quality oriented? Risk driven? Interested in convenience?

c. Hypotheses
Hypotheses are conjectures about the answers to research questions. Some hypotheses that might result from the second research question listed for component five are:

H1: Customers who are value conscious will play the game, and play it with more frequency than those who are not very value conscious.

H2: a) The more risk averse consumers are, the less likely they will order from a catalog.
    b) Perceived risk can be reduced by the game, since discounts are offered.

CHAPTER 3
1) Can exploratory research be used in this case? How?
   Exploratory research is needed to define the problem more precisely, to develop hypotheses, to isolate key variables and to establish priorities for further research.
   A review of secondary data and interviews with company officials, telecommunications specialists, and industry experts will be a useful first step. These sources will provide highly credible information which can be brought to bear precisely on the problem of using AVR technology to increase catalog sales.
Focus groups are a popular exploratory technique. They allow researchers to communicate directly with a group of consumers in a question and answer format. Consumers interact with one another enabling them to exhaust all ideas, attitudes, and impressions they contain. Focus groups will be discussed in more detail in Chapter 5.

2) Can descriptive research be used in this case? How?

Descriptive research enables researchers to describe market characteristics and functions. Surveys to gather descriptive research can be designed to learn the following -

To develop a profile of the characteristics of consumers who exhibit positive preferences and/or intentions toward the game.

To determine the criteria consumers use to evaluate the game.

To determine the criteria consumers use to decide if they will play the game.

To determine the criteria consumers use in deciding which catalogs to order from.

3) Can causal research be used in this case? How?

Causal research is used to assess cause-effect relationships and can be used by Gucci as well. Based on statistical analysis of survey data, we can discern relationships in the data like:

What is the effect of the game on the image of Gucci?
Does the game increase readership of Gucci catalogs?

4) What potential non-sampling sources of error would you, as the researcher, need to consider as you develop your research design?

Nonresponse errors are a concern in every marketing research project because some potential respondents will either refuse to be interviewed or will not be at home. We will want to specify our sample as accurately as possible and meet the sample size requirements (Chapter 12).

Response errors are also a concern in every survey. As researchers, we are most concerned with surrogate information error, measurement error, population definition error, sampling frame error and data analysis error.
Surrogate information error is the variation in the information needed and the information sought. We must fully understand the research problem and the environmental context of the problem in order to target the needed information.

Measurement error is the variation between the information sought and the information generated by the measurement items used. We must be careful to structure the questionnaire so that it elicits the information we need.

Population definition error is the variation between the actual population relevant to the problem at hand and the population defined by the researcher. We must understand the consumer segments of the market in order to precisely define the population of interest.

Sampling frame error is the variation between the population defined by the researcher and the population implied from the sampling frame. We should select the sampling frame which best approximates the defined population.

Data analysis error includes all errors arising from analysis of the research data. As researchers, we should possess the analytic skills to accurately interpret the data.

CHAPTER 4
1) What internal sources of secondary data can you identify which would be helpful to Gucci?

Secondary data may be gathered from a variety of sources. First and foremost, internal Gucci records should be reviewed to get an idea of the number of catalogs distributed, regional differences in distribution, past histories of sales and different promotional techniques used for catalog sales. These sources may include sales records, new orders from consumers, reports on trends from sales executives and forecasts of sales. Each of these can be analyzed by geographic region and mode of order (telephone or mail).

Because Gucci codes its order forms to tell the individual who ordered and whether the order came from bookstores, Gucci stores or the mail, the information can be treated like scanner volume tracking data. We can compare time ordered data from individuals who order through the magazine to see trends in purchases and use of the catalogue and compare this to trends from bookstore and Gucci store orders.

2) What published sources of secondary data can you identify which would be helpful?

Extensive data can probably be obtained at the industry level from external secondary sources, such as guides. Some useful published sources for the AVR problem of Gucci are: Encyclopedia of Business Information Sources, Data Sources for Business and Market Analysis, Findex and
CIRR (Corporate and Industry Research Reports Index). By looking up handbags and luggage industry in the guide, trade journals, directories and trade associations can be located.

Trade journals to consult include *Direct Marketing,* and *American Demographics.*

Government sources can provide some indication of general economic and industry trends, but will not be as specific as the trade information. Sources to consider include the Census of Retail Trade and the Census of Population. In addition, general statistical information may be obtained from County Business Patterns, Business Statistics, Economic Indicators, and the Handbook of Cyclical Indicators.

3) Would you recommend using syndicate sources of secondary data? If so, which ones would you recommend?

Syndicate sources offer Gucci access to common pools of information at relatively low cost. Several different types of syndicate sources can be used, including surveys and advertising evaluation. Surveys of psychographics and lifestyles will be useful for determining the characteristics of consumers who exhibit positive preferences toward the game. Audits and Surveys, Inc., surveys can be used to better understand consumers.

Advertising should be evaluated in order to set up the most effective promotional campaign for the game. Working with printed material, either the Gallup and Robinson Magazine Impact Studies or the Starch Readership Survey can be used.

4) How can the buying power index (BPI) be used by Gucci?

This survey contains information on population, income, retail sales and the BPI available at the metropolitan area, county, and city levels. It indicates the relative market potential between geographic territories. So Gucci can get an idea of the areas which have the greatest market potential for Gucci products.

CHAPTER 5

1) Which exploratory research techniques would you recommend and why?

The most common and appropriate technique would be a focus group. Focus groups allow researchers to discover unexpected findings due to the free-flowing group discussion which it engenders. It can help us to understand consumer perceptions, preferences, and behavior concerning catalog shopping; obtain impressions of the game promotion; uncover the choice
criteria of consumers in preferences for and use of the game; and factors which cause consumers to order from Gucci catalogs.

Depth interviews with consumers are not as likely to be useful as focus groups. They are very expensive, require expert interviewers and are limited in external validity. Depth interviews with industry experts on the feasibility of using AVR for catalog orders is more appropriate. These experts could offer insights on variables to consider, hypotheses to test, and industrial competitive tactics.

Projective techniques can be used to uncover underlying motivations, attitudes and beliefs which may not be available to the respondent's conscious awareness. Word association and sentence completion techniques can be used. They allow us to uncover associations between concepts which are related to catalog purchasing and the subconscious.

2) Develop a moderator's outline for a focus group to assess consumer desires in catalog purchases with respect to Gucci.

A typical moderator's outline is listed below. Other outlines are possible, but should cover the same basic content areas.

Welcome respondents
Explanation of focus group procedures
Familiarity and opinion of Gucci products
Attitudes toward catalog shopping
   Likes
   Dislikes
   Past usage
   Reasons for ordering from catalogs
Familiarity and opinion of Gucci catalogs
Attitudes toward AVR technology
   Likes
   Dislikes
   Past usage
Attitudes toward the game
   Likes
   Dislikes
   Reasons for playing the game
Attitudes toward using AVR technology for Gucci
Attitudes toward using the game in Gucci catalogs
Summary of the discussion
Thank you and dismiss

3) Devise word association techniques to measure consumer associations which may affect attitudes toward designer carpets.

Word association techniques should reflect the key adjectives or attributes which relate to catalog shopping. Some of those are listed here.

catalog shopping _____________

Gucci _____________

900 numbers _____________

direct mail _____________

4) Design sentence completion techniques to uncover underlying motives.

Sentence completion techniques should provide a context in which to frame a response. As such, they are more specific than word association. However the sentences should not bias results. Some of the sentences which could be used are -

Automated voice response makes me feel _________________

Buying from a catalog is _________________________________

Games used in direct mail are ____________________________

Gucci catalogs offer me ________________________________

CHAPTER 6
1) Which of the following criteria for selecting survey methods are most important in this case. Check all that apply.
2) Which survey method would you recommend to Gucci to conduct descriptive research? Why? What are the limitations of this mode?

This survey will need to collect a large variety of information as specified in the research questions. This includes information on Gucci, AVR technology, catalog ordering and direct mail. The interview will therefore need to have high flexibility in data collection. In addition, the diversity of questions will be high to cover all of these areas. It would be beneficial to use examples of Gucci catalogs and catalogs with the game printed in them while interviewing in order for respondents to have an accurate perception of the catalog and game. We would like to have very high control of data collection environment to ensure that we have room to show the catalogs. Sample control is important to ensure that we gather data from a representative cross-section of consumers interested in Gucci. Finally, as in all surveys, we would like the data collection to be as quick and inexpensive as possible.

For these reasons an in-home interview is recommended. In-home interviews allow us to collect large amounts of data in highly flexible ways by asking many questions because we are in direct contact with the respondent. It allows us to use the catalogs as physical stimuli for the respondents. The response rate tends to be very good and the speed moderate. Control of the data collection environment is moderate to good and allows us to comfortably use the catalogs in the interview. Finally, in-home personal interviews offer more sample control than mall interviews since many people who order from catalogs may not visit malls to do their shopping.
In-home personal interviews are limited by poor ability to control the field force since field workers do not interview at a central site. Also, while the speed is moderate, the cost is very high, so Gucci must be willing to commit a significant investment in this research. If not, then mall-intercepts can be used with the understanding that sampling frame error may be significant.

3) Can observational methods be used to collect data? How? What are the limitations of your method?

Observational methods can be used here. Through personal observation, we can observe respondents looking at Gucci catalogs. We can take note of how many respondents play the game and consider this an indicator of interest in the game. Trace analysis of the pages of the catalogs can reveal how many game stickers were removed indicating the interest in the game. This research would be unstructured and disguised, and it could be either natural or contrived.

Note that the interpretation of interest in the game will be somewhat subjective. In addition, the observation only indicates behavior, but does not tell us anything about the underlying motivations and attitudes which elicited the behavior. Thus, it is advisable to combine observation with surveys.

CHAPTER 7
1) Is causal research necessary in this case? If so, which experimental designs would you recommend and why? If not, devise a scenario in which it would be?

Causal research is needed to assess the relationship between the game and the Gucci image. It is possible that a game may be conceived as a gimmick to increase sales which is incompatible with Gucci's high status image.

The best research design in this case is the pretest-posttest control group design. This design allows us to most precisely measure the effect of the game on the Gucci image. It can be conducted in a laboratory by first randomly assigning respondents to one of two groups. One group will be given Gucci catalogs with the game; the other will serve as the control group and receive Gucci catalogs without the game. A pre-test of attitudes toward Gucci can be given to both the experimental and control groups. Then the catalogs can be shown to the appropriate groups. Afterwards, a second test of attitudes toward Gucci catalogs can be given to the two groups and conclusions drawn.

2) What extraneous variables are threats to the internal and external validity in the design you have selected?
The pretest-posttest control group design suffers from the interactive testing effect because we must test the experimental group before showing them the catalog with the game. As such, we may inadvertently bias their responses. In this case, the initial questionnaire should be devised so that it gives little indication of the purpose of the study.

3) If a mall-intercept interview is used and Gucci conducts causal research without randomizing respondents, which pre-experimental design would you recommend? What threats to internal and external validity exist?

The static group design is most appropriate because it allows us to use a control group in experimentation. Control groups enable us to measure the effect of the game on Gucci’s image since we can compare results of the experimental group against the control group. The static group design could be conducted by assigning respondents to either the control or experimental groups. This could be done by convenience by having each interviewer designated to show their interviewee either the traditional Gucci catalog (the control group) or the Gucci catalog with the game (experimental group). After reviewing the catalog, the respondent would answer a questionnaire measuring attitudes toward the catalog. The effect of the game would then be measured as O2-O1.

The problem with the static group design is that we do not randomize respondents so that the design suffers from the possibility of selection bias. Mortality can be a problem since some respondents may refuse to continue in the experiment. However, in this case, because the experiment is quickly completed it should not be a serious threat to validity. While maturation can affect some static group designs, it should not be a problem in this case since the experiment is completed very quickly.

4) Can you think of any way in which the static group design above can be randomized to increase its validity?

Randomization is possible and several schemes can be devised. For example, after gaining compliance of the respondent, a coin could be tossed to determine which catalog would be shown. If the coin lands on heads, the traditional Gucci catalog is shown, if it lands on tails the Gucci catalog with the game is shown. Other ideas are possible as long as they rely on some random event to determine which catalog is shown to the respondent.
1) In constructing an item for a questionnaire, Gucci decides to use a noncomparative itemized rating scale to measure attitudes (i.e., like or dislike) toward Gucci catalogs. They ask you to construct a Likert scale for this item and want your advice on the number of scale categories, balanced or unbalanced design, odd or even number of categories and the anchors to use. Give Gucci your opinion on these decisions with justification and construct the scale.

For all of these decisions, no single correct answer exists, but the researcher has some latitude in deciding what to do. We shall address the issues which affect each decision and give our suggested answers.

The number of scale categories traditionally ranges from 5 to 9 with 7 as a median value. Because respondents should be somewhat familiar with Gucci catalogs and personal interviewing is being used a value of 6 or 7 seems warranted.

The scale should be balanced since we have no a priori indication that the distribution of responses will be skewed.

Because some respondents may have no opinion on this issue, for example, those who have never seen Gucci catalogs before, an odd number of categories is appropriate in which the middle category is labeled no opinion.

The choice of anchors for the scale is very subjective. In our opinion, it is better to achieve a more peaked distribution than a flat distribution of responses since this approximates the normal distribution. However, the anchors should not be so extreme as to discourage respondents from using the ends of the scale. A traditional list of anchors which is appropriate is given below.

1 - Very Much Dislike
2 - Dislike
3 - Somewhat Dislike
4 - No Opinion
5 - Somewhat Like
6 - Like
7 - Very Much Like

2) What types of comparative scales can be used to gather the information needed on motivation, attitudes, and intentions? Design these scales.

Motivation

All of the motivational information can be obtained with any of the comparative scales. An example of the paired comparison scale is given.
Please compare each of the following pairs of motivations for playing marketing games. Indicate which one of the two motives in a pair you believe best characterizes you.

Save Money  Fun to Play  Want to Win

Save Money

Fun to Play

Want to Win

Attitudes
Attitudinal information is better collected with noncomparative scales since attitudes inherently are evaluative judgments on a particular subject.

Intentions
Purchase intentions can be understood by asking consumers how likely they would be to exhibit certain behaviors, such as catalog ordering, or game playing within a future period of time. Intentions can be assessed with any of the comparative scales, however only an example of rank order scaling will be shown.

Assume you are going to buy Gucci products. Please rank the following ways to purchase Gucci products based on your intended way to purchase goods?

<table>
<thead>
<tr>
<th>Way to Purchase</th>
<th>Rank Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catalog mail order</td>
<td></td>
</tr>
<tr>
<td>Retail Store</td>
<td></td>
</tr>
<tr>
<td>Catalog phone order</td>
<td></td>
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</table>

3) What types of noncomparative scales can be used to gather the information needed on psychographics, motivation, attitudes, and intentions?

Psychographic Information
Psychographics can be obtained from an activities-interests-opinions (AIO) inventory. An AIO inventory can be constructed from a list of statements related to lifestyles. Respondents express their degree of agreement or disagreement with the statement. For example,
I have more self-confidence than most of my friends

<table>
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<th>Neither Agree nor Disagree</th>
<th>Strongly Agree</th>
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<td>1</td>
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<td>6</td>
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Magazines are more interesting than television

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<th>Neither Agree nor Disagree</th>
<th>Strongly Agree</th>
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I never know how much to tip

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<th>Neither Agree nor Disagree</th>
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Most of my friends have graduated from college

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</tbody>
</table>

To obtain reliable results from an AIO inventory, many more items than listed here are required. Some of the items may seem to be irrelevant to the issue of shopping from catalogs or playing the Gucci game, yet the objective is to get a picture of the respondent's psychological and lifestyle characteristics. In addition, a researcher would want to make inferences about the population of potential customers to see if statistically significant correlations exist between (1) different psychological and lifestyle characteristics and preferences, or (2) attitudes toward the game and the catalogs.

Motivation

Motivation can be measured using a Likert scale (in addition to a comparative scale as described above or other noncomparative scales). For example,

Below are statements which describe different opinions about playing games in catalogs which have been sent to you. Please indicate how strongly you agree or disagree with each statement by using the following scale:

1 = Strongly Disagree
2 = Disagree
3 = Somewhat Disagree
4 = Neither Agree nor Disagree
5 = Somewhat Agree
6 = Agree
7 = Strongly Agree
I play games for the enjoyment

I play games because I like to win

It is important for a game to offer real savings when purchasing goods

Attitudes

Attitudes can be measured with any noncomparative technique. An example using the semantic differential will be given.

Please mark the scale below in relation to what the statement means to you.

Games in catalogs are ...

Fun |___|___|___|___|___|___|___| Dull

Interesting |___|___|___|___|___|___|___| Simplistic

Valuable |___|___|___|___|___|___|___| Not valuable

Shopping from a catalog is ...

convenient |___|___|___|___|___|___|___| not convenient

inexpensive |___|___|___|___|___|___|___| expensive

easy |___|___|___|___|___|___|___| difficult

advisable |___|___|___|___|___|___|___| not advisable

Intentions
Intentions can also be measured using noncomparative scales. An example using the Likert scale is shown here.

Below are statements which describe different intentions toward shopping from catalogs which have been shown to you. Please indicate how strongly you agree or disagree with each statement by using the following scale:

1 = Strongly Disagree
2 = Disagree
3 = Somewhat Disagree
4 = Neither Agree nor Disagree
5 = Somewhat Agree
6 = Agree
7 = Strongly Agree
4) In designing scales for the survey, when you have a choice of comparative or noncomparative scales, which scales do you recommend?

   In the case of attitudes and psychographics, only noncomparative scales are applicable and any of the noncomparative scales mentioned in the text are appropriate.

   For preferences, only comparative scales are appropriate since a preference inherently compares two or more brands.

   Motives may be obtained with either comparative or noncomparative scales. Either may be appropriate given that the level of information is equivalent across both scales and depending on the type of information desired. In this case, comparing motives is not critical and may be difficult for respondents to accurately assess. Thus, noncomparative scales are recommended.

   Similarly, intentions can be measured with either, but in this case comparative scales are preferable since intentions are related to preferences. By using comparative scales here, the respondent must order his intentions which gives us a greater indication of what actual behavior will follow.

5) How would you determine the reliability of the scales?

   As in the other exercises, test-retest reliability will be the most feasible since only one test needs to be constructed and then this test is given to different samples. Thus, we are saved the time consuming and technically difficult task of constructing an equivalent questionnaire.

   If our survey has a significant number of summated scales, we can use internal consistency reliability. Applying split-half reliability, we can divide the multi-items into two halves and the resulting half scores can be correlated. High correlations indicate high internal consistency. Cronbach's alpha can then be used to assess internal consistency. In many marketing research studies, cost and time limitations prohibit a detailed study of reliability, though efforts should be made at the beginning of the project to budget for it.
6) How would you assess the validity of the scales?

As mentioned above, content validity should always be conducted since it requires only a subjective analysis of the scales to determine if they are sufficient for the construct being measured. However, it is not sufficient in itself, so criterion and construct validity should also be assessed. Criterion validity can be assessed with concurrent validity which allows us to collect the data on the scale and the criterion variables at the same time. Shorter forms of the questionnaire may be given to some respondents and results of the long form and the short form compared for validity. Because we have no time limitations, construct validity can be attempted though it still may be difficult to measure since it requires that we have information on other variables, like attitudes, intentions, motives and behaviors, related to the game in the Gucci catalog. Efforts should be made at the beginning of the project to budget for these studies since their results will inform us of the validity of our results.

CHAPTER 10
1) What challenges exist in this case in meeting the three objectives of a questionnaire?

The three objectives of a questionnaire are to (1) translate the information into a set of specific questions that the respondents can and will answer, (2) a questionnaire must uplift, motivate, and encourage the respondent to become involved in the interviewing process, to cooperate, and to complete the interview, and (3) a questionnaire should be designed to minimize response error.

In the first case, questions will have to be constructed with precise technical language since the respondents will be very highly trained in matters of power supply generators. Using improper terms may lead to confusion on the part of the respondents and an unprofessional perception of the researcher.

Secondly, the questionnaire must encourage busy business personnel to respond. Demands on the respondent's time are many, and a survey, unless properly motivating, will not be high on their priority list of tasks to accomplish. The wording of the questionnaire must facilitate response and the introduction to the questionnaire must capture the interest of the respondent.

Lastly, the questionnaire must be technically constructed so as to minimize response error. Scale design, question formats, and question order must be formed so as to minimize response bias.
2) Design a questionnaire to be used in a survey.

Please answer ALL the questions whether or not your household currently receives a Gucci catalog.

Q1. Do you currently receive catalogs in the mail?
   Yes ________
   No ________

Q2. What catalogs are you currently receiving?

________________________________________________________________________
________________________________________________________________________

Q3. In the catalogs you have received in the past year, did any of them have a promotional game?
   Yes ________
   No ________
   If YES, which catalogs had promotional games?

________________________________________________________________________
________________________________________________________________________

Q4. Did you play any of the promotional games in the catalogs?
   Yes ________
   No ________
   (If NO, go to question Q8)

Q5. Please mark the scale below in terms of what the statement means to you.
   Promotional games in catalogs are ...

   a. Fun |___|___|___|___|___|___|___| Dull
   
   b. Sophisticated |___|___|___|___|___|___|___| Simplistic
c. Valuable [___|___|___|___|___|___|___] Not valuable

d. Worth my time [___|___|___|___|___|___|___] Not worth my time

Q6. Below are statements which describe different opinions about playing the games in catalogs which have been sent to you. Please indicate how strongly you agree or disagree with each statement by using the following scale:
1 = Strongly Disagree
2 = Disagree
3 = Somewhat Disagree
4 = Neither Agree nor Disagree
5 = Somewhat Agree
6 = Agree
7 = Strongly Agree
a. Promotional games in magazines add to the image of the magazine

b. I'm likely to buy something from a catalog which has a game in it.

c. Games save me money on my shopping

d. I play games for the enjoyment

e. I play games because I like to win

f. It is important for a game to offer real savings on items in the catalog

Q7. Please mark the scales below in terms of what the statement means to you.

Company catalogs I receive in the mail are ...

a. helpful [ ] [ ] [ ] [ ] [ ] [ ] [ ] a bother

b. informative [ ] [ ] [ ] [ ] [ ] [ ] [ ] not informative
Shopping from a catalog is ...

c. convenient not convenient

d. inexpensive expensive

e. easy difficult

f. advisable not advisable

Q8. Have you ever heard of Gucci?
   Yes
   No

Q9. Have you ever received a Gucci catalog in the mail?
   Yes
   No

Q10. Have you ever looked through a Gucci catalog?
    Yes
    No

Q11. Have you ever purchased anything from a Gucci catalog?
     Yes
     No

Q12. Please mark the scales below in terms of what the statement means to you.
     Gucci is ...

     a. Expensive Inexpensive

     b. Sophisticated Common

     c. High Status Low Status
d. Poor Quality | | | | | | | | Top Quality

I am going to show you a Gucci catalog. I would like you to look through the catalogs for a few minutes before answering the next question. (Give the respondent catalog)

Q13. Please rate the catalog you have just seen on the following attributes. Use a 1 to 7 scale where 1 means Very Poor and 7 means Excellent.

<table>
<thead>
<tr>
<th></th>
<th>Very Poor</th>
<th></th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Attention grabbing</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Fun to look at</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Matches the Gucci image</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Shows quality products</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Fashionable</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Easy to place an order</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q14. Think about the promotional game you saw in the catalog. Please indicate how strongly you agree or disagree with each statement by using the following scale:

1 = Strongly Disagree
2 = Disagree
3 = Somewhat Disagree
4 = Neither Agree nor Disagree
5 = Somewhat Agree
6 = Agree
7 = Strongly Agree

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. The game was fun to play</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>b. The game caught my eye</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>c. The game adds to the appeal of the catalog</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>d. I am less likely to buy something from the catalog because of the game</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>e. The game is right for Gucci</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>f. Calling a 900 number to get</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
my discounts when ordering is okay

Q15. How likely are you to participate in this promotional game?
Not so Likely       Maybe/Maybe Not       Very Likely
1  2  3  4  5  6  7

Please explain why or why not?

________________________________________________________________________

________________________________________________________________________

Q16. Below are statements which describe different intentions toward shopping from catalogs. Please indicate how strongly you agree or disagree with each statement by using the following scale:

1 = Strongly Disagree
2 = Disagree
3 = Somewhat Disagree
4 = Neither Agree nor Disagree
5 = Somewhat Agree
6 = Agree
7 = Strongly Agree

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. I intend to play any game I find in a catalog</td>
<td>1  2  3  4  5  6  7</td>
<td></td>
</tr>
</tbody>
</table>
Q17. Assume you are going to buy Gucci products. Please rank the following ways to purchase Gucci products based on your intended way to purchase goods?

<table>
<thead>
<tr>
<th>Way to Purchase</th>
<th>Rank Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Catalog mail order</td>
<td></td>
</tr>
<tr>
<td>b. Retail store</td>
<td></td>
</tr>
<tr>
<td>c. Catalog phone order</td>
<td></td>
</tr>
<tr>
<td>d. Ordering on the phone</td>
<td></td>
</tr>
</tbody>
</table>

Q18. In this section, there are several statements about interests and opinions. For each statement, indicate if you agree or disagree with the statement based on a 7 point scale where 1 means Strongly Disagree and 7 means Strongly Agree.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Magazines are more interesting than television</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>b. I never know how much to tip</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>c. Most of my friends have graduated from college</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>d. I spend for today and don't worry about tomorrow</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>
e. Advertising insults my intelligence 1 2 3 4 5 6 7
f. I am a bit of a swinger 1 2 3 4 5 6 7
g. I like to buy new and different things 1 2 3 4 5 6 7
h. Warranties aren't worth the paper they are printed on 1 2 3 4 5 6 7
i. It is important to me to feel attractive to others 1 2 3 4 5 6 7
j. I wish I knew how to relax 1 2 3 4 5 6 7
k. I shop often for specials 1 2 3 4 5 6 7

Q19. Please answer the following questions as they relate to the way in which you have answered this questionnaire.

a. How interested were you? Not so interested Very interested
   1 2 3 4 5 6 7

b. How committed were you? Not so committed Very committed
   1 2 3 4 5 6 7

c. How much effort did you use? Not much effort Much effort
   1 2 3 4 5 6 7

d. How motivated were you? Not so motivated Very motivated
   1 2 3 4 5 6 7

e. Did this questionnaire lead you to change your views about catalogs? A lot of change
   No change

Gucci - 30
Q20. Your gender?
1. _____ Male
2. _____ Female

Q21. Marital Status
1. _____ Married
2. _____ Never Married
3. _____ Divorced/Separated/Widowed

Q22. Family Size
1. _____ 1
2. _____ 2
3. _____ 3
4. _____ 4
5. _____ 5+

Q23. Your age:
1. _____ 18-24
2. _____ 25-40
3. _____ 41-60
4. _____ 60+

Q24. Your formal education
1. Less than high school _____
2. High school graduate _____
3. Some college _____
4. College graduate _____

Q25. What is your address?
________________________

Q26. What is the approximate combined annual income of your household before taxes?
1. $10,000 or less _____
CHAPTER 11
Answer questions 1 through 4 assuming that a personal interview is being conducted.

1) What is the target population for this study?

The target population is the consumer population at large. It is difficult to be more specific than this because Gucci is interested in attracting new readers to its catalog.

2) What sampling frame can you use?

Because we are conducting a personal interview, we must set up interviews with individuals. This can be done by targeting specific neighborhoods with fliers or letters seeking individuals to participate in exchange for a fee. Appointments can then be set up by convenience. In this scenario, the sampling frame is a neighborhood.

3) What sampling technique do you recommend for this study? Why?

Cluster sampling would work well in this case. The clusters would consist of neighborhoods which would be chosen at random through a probability sampling technique. For the selected clusters every household can be contacted with a flier in the mail seeking participants for the survey. Another strategy would be to telephone each individual in the neighborhood. However, unlisted numbers would lead to nonresponse bias.

4) What nonresponse issues must be considered and how can they be overcome?

Using cluster sampling as described above will have a high degree of refusals, but a relatively low rate of not-at-homes. In an effort to motivate respondents, a small fee, perhaps $10,
can be paid to the respondents for their time. In addition, by setting up appointments, prior notification of respondents makes them more willing to commit to a personal interview. For non-respondents, follow up by sending them a second and third notice to increase response rates. For these people, it may help to use the foot-in-the-door technique by asking for a reply to a small questionnaire which would test if they have ever seen Gucci catalogs. For those who reply, telephone contact can be made to try to induce them to participate in the survey.

CHAPTER 12

1) Suppose Gucci conducts a preliminary market study of twelve respondents to determine the average amount of a discount respondents would like from a promotional game. The mean response is calculated to be $5.00. If Gucci wants to be 90% sure that the true value lies within $0.50 of this figure, how large a sample do they need to survey given that the sample standard deviation is $2.00? What is the confidence interval for the mean based on the preliminary market study?

This is the confidence interval method using means. Note that the means are not needed for sample size calculations. The values of the parameters are

- \( D = .50 \)
- Level of Confidence: 90%
- \( Z = 1.645 \)
- \( s_x = 2 \)
- \( \frac{z_a}{2} = 1.645 \)

\[
\begin{align*}
\frac{s_x^2 Z^2}{D^2} & = \frac{2^2 (1.645)^2}{(.5)^2} \\
& = 43.2964, \text{ or 44 respondents.}
\end{align*}
\]

The 90% confidence interval is given by

Gucci - 33
2) Suppose after conducting the experiment in exercise 2, Gucci learns that these observations generated a mean of $6.00 and sample standard deviation of $3. What is a better estimate of the 90% confidence interval than previously calculated?

\[ 6 - 1.645 (3) < \mu < 6 + 1.645 (3) \]
\[ 1.065 < \mu < 10.935 \]

CHAPTER 13
Answer the following questions assuming an in-home personal interview is being conducted.

1) What characteristics would you look for when hiring field workers for this survey?

Because this is a personal interview, physical appearance and manners are important. The individuals should have a pleasant appearance and appear and act professionally, thus they should have at least a high school education. Experienced personal interviewers are needed since they will tend to be more comfortable interviewing in someone else's home. Interviewers will need to be personable in order to promote a relaxed atmosphere for the interview. They should have effective speaking, listening and writing skills to successfully capture and record the information.

2) What issues are most important in training your field workers for this survey?

Making the initial contact: Because interviews will be pre-arranged, we will already have the compliance of the respondents. Nevertheless, the initial contact is still important to gain the confidentiality and trust of respondents. Practice in approaching people should be a part of the training, including an opening line.

Asking questions: As always, field workers must ask the questions exactly as worded in order to prevent interviewer bias. Field workers should be instructed to abide by the guidelines listed in the text.
1. Be thoroughly familiar with the questionnaire.
2. Ask the questions in the order in which they appear in the questionnaire.
3. Use the exact wording for each question as given in the questionnaire.
4. Read each question slowly.
5. Repeat questions that are not understood or are misrepresented.
6. Follow instructions related to asking questions (e.g., skip patterns, probing etc.) carefully.
7. Ask every question in the questionnaire except those which should be skipped.

**Probing:** When respondents do not sufficiently answer the question, it is necessary to motivate them to respond or clarify their answers. Training should cover different techniques of probing so that field workers are comfortable with at least one technique.

**Recording answers:** Field workers should be familiar with the survey form and know how to mark responses on the form. The entire form should be reviewed in detail. Recording answers to unstructured questions should be reviewed as well. The guidelines listed in the text should be followed.
1. Record responses during the interview.
2. Use the respondent's own words.
3. Do not summarize or paraphrase the respondent's answers.
4. Include everything that pertains to the question objectives.
5. Include all probes and comments.
6. Repeat the response as it is written down.

**Terminating the interview:** Field workers should be instructed to close each interview in a polite and gracious manner after all the information has been obtained.

3) What issues must you as the supervisor be most concerned with during the interviewing?

Because all interviews take place at distant locations away from the central office, supervision of field workers will be difficult, but very important. Quality control and editing is needed regardless of the mode of data collection. Sampling control should not be a significant problem since the interviews are set up in advance, yet supervisors should keep daily records on the number of calls made, not-at-homes, refusals, and completed interviews. Control over interviewer cheating is also difficult to monitor and may be a problem since surveys can be falsified in whole or part. Finally, central office controls are also needed, such as checking quota variables, demographic characteristics, and answers to key variables.

4) How would you validate the field work?
After the interview is completed, a random sample of the respondents can be telephoned and asked about the questions they were asked in the interview to ensure the entire interview was completed. The responses they give can be verified against the answers on the survey form to ensure that they are legitimate. Field workers should leave their business cards with respondents to legitimize the interview and make identification easier when a callback is made.

5) How would you evaluate the success of your field workers?

Means of evaluating field workers are cost and time, response rate, quality of the interview and quality of data. Interviewers can be compared against other interviewers who worked in the same neighborhood by the total cost per interview completed. Response rate should be high because the interviews were pre-arranged, thus any interviewer who has a low response rate should be checked. The quality of the interview may be difficult to evaluate since it will require the supervisor to accompany the interviewer to monitor it. The quality of the data can be assessed on (1) whether the data are recorded in a legible way, (2) whether all instructions including skip patterns were appropriately followed, (3) whether the answers to unstructured questions appear to be recorded verbatim rather than in a summary fashion, (4) whether the answers to unstructured questions are meaningful and complete enough to be coded, and (5) whether item nonresponse has a low frequency of occurrence.

CHAPTER 14

1) Suppose the following responses appeared on completed questionnaires which you as the supervisor of the project are editing. What is the problem with the responses and how would you treat them?

   a. How likely are you to participate in this promotional game?

   | Not so Likely | Maybe/Maybe Not | Very Likely |
   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

   Please explain why or why not?

   Games sometimes are fun.
This response is obviously illegible. If the data are to be of meaning, responses must be properly coded. Coding of illegible responses is difficult and risky. The best solution is to get together with the field worker who completed this questionnaire and ask her what the response is. This can be double-checked by contacting the respondent again to verify the answer.

For the next two questions, assume that we cannot recontact the respondent, only three unsatisfactory responses exist and the sample size is 200.

b. How likely are you to participate in this promotional game?

<table>
<thead>
<tr>
<th>Not so Likely</th>
<th>Maybe/Maybe Not</th>
<th>Very Likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7</td>
</tr>
</tbody>
</table>

Please explain why or why not?

I don't like games. They bore me and really don't save any money when you buy something.

This response is inconsistent since it indicates that the respondent is very likely to participate in the survey, yet the open-ended response indicates that he does not want to play the game. Because relatively few unsatisfactory responses exist and we cannot get in touch with the respondent, it is probably best to simply discard the response.

c. How likely are you to participate in this promotional game?

<table>
<thead>
<tr>
<th>Not so Likely</th>
<th>Maybe/Maybe Not</th>
<th>Very Likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7</td>
</tr>
</tbody>
</table>

Please explain why or why not?

I probably wouldn't play the game since it takes too much time to look through the whole catalog. I usually know what I want and go right to it.

This question has a missing value since the open-ended part was answered but no answer appears on the original Likert scale. Based on the open-ended answer, we can assign a value of 2 to the question since it indicates a general unwillingness to play the game.
2) Develop a codebook for the first seven questions in the questionnaire constructed Question 2 of Chapter 10.

Coding involves the assignment of a code to represent a specific response to a specific question along with the data record and column position that code will occupy. It is the guidebook for translating information from the questionnaire into the computer for data analysis. The general rules to follow, as outlined in the text, are -

1. The respondent code and the record number should appear on each record in the data. The following additional codes should be included for each respondent: project code, interviewer code, date and time codes, and validation code.

2. Fixed field codes are highly desirable. This implies that the number of records for each respondent should be the same and the same data should appear in the same column(s) for all respondents.

3. If possible, standard codes should be used for missing data. For example, a code of 9 could be used for a single column variable, 99 for a double column variable and so on. Note that the missing value codes should be distinct from the codes assigned to the legitimate responses.

4. Coding of structured questions requires assigning codes for specific responses to each question and specifying the appropriate record and column(s) in which the response codes are to appear.

5. In questions which permit multiple responses, each possible response option should be assigned a separate column. Multipunches, where multiple responses are punched in the same column, should be avoided.

6. The coding of unstructured or open-ended questions requires that codes be developed and assigned to the responses found in the verbatim answers on the questionnaires. The development of the codes has to wait until the completed questionnaires are received from the field. The following guidelines are suggested for coding unstructured questions and questionnaires in general.

   a. Category codes should be mutually exclusive and collectively exhaustive.
b. Category codes should be assigned for critical issues even if no one has mentioned them.

c. Data should be coded to retain as much level of detail as is feasible.

Note how these rules were followed in the codebook below.

<table>
<thead>
<tr>
<th>Column Number</th>
<th>Variable Number</th>
<th>Variable Name</th>
<th>Question Number</th>
<th>Coding Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 3</td>
<td>1</td>
<td>Respondent ID</td>
<td></td>
<td>(001 to 890 add leading zeros as necessary)</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>Record Number</td>
<td></td>
<td>1 (Same for all respondents)</td>
</tr>
<tr>
<td>5 - 6</td>
<td>3</td>
<td>Project Code</td>
<td></td>
<td>1 (Same for all respondents)</td>
</tr>
<tr>
<td>7 - 8</td>
<td>4</td>
<td>Interview Code</td>
<td></td>
<td>as coded on the questionnaire</td>
</tr>
<tr>
<td>9 - 14</td>
<td>5</td>
<td>Date Code</td>
<td></td>
<td>as coded on the questionnaire</td>
</tr>
<tr>
<td>15 - 20</td>
<td>6</td>
<td>Time Code</td>
<td></td>
<td>as coded on the questionnaire</td>
</tr>
<tr>
<td>Question Number</td>
<td>Description</td>
<td>Code Options</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>--------------------------------------------------</td>
<td>------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21 - 22</td>
<td>Validation Code</td>
<td>as coded on the questionnaires</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23 - 24</td>
<td>BLANK</td>
<td>leave these columns blank</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Receive catalogs</td>
<td>Yes =1, No =0, Missing =9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26 - 27</td>
<td>Which catalogs received</td>
<td>Gucci =10, None =0, Other =01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Catalogs have games?</td>
<td>Yes =1, No =0, Missing =9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Play games?</td>
<td>Yes =1, No =0, Missing =9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Rating on Fun-Dull</td>
<td>For 5a thru 5d punch the number of the box checked</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Rating on Sophisticated-Simple</td>
<td>5b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>Rating on Valuable-Not Valuable</td>
<td>5c</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>Rating on Good time use/Not good</td>
<td>5d</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>Rating on image</td>
<td>6a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>Rating on likely to buy</td>
<td>6b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>Rating on save money</td>
<td>6c</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>Rating on enjoyment</td>
<td>6d</td>
<td></td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>Rating on winning</td>
<td>6e</td>
<td></td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>Rating on savings</td>
<td>6f</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>Rating of catalog: Help-bother</td>
<td>7a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>Rating on catalog: Informative-not informative</td>
<td>7b</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Gucci - 40
3) Suppose the results Gucci obtains from its survey are biased in terms of income level, with poor people underrepresented in the sample. If the national and sample percentages are as given below for the various classes of income level, what weights would you use to transform the data?

Weights can be determined by dividing the population percentage by the sample percentage.

<table>
<thead>
<tr>
<th>Income Level</th>
<th>Sample Percent</th>
<th>Population Percent</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. $10,000 or less</td>
<td>5%</td>
<td>10%</td>
<td>2</td>
</tr>
<tr>
<td>2. $10,001 to 20,000</td>
<td>5%</td>
<td>20%</td>
<td>4</td>
</tr>
<tr>
<td>3. $20,001 to 30,000</td>
<td>25%</td>
<td>30%</td>
<td>1.2</td>
</tr>
<tr>
<td>4. $30,001 to 40,000</td>
<td>40%</td>
<td>20%</td>
<td>0.5</td>
</tr>
<tr>
<td>5. $40,001 to 60,000</td>
<td>15%</td>
<td>15%</td>
<td>1</td>
</tr>
<tr>
<td>6. $60,001 and over</td>
<td>10%</td>
<td>5%</td>
<td>0.5</td>
</tr>
</tbody>
</table>

CHAPTER 15
1) Suppose you administered the survey designed in Chapter 10, and you collected data from 250 respondents (see Appendix for details). Run the following analyses on the data and draw conclusions from the results obtained.

a. Run descriptive statistics and obtain frequency distributions for all variables. Interpret the results.

The descriptive statistics give us an indication of the underlying distributions of the variables and give us an initial indication to the attitudes and impressions the respondents have toward carpeting. Thus, they are useful for suggesting further detailed analyses be conducted. Importantly, we have enough degrees of freedom (250 in this case) for our analyses. The
following initial observations are noted. The percentage of respondents who agree with each statement are listed in parentheses.

Q1 227 respondents received a catalog in the mail (91%)
Q2 51% of respondents are currently receiving a Gucci catalog
Q3 76% of respondents have received catalogs with promotional games
Q4 76% have played promotional games in catalogs
Q5a 68% find promotional games to be dull (responses 5 - 7)
Q5b Most respondents tend to view promotional games as simplistic rather than sophisticated (60%) (responses 5 - 7)
Q5c Promotional games are not perceived to be valuable (82%) (responses 5 - 7)
Q5d Though most people do not view promotional games as worth their time (55%) (responses 5 - 7), a notable percentage do (37%) (responses 1-3)
Q6a Most respondents believe promotional games add to the image of the magazine (65%) (responses 5 - 7)
Q6b Most respondents are likely to purchase from a catalog which has a game in it (90%) (responses 5 - 7)
Q6c Games are viewed as saving money when shopping (84%) (responses 5 - 7)
Q6d Games are generally played for enjoyment (75%) (responses 5 - 7)
Q6e Most people play games because they like to win (60%) (responses 5 - 7)
Q6f Respondents view it as important for games to provide savings (73%) (responses 5 - 7)
Q7a Most respondents believe promotional games are more of a bother than a help (66%) (responses 5 - 7)
Q7b 40% of the respondents believe mail order catalogs are informative (responses 1 - 3) whereas 49% believe they are not (responses 5 - 7)
Q7c 42% of the respondents believe shopping from mail order catalogs is convenient (responses 1 - 3) whereas 40% believe it is not (responses 5 - 7)
Q7d Most respondents believe shopping from mail order catalogs is expensive (73%) (responses 5 - 7)
Q7e 55% of the respondents believe shopping from a catalog is easy (responses 1 - 3) whereas 40% believe it is difficult (responses 5 - 7)
Q7f Most respondents believe that shopping from mail order catalogs is not advisable (73%) (responses 5 - 7)
Q8 Almost all respondents have heard of Gucci (98%)
Q9 Approximately half of the respondents have received Gucci catalogs in the mail (52%)
Q10 52% of the respondents have looked through a Gucci catalog. This is probably the same 52% as in Q9

Q11 42% of all respondents have purchased something from a Gucci catalog. This suggests 81% of those who have received a catalog have purchased something from it

Q12a Two groups of respondents exist: 44% perceive Gucci to be expensive (responses 1 - 3) while 48% view Gucci as inexpensive (responses 5 - 7)

Q12b Two groups of respondents exist: 43% perceive Gucci to be sophisticated (responses 1 - 3) while 42% view Gucci as common (responses 5 - 7)

Q12c Most respondents perceive Gucci to be high status (57%) (responses 1 - 3)

Q12d Only 29% of respondents perceive Gucci to be of top quality (responses 5 - 7)

Q13a The catalog is attention grabbing (75%) (responses 5 - 7)

Q13b The Gucci catalog is fun to look at (56%) (responses 5 - 7)

Q13c The Gucci catalog is seen to correspond with the Gucci image (73%) (responses 5 - 7)

Q13d The Gucci catalog as showing quality products (88%) (responses 5 - 7)

Q13e Respondents see the Gucci catalog as being fashionable (69%) (responses 5 - 7)

Q13f The respondents see the Gucci catalog as easy to place an order from (64%) (responses 5 - 7)

Q14a Respondents see the Gucci catalog game as being fun to play (65%) (responses 5 - 7)

Q14b Respondents see the Gucci catalog game as eye-catching (80%) (responses 5 - 7)

Q14c Respondents see the Gucci catalog game as adding to the appeal of the catalog (72%) (responses 5 - 7)

Q14d Respondents see the Gucci catalog game as not impacting their decision to buy from the catalog (81%) (responses 1 - 3)

Q14e Respondents see the Gucci catalog game as right for Gucci (73%) (responses 5 - 7)

Q14f Respondent's intention to purchase seems to be unaffected by the use of a 900 number (83%) (responses 5 - 7)

Q15 A large group of consumers exist who will likely play the game (69%) (responses 5 - 7)

Q16a Many respondents will play any game in any catalog (61%) (responses 5 - 7)

Q16b Most respondents intend to look through the catalogs they receive (80%) (responses 5 - 7)

Q16c Most respondents intend to order goods from a catalog (70%) (responses 5 - 7)

Q16d Ordering from a computer voice response system is okay (67%) (responses 5 - 7)

Q17 Respondents tended to favor shopping at retail stores (165 respondents ranked it #1) over mail order (85 respondents ranked it #1) and phone order (0 respondents ranked it #1)
b. Determine if the catalogs received, playing promotional games, awareness of Gucci, receiving Gucci catalogs, looking through Gucci catalogs and purchasing from a Gucci catalog are related to any of the demographic variables. If results are poor, you may have to create dummy variables in order to obtain valid results.

In the initial cross tab results, we note that more than 20% of the cells have expected cell counts of 5 or less for analyses involving MARRIED, AWARENESS, CATREC with ADDRESS, and CATREC with INCOME thus making these analyses suspect. As such, we must combine variables through the use of dummy variables and rerun the analysis. However, in the case of AWARENESS, we note that the distribution of AWARENESS is highly nonuniform and bivariate [5 not aware of Gucci; 245 aware of Gucci], thus no recombination is possible which can improve the analysis. As such, we drop AWARENESS from the crosstab. The recombination used for the other variables is shown below. One can think of these recodings as enabling a merger of two (or more) rows or columns in the matrix.

<table>
<thead>
<tr>
<th>Original Variables</th>
<th>New Variable</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income=0;</td>
<td>Income=0</td>
<td>$20K and less</td>
</tr>
<tr>
<td>Income=10000</td>
<td>Income=1</td>
<td>$20K to $40K</td>
</tr>
<tr>
<td>Income=100</td>
<td>Income=2</td>
<td>$40K or more</td>
</tr>
<tr>
<td>Address=0;</td>
<td>Address2=0</td>
<td>Eastern USA</td>
</tr>
<tr>
<td>Address=1000</td>
<td>Address2=1</td>
<td>Non-USA</td>
</tr>
<tr>
<td>Address=1</td>
<td>Address2=10</td>
<td>Western USA</td>
</tr>
<tr>
<td>Address=10</td>
<td>Address2=100</td>
<td>MidWest USA</td>
</tr>
<tr>
<td>Address=100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This recombination makes all crosstabs interpretable since the cells with expected frequency less than 5 is < 20% in all analyses.

The first observation is that MARRIED and FAMILY have no relationship to any of the non-demographic variables: their resulting Chi-Square values are insignificant. SEX is also largely unrelated to the variables. It only shows a significant relationship with past purchases from a Gucci catalog. Men do not purchase goods from Gucci catalogs, while approximately 52% of the women do. It seems that Gucci sales are heavily affected by women. All other demographic variables are significant with the non-demographic variables.

For CATREC (Catalogs Received) and AGE, we see that the crosstab is significant (Chi-Square = 201.07; p=.000), indicating that there is a degree of association between the catalogs one
now receives and age. An examination of the matrix reveals that younger people tend to receive no catalogs, and that Gucci catalogs are especially prominent among respondents of ages 25-40 and 60+.

CATREC and EDUCATION is also highly significant (Chi-Square = 201.07; p=.000) indicating that there is a degree of association between the catalogs currently received and level of education. The matrix reveals that Gucci is most popular with high school grads and those with some college, but college grads receive other catalogs and those with less than high school generally receive no catalogs.

CATREC and ZIP code (ZIP being modified as above) is significant (Chi-Square = 203.29; p=.000), indicating that there is a degree of association between the catalogs received and the region one lives in. The matrix reveals that respondents in the Midwest tend to receive Gucci catalogs, whereas other regions are relatively unpenetrated by Gucci.

CATREC and Income are also significant (Chi-Square = 200.13; p=.000) indicating that there is a degree of association between the catalogs received and the income of the respondents. The matrix reveals that Gucci is received by middle income families ($20K-$40K) whereas other magazines are received by more wealthy families ($40K+). Poorer families (<$20K) tend to receive no magazines.

RECEIPT (Have you received a Gucci catalog?) is significant for AGE, EDUCATION, ADDRESS, and INCOME. The results are summarized in the table below.

<table>
<thead>
<tr>
<th>Crosstab</th>
<th>Chi-Square</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>RECEIPT - AGE</td>
<td>250.00</td>
<td>.000</td>
</tr>
<tr>
<td>RECEIPT - EDUCATION</td>
<td>250.00</td>
<td>.000</td>
</tr>
<tr>
<td>RECEIPT - ADDRESS</td>
<td>119.49</td>
<td>.000</td>
</tr>
<tr>
<td>RECEIPT - INCOME</td>
<td>250.00</td>
<td>.000</td>
</tr>
</tbody>
</table>

Thus, the interpretation is that young respondents (<40) do not receive Gucci catalogs and those over 40 do; respondents with less than a college education have not received a Gucci catalog whereas only those with at least some college education do; respondents in the West and Midwest USA and non-USA residents have received Gucci catalogs in the past (Gucci has not penetrated the east coast); and Gucci catalogs have been received by households with incomes above $30K, but not by households with incomes below $30K.

LOOK (Have you looked through a Gucci catalog?) is significant for AGE, EDUCATION, ADDRESS, and INCOME. The results are summarized in the table below.

<table>
<thead>
<tr>
<th>Crosstab</th>
<th>Chi-Square</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOOK - AGE</td>
<td>250.00</td>
<td>.000</td>
</tr>
<tr>
<td>LOOK - EDUCATION</td>
<td>250.00</td>
<td>.000</td>
</tr>
<tr>
<td>LOOK - ADDRESS</td>
<td>119.49</td>
<td>.000</td>
</tr>
</tbody>
</table>
Thus, the interpretation for having looked at Gucci catalogs is identical to having received Gucci catalogs. That is, Gucci catalogs are read by people over 40, with at least some college education, living in the West and Midwest USA and non-USA, and earning incomes above $30K.

PURCH (Have you ever purchased something from a Gucci catalog?) is significant for AGE, EDUCATION, ADDRESS, and INCOME. The analysis results are summarized in the table below.

<table>
<thead>
<tr>
<th>Crosstab</th>
<th>Chi-Square</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>PURCH - AGE</td>
<td>173.37</td>
<td>.000</td>
</tr>
<tr>
<td>PURCH - EDUCATION</td>
<td>173.37</td>
<td>.000</td>
</tr>
<tr>
<td>PURCH - ADDRESS</td>
<td>62.84</td>
<td>.000</td>
</tr>
<tr>
<td>PURCH - INCOME</td>
<td>173.41</td>
<td>.000</td>
</tr>
</tbody>
</table>

Thus, the interpretation is those who have purchased goods from a Gucci catalog tend to be over 40, with at least some college education, living in the West and Midwest USA and outside the USA, and earning more than $30K per year.
c. Conduct a one-way analysis of variance to see if there is any difference in responses to the demonstration catalog shown (Q13) between those who receive catalogs and those who do not. If differences exist, determine if differences also exist between those who receive Gucci catalogs, those who receive other catalogs and those who receive no catalogs.

The one-way analysis of variance allows us to determine if significant differences exist between groups of the dependent variable (receiving a catalog) based on responses to the independent variable (responses to the demonstration catalog). Conversely, the variables serving as the dependent or independent variables can be swapped in a subsequent analysis. The test computes an F statistic which, if significant, indicates that differences in the two groups on the variable in question are statistically significant.

In this case, all of the ANOVAs are statistically significant to p=.000. The actual F statistics (1 and 248 degrees of freedom) are given below. The implication is that for all of the responses on Q13, differences exist between those who receive catalogs and those who don't. Specifically, if we examine the group means, we notice that those who receive catalogs find the demonstration catalogs to be more attention grabbing, more fun to look at, more consistent with the Gucci image, more full of quality products, more fashionable, and more easy to place an order.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>F VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention grabbing</td>
<td>82.128</td>
</tr>
<tr>
<td>Fun to look at</td>
<td>65.927</td>
</tr>
<tr>
<td>Matches Gucci image</td>
<td>40.821</td>
</tr>
<tr>
<td>Shows quality products</td>
<td>49.623</td>
</tr>
<tr>
<td>Fashionable</td>
<td>80.063</td>
</tr>
<tr>
<td>Easy to place order</td>
<td>48.419</td>
</tr>
</tbody>
</table>

Since differences do exist here, we run a one-way ANOVA on Q2 with Q13. In this case, again, all analyses are significant to p = .000. The interpretation is that on each of the variables of Q13, significant differences exist between the three groups of Q2. However, noticing the means of the groups, we find the greatest difference is between group 0 (receives no catalog) and groups 1 and 2. Thus, these results simply parallel our early result since they only indicate that those who receive catalogs differ from those who don't. The means of group 1 and group 2 tend to be very similar. As such, there may be no appreciable difference between those who receive Gucci catalogs and those who receive other catalogs.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>F VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention grabbing</td>
<td>148.198</td>
</tr>
<tr>
<td>Fun to look at</td>
<td>143.147</td>
</tr>
</tbody>
</table>
To test this hypothesis, another ANOVA is run comparing Q2 only on groups 1 and 2. In this case, none of the results are significant at the .05 level. This indicates that there is no significant difference between those who receive Gucci catalogs and those who receive other catalogs. The only differences in ratings of the demonstration catalog exist between those who do not receive catalogs and those who do. Those who receive catalogs tend to evaluate the demonstration catalogs higher on all attributes.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>F VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention Grabbing</td>
<td>1.957</td>
</tr>
<tr>
<td>Fun to Look At</td>
<td>0.005</td>
</tr>
<tr>
<td>Matches Gucci Image</td>
<td>2.140</td>
</tr>
<tr>
<td>Shows Quality Products</td>
<td>1.047</td>
</tr>
<tr>
<td>Fashionable</td>
<td>3.632</td>
</tr>
<tr>
<td>Easy to Place Order</td>
<td>0.107</td>
</tr>
</tbody>
</table>

**CHAPTER 17**

d. Regress each of the four dimensions of promotional games (Q5) on the respondents attitudes toward playing promotional games (Q6).

This regression is intended to learn which attitudes related to promotional games are significant in explaining each of the four theoretical attributes of promotional games. The analysis proceeds as in the previous question, so only the results and interpretation will be given here.

**Fun**

\[ F = 398.26 \quad p = .000 \]

\[ R^2 = .93 \]

\[ \text{Fun} = -.1459 \ \text{Savecat} + .0116 \ \text{Promag} + .6800 \ \text{Gamejoy} + .0776 \ \text{Buygame} + .3533 \ \text{Gamewin} - .0002 \ \text{Gamesav} + .1034 \]

Significant T statistic - Gamejoy, Gamewin

Hence, Gamejoy and Gamewin are the most important variables in the equation. The enjoyment of the game and the thrill of winning the game influence the perception of the game as being fun.
Sophistication

\[ F = 100.14 \quad p = .000 \]
\[ R^2 = .77 \]
\[ \text{Fun} = .1480 \text{Savecat} + .8167 \text{Promag} + .2986 \text{Gamejoy} + .0347 \]
\[ \text{Buygame} - .2581 \text{Gamewin} - .1731 \text{Gamesav} - .1540 \]

Significant T statistic - Promag, Gamejoy

Hence, Promag and Gamejoy are the most important variables in explaining Sophistication. The effect of promotional games on the image of the magazine and the enjoyment derived from playing the game impact the perception of sophistication of the game.

Value

\[ F = 263.88 \quad p = .000 \]
\[ R^2 = .90 \]
\[ \text{Value} = .3916 \text{Savecat} - .0061 \text{Promag} + .3078 \text{Gamejoy} + .1229 \]
\[ \text{Buygame} - .3435 \text{Gamewin} + .4501 \text{Gamesav} + .0387 \]

Significant T statistic - Savecat, Gamejoy, Gamesav, Gamewin

Hence, Savecat, Gamejoy, Gamesav, Gamewin are the most important variables in explaining Value. The savings one gains from a game, the enjoyment one derives, the money one saves in shopping, and the excitement in winning all influence the perception of a game as valuable.

Time

\[ F = 280.17 \quad p = .000 \]
\[ R^2 = .90 \]
\[ \text{Time} = .0337 \text{Savecat} + .8817 \text{Promag} + .0893 \text{Gamejoy} + .1190 \]
\[ \text{Buygame} - .1587 \text{Gamewin} - .0915 \text{Gamesav} - .4499 \]

Significant T statistic - Promag

Hence, Promag is the most important variable in explaining variations in Time. The effect of promotional games on magazines makes it worth a reader's time to play the game.

Thus, each of the dimensions of promotional games is related to different attitudes toward playing games.
e. Run a discriminant analysis on CATREC (Q1), the catalogs currently received, using Q6 (opinions on playing games in catalogs) as the independent variables. Then run a discriminant analysis on CATREC using Q7 (evaluations of company catalogs) as the independent variables.

This analysis allows us to distinguish the three types of catalogs received based on the attitudes one holds toward playing games in catalogs. Discriminant analysis produces functions of the independent variables which can be used to assign scores to respondents by multiplying their responses on Q6 by the weights produced from the analysis. Discriminant analysis will produce discriminant scores for each group (e.g., receives Gucci catalogs, receives other catalogs, receives no catalogs) such that the groups are maximally distinguishable and indicate which of the independent variables best discriminate between the groups.

The analysis can be conducted in one of two ways. Either all of the variables can be automatically entered into the discriminant function or a stepwise procedure can be used in which only variables which are significant in explaining variation between the groups are entered. In this case, a stepwise procedure is being used.

The stepwise selection procedure used is to include the variable which minimizes Wilk's lambda. The summary table indicates that the stepwise procedure entered two variables for two functions: PROMAG and BUYGAME. Both significantly discriminate between the groups. The resulting discriminant function is summarized below. With both functions in the equation, Wilk's lambda is .8035 which translates into a Chi-Square statistic of 40.80. This statistic, with four degrees of freedom, is significant to p=.000. After function one is removed, the Chi-Square falls to 1.666 with 1 degree of freedom and is no longer significant at the 5% level (p=.197). This indicates that function 1 is most important in discriminating between the groups of CATREC. This fact is confirmed by noticing that function 1 accounts for 96.3% of the variance in the data.

<table>
<thead>
<tr>
<th>FCN</th>
<th>EIGEN VALUE</th>
<th>% OF VAR EXPLAINED</th>
<th>AFTER FCN</th>
<th>WILK'S LAMBDA</th>
<th>CHI SQUARE</th>
<th>SIG</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.2335</td>
<td>96.30</td>
<td>0</td>
<td>.8035</td>
<td>40.80</td>
<td>.000</td>
</tr>
<tr>
<td>2</td>
<td>.0090</td>
<td>3.70</td>
<td>1</td>
<td>.9911</td>
<td>1.67</td>
<td>.197</td>
</tr>
</tbody>
</table>

The standardized canonical discriminant function coefficients for the two functions are listed below. Only two variables were entered during the discriminant analysis (PROMAG and BUYGAME). The magnitude of the coefficients indicates that function 1 is most heavily influenced by PROMAG whereas function 2 is most heavily influenced by BUYGAME. The structure matrix confirms this result since PROMAG is highly correlated with function 1 while BUYGAME (and all other variables) is more highly correlated with function 2. Hence, function 1, the most influential function, is based on the perception of the influence promotional games have...
on the catalogs. This perception should be considered key in describing consumers by the catalogs they receive. Consumers who receive no catalogs (Group 1) tend to be low on function 1; those who receive other catalogs (Group 2) tend to be high on function 1; and those who receive Gucci catalogs (Group 3) are in the middle of the other two groups. Those who receive no catalogs tend to believe that promotional games do not add to the image of a magazine, those who receive other catalogs tend to believe they do, and Gucci catalog recipients tend to have a slightly negative evaluation of promotional games in catalogs.

<table>
<thead>
<tr>
<th>STD DIS</th>
<th>STRUCTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fcn COEFF.</td>
<td>MATRIX</td>
</tr>
<tr>
<td>PROMAG</td>
<td>Fcn 1</td>
</tr>
<tr>
<td>BUYGAME</td>
<td>.9721</td>
</tr>
<tr>
<td></td>
<td>.2352</td>
</tr>
</tbody>
</table>

Although the test of equivalence for the group covariance matrices using Box’s M test shows that the covariance matrices are different from each other (Box’s M = 40.206, p = .00), this likely results from the increased sensitivity of the test when using a large sample (190 usable cases, here).

The overall classification by the functions is fair. The hit ratio is 62.63%. The function seems to be unable to classify members of group 1 successfully, an indication that another model may better discriminate the groups.

The analysis of the discriminant analysis of CATREC on Q7 is similar to the analysis presented above. The results and conclusions are presented here.

The summary table indicates that the stepwise procedure entered three variables in the functions: CATEASE, CATBUX, and CATHELP. Each individually, significantly discriminates between the three groups. The statistics for this model are listed below. Of the two functions, only function 1 is significant at the 5% level. Function 1 explains 98.77% of the variance in the CATREC.

<table>
<thead>
<tr>
<th>FCN</th>
<th>EIGEN VALUE</th>
<th>% of VAR EXPLAINED</th>
<th>AFTER FCN</th>
<th>WILK’S LAMBDA</th>
<th>CHI SQUARE</th>
<th>SIG</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.3234</td>
<td>98.77</td>
<td>0</td>
<td>.7526</td>
<td>52.86</td>
<td>.000</td>
</tr>
<tr>
<td>2</td>
<td>.0040</td>
<td>1.23</td>
<td>1</td>
<td>.9960</td>
<td>10.75</td>
<td>.688</td>
</tr>
</tbody>
</table>

The standardized canonical discriminant function coefficients for the two functions are listed below. The magnitude of the standardized coefficients indicates that CATEASE and CATINFO most heavily influence function 1, whereas CATBUX most heavily influences function 2. The
structure matrix however, shows that CATEASE is the only significant variable more highly correlated with function 1. CATBUX and CATHELP are more highly correlated with function 2. This is an indication that interpretation of coefficients is a tentative process because of the high correlations between the variables. We may conclude that function 1, the most influential function, is based on the perception of the ease of shopping by mail. This perception should be considered key in describing consumers by the catalogs they receive. Consumers who receive no catalogs (Group 1) tend to be high on function 1; those who receive other catalogs (Group 2) tend to be low on function 1; and those who receive Gucci catalogs (Group 3) are in the middle of the other two groups.

Those who receive no catalogs tend to believe shopping by mail is easy, those who receive other catalogs tend to believe ordering by mail is not easy, and Gucci catalog recipients tend to have a slightly positive evaluation of ordering via the mail.

<table>
<thead>
<tr>
<th></th>
<th>STD DIS</th>
<th>FCN COEFF.</th>
<th>STRUCTURE MATRIX</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fcn 1</td>
<td>Fcn 2</td>
<td>Fcn 1</td>
</tr>
<tr>
<td>CATEASE</td>
<td>.9421</td>
<td>.3451</td>
<td>.9447</td>
</tr>
<tr>
<td>CATBUX</td>
<td>-.8783</td>
<td>1.5942</td>
<td>-.2929</td>
</tr>
<tr>
<td>CATHELP</td>
<td>.7394</td>
<td>-.7071</td>
<td>-.1993</td>
</tr>
</tbody>
</table>

Although the test of equivalence for the group covariance matrices using Box’s M test shows that the covariance matrices are different from each other (Box’s M = 40.529, p = .00), this likely results from the increased sensitivity of the test when using a large sample (190 usable cases, here).

The overall classification by the functions is fair. The hit rate is 62.63%. The function seems to be unable to classify members of group 1 successfully, an indication that another model may better discriminate the groups.

f. Conduct a two group discriminant analysis to determine differences between those who receive catalogs and those who do not receive catalogs based on the ratings of the promotional game which the respondents have seen (Q14). Then run the analysis using Q16 (intentions to shop from catalogs).

Because these are two group discriminant analyses, only one function is calculated, however, the analysis is the same as above. Thus, a brief review of the results will be given here.
The summary table indicates that four variables were included in the functions by the stepwise procedure: EYE, NUMB900, BADVIBE, and FUNPLAY. The function is significant at the 5% level.

<table>
<thead>
<tr>
<th>FCN</th>
<th>EIGEN VALUE</th>
<th>% of VAR EXPLAINED</th>
<th>AFTER WILK'S LAMBDA</th>
<th>CHI SQUARE</th>
<th>SIG</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.5545</td>
<td>100.00</td>
<td>0</td>
<td>.6433</td>
<td>108.53</td>
</tr>
</tbody>
</table>

The standardized canonical discriminant function coefficients for the two functions are listed below. The magnitude of the standardized coefficients indicates that EYE most heavily influences the function. The structure matrix bears out this relationship since EYE is the most highly correlated variable with the discriminant scores based on the function. We may conclude that the function is based on the ability of the catalog to catch a reader's eye. This characteristic of the catalog should be considered key in describing consumers by the catalogs they receive. Consumers who receive catalogs (Group 1) tend to be low on the function, whereas those who don't receive catalogs (Group 2) tend to be low on the function. Those who receive catalogs tend to be attracted to the catalogs, but those who do not receive catalogs tend to not have their attention caught by them.

<table>
<thead>
<tr>
<th>STD DIS</th>
<th>STRUCTURE MATRIX</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCN COEFF.</td>
<td></td>
</tr>
<tr>
<td>EYE</td>
<td>.6111</td>
</tr>
<tr>
<td>FUNPLAY</td>
<td>.3287</td>
</tr>
<tr>
<td>NUMB900</td>
<td>.3635</td>
</tr>
<tr>
<td>BADVIBE</td>
<td>-.3704</td>
</tr>
</tbody>
</table>

Although the test of equivalence for the group covariance matrices using Box’s M test shows that the covariance matrices are different from each other (Box’s M = 30.656, p = .00), this likely results from the increased sensitivity of the test when using a large sample (250 usable cases, here).

The overall classification by the function is very good. The hit rate is 92.40%.

The summary table for the analysis of Q2 on Q16 is given below. It shows that three variables were included in the function by the stepwise procedure: INTPLAY, INTLOOK, ORDCOMP. The function is significant at the 5% level.

<table>
<thead>
<tr>
<th>FCN</th>
<th>EIGEN VALUE</th>
<th>% of VAR EXPLAINED</th>
<th>AFTER WILK'S LAMBDA</th>
<th>CHI SQUARE</th>
<th>SIG</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.3613</td>
<td>100.00</td>
<td>0</td>
<td>.7346</td>
<td>76.04</td>
</tr>
</tbody>
</table>
The standardized canonical discriminant function coefficients for the function is listed below. The magnitude of the standardized coefficients indicates that INTLOOK most heavily influences the function, followed by INTPLAY and then ORDCOMP. The structure matrix bears out this relationship since the correlations between the variables and the discriminant scores based on the function are ordered exactly as the standardized discriminant function coefficients. We may conclude that the function is largely based on the intention to look through the catalogs received and the intention to play games. These characteristics of the catalog should be considered key in describing consumers by the catalogs they receive. Consumers who receive catalogs (Group 1) tend to be positive on the function whereas those who don't receive catalogs (Group 2) tend to be low on the function. Those who receive catalogs tend to have an intention to look through the catalogs and to play games, but those who do not receive catalogs tend not to look through catalogs or play games.

<table>
<thead>
<tr>
<th>STD DIS FCN COEFF.</th>
<th>STRUCTURE MATRIX</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTLOOK .5311</td>
<td>.9129</td>
</tr>
<tr>
<td>INTPLAY .4141</td>
<td>.8755</td>
</tr>
<tr>
<td>ORDCOMP .2064</td>
<td>.7391</td>
</tr>
</tbody>
</table>

Although the test of equivalence for the group covariance matrices using Box’s M test shows that the covariance matrices are different from each other (Box’s M = 24.6, p = .00), this likely results from the increased sensitivity of the test when using a large sample (250 usable cases, here).

The overall classification by the function is very good. The hit rate is 91.20%.

The summary table for the analysis of Q1 on Q18, the psychographic items, indicates that six variables were included in the function by the stepwise procedure: MAGTV, TIP, COLLEGE, SWINGER, BUYNEW and WARRANT. The function is significant at the 5% level.

<table>
<thead>
<tr>
<th>FCN VALUE</th>
<th>% of VAR EXPLAINED</th>
<th>AFTER FCN</th>
<th>WILK'S LAMBDA</th>
<th>CHI SQUARE</th>
<th>SIG</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 .0832</td>
<td>100.00</td>
<td>0 .9232</td>
<td>19.75</td>
<td>.003</td>
<td></td>
</tr>
</tbody>
</table>

The standardized canonical discriminant function coefficients for the function is listed below. The magnitude of the standardized coefficients indicates that COLLEGE, MAGTV, and BUYNEW most heavily influence the function. However, the correlations between the variables alters their order in the structure matrix. Here, BUYNEW is most highly correlated with the discriminant.
function, while SWINGER AND WARRANT are second and third. We may conclude that the function is based on BUYNEW, the characteristic of buying new and different things. This characteristic of the catalog should be considered key in describing consumers by the catalogs they receive. The other traits are harder to assess because of their correlations, but it is likely SWINGER and WARRANT also have some influence. We will maintain a conservative interpretation and claim that consumers who receive catalogs (Group 1) tend to be positive on the function whereas those who don't receive catalogs (Group 2) tend to be low on the function. Those who receive catalogs tend to buy new and different things, but those who do not receive catalogs tend not to do so. A review of the three variables (BUYNEW, SWINGER, and WARRANT) suggests that consumers who are outgoing, fashion conscious, and adventurous tend to receive catalogs, whereas those who are more traditional do not.

<table>
<thead>
<tr>
<th></th>
<th>STD DIS</th>
<th>FCN COEFF.</th>
<th>STRUCTURE MATRIX</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAGTV</td>
<td>-1.259</td>
<td>.079</td>
<td></td>
</tr>
<tr>
<td>TIP</td>
<td>.030</td>
<td>.158</td>
<td></td>
</tr>
<tr>
<td>COLLEGE</td>
<td>1.635</td>
<td>.207</td>
<td></td>
</tr>
<tr>
<td>SWINGER</td>
<td>.493</td>
<td>.400</td>
<td></td>
</tr>
<tr>
<td>BUYNEW</td>
<td>1.116</td>
<td>.530</td>
<td></td>
</tr>
<tr>
<td>WARRANT</td>
<td>-.079</td>
<td>.349</td>
<td></td>
</tr>
</tbody>
</table>

The test of equivalence for the group covariance matrices using Box’s M test shows that the covariance matrices are reasonably the same (Box’s M = 18.74, p = .72).

The overall classification by the function is very good. The hit rate is 92.40%.

CHAPTER 19

g. Run a factor analysis of Q6 to determine any underlying dimensions upon which playing games are evaluated. Then factor analyze Q7 to determine any underlying dimensions related to attitudes toward catalogs.

Factor analysis reduces the number of independent variables to a set of underlying factors by grouping variables which are strongly correlated with one another. The results of factor analysis allow us to run other multivariate techniques using the factor scores instead of the original variables.
The analysis for Q6 has extracted three factors using principle components analysis (PCA). These three factors account for 95.9% of the variance in the data. Varimax rotation produces the following factor loadings:

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>FACTOR 1</th>
<th>FACTOR 2</th>
<th>FACTOR 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROMAG</td>
<td>-.025</td>
<td>.031</td>
<td>.999</td>
</tr>
<tr>
<td>BUYGAME</td>
<td>.904</td>
<td>.285</td>
<td>.011</td>
</tr>
<tr>
<td>GAMESAV</td>
<td>.958</td>
<td>.239</td>
<td>.001</td>
</tr>
<tr>
<td>GAMEJOY</td>
<td>.277</td>
<td>.947</td>
<td>.022</td>
</tr>
<tr>
<td>GAMEWIN</td>
<td>.276</td>
<td>.946</td>
<td>.030</td>
</tr>
<tr>
<td>SAVECAT</td>
<td>.937</td>
<td>.231</td>
<td>.049</td>
</tr>
</tbody>
</table>

Variables loading high on factor 1 represent savings associated with games, thus this factor represents the economic benefits derived from games. Variables loading high on factor 2 represent motivations for playing games; it can be labeled motivation. PROMAG is the only variable loading on factor 3. It concerns the effect games have on the image of the magazine, and thus is labeled image. Thus, economic considerations account for the most variance in the data, motivation for playing games the second most, and concerns with image the third most. It is on these three dimensions that consumers tend to evaluate games.

The factor analysis of Q7 uncovers underlying factors in the evaluation of catalogs. PCA uncovers two factors which account for 93.7% of the variance in the data. Varimax rotation produces the following factor loadings.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>FACTOR1</th>
<th>FACTOR 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>CATHELP</td>
<td>.971</td>
<td>.088</td>
</tr>
<tr>
<td>CATINFO</td>
<td>.050</td>
<td>.974</td>
</tr>
<tr>
<td>CATCONV</td>
<td>.085</td>
<td>.920</td>
</tr>
<tr>
<td>CATBUX</td>
<td>.975</td>
<td>.095</td>
</tr>
<tr>
<td>CATEASE</td>
<td>-.083</td>
<td>-.971</td>
</tr>
<tr>
<td>CATADV</td>
<td>.977</td>
<td>.040</td>
</tr>
</tbody>
</table>

The variables loading on factor 1 tend to represent factors salient in evaluating magazines. Factor 2 consists of variables which represent the convenience associated with using a catalog. The first factor accounts for the most variance, thus, we can surmise that when evaluating catalogs, consumers weigh the key factors the most and then consider convenience.

h. Factor analyze Q14 and Q16 to see if there are any underlying dimensions in the attitudes toward the new Gucci promotional game and the intentions toward shopping from a catalog, respectively.
The analysis of Q14 extracts 2 factors using PCA which account for 73.8% of the variance in the data. After rotation (using Varimax) the factor loadings are:

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>FACTOR1</th>
<th>FACTOR2</th>
</tr>
</thead>
<tbody>
<tr>
<td>FUNPLAY</td>
<td>.747</td>
<td>.344</td>
</tr>
<tr>
<td>EYE</td>
<td>.757</td>
<td>.375</td>
</tr>
<tr>
<td>APPEAL</td>
<td>.916</td>
<td>-.010</td>
</tr>
<tr>
<td>BADVIBE</td>
<td>.061</td>
<td>.910</td>
</tr>
<tr>
<td>RIGHT</td>
<td>.918</td>
<td>-.021</td>
</tr>
<tr>
<td>NUMB900</td>
<td>.598</td>
<td>.405</td>
</tr>
</tbody>
</table>

These factors may be interpreted as follows. All variables except BADVIBE load on factor 1. Thus, this factor represents a general factor measuring overall appeal of the game, i.e., the game is fun to play, eye-catching, etc. BADVIBE is the only variable loading on factor 2. Thus, this factor measures the negative impact of the game on sales. Factor 1 accounts for the majority of the explained variance (57.9%), thus respondents primarily weigh the level of appeal of the game, then the negative impact of the game on buying something.

Q16 includes four items measuring intentions toward shopping from catalogs. The factor analysis reveals that these four items load on the same factor which accounts for 73.9% of the variance. The loadings are listed below.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>FACTOR1</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTPLAY</td>
<td>.882</td>
</tr>
<tr>
<td>INTLOOK</td>
<td>.881</td>
</tr>
<tr>
<td>INTORD</td>
<td>.838</td>
</tr>
<tr>
<td>ORDCOMP</td>
<td>.836</td>
</tr>
</tbody>
</table>

Thus, intentions toward shopping from catalogs are highly correlated with one another since the variables all load on the same factor. In addition, the high communalities (approximately .70) indicate that the variables share a high percentage of their variance with the other variables. Thus, this factor is a pure intention factor and no underlying dimensions exist for intentions.

**CHAPTER 20**

i. Factor analyze the psychographic items (Q18), save the factor scores, and cluster them using a non-hierarchical method. Save the cluster centers and conduct an ANOVA with intention toward shopping from a catalog in order to determine which cluster of respondents is the most likely to participate in the game.
The eleven psychographic items in Q18 allow us to uncover underlying psychological traits of the respondents. When factor analyzed, five factors emerge accounting for 94.8% of the variance.

The factor loadings are:

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>FAC 1</th>
<th>FAC 2</th>
<th>FAC 3</th>
<th>FAC 4</th>
<th>FAC 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAGTV</td>
<td>.938</td>
<td>-.201</td>
<td>-.145</td>
<td>-.036</td>
<td>-.053</td>
</tr>
<tr>
<td>TIP</td>
<td>-.190</td>
<td>-.129</td>
<td>.950</td>
<td>.067</td>
<td>.015</td>
</tr>
<tr>
<td>COLLEGE</td>
<td>.970</td>
<td>-.033</td>
<td>-.055</td>
<td>.004</td>
<td>.077</td>
</tr>
<tr>
<td>TODAY</td>
<td>-.224</td>
<td>.940</td>
<td>-.113</td>
<td>-.017</td>
<td>-.076</td>
</tr>
<tr>
<td>ADBAD</td>
<td>.973</td>
<td>-.112</td>
<td>-.087</td>
<td>-.003</td>
<td>.022</td>
</tr>
<tr>
<td>SWINGER</td>
<td>-.073</td>
<td>.986</td>
<td>-.035</td>
<td>.037</td>
<td>.027</td>
</tr>
<tr>
<td>BUYNEW</td>
<td>-.094</td>
<td>-.143</td>
<td>-.044</td>
<td>-.063</td>
<td>.923</td>
</tr>
<tr>
<td>WARRANT</td>
<td>.139</td>
<td>.102</td>
<td>.122</td>
<td>-.001</td>
<td>.927</td>
</tr>
<tr>
<td>ATTRACT</td>
<td>-.075</td>
<td>-.064</td>
<td>.041</td>
<td>.962</td>
<td>-.099</td>
</tr>
<tr>
<td>RELAX</td>
<td>-.057</td>
<td>-.019</td>
<td>.980</td>
<td>.111</td>
<td>.063</td>
</tr>
<tr>
<td>SPECIALS</td>
<td>.050</td>
<td>.088</td>
<td>.133</td>
<td>.961</td>
<td>.034</td>
</tr>
</tbody>
</table>

The factor loadings indicate that factor 1 measures a perceived sophistication in the respondent (went to college, magazines more interesting that TV, advertising insults intelligence). Underlying factor 2 is a carefree quality which allows one to spend for today and be a swinger. Factor 3 seems to measure tension or stress (can't relax, business is always on mind). Factor 4 seems to account for people who want to be fashionable and attractive. Finally, factor 5 seems to uncover an economic dimension. It can be seen to uncover a thrifty and pessimistic attitude toward shopping.

The respondents can be clustered on these factor scores in order to give us an indication of the sizes of the different psychographic segments in the market. A four cluster solution is demonstrated here. The final cluster centers for the five factor scores are:

<table>
<thead>
<tr>
<th>CLUSTER</th>
<th>FAC 1</th>
<th>FAC 2</th>
<th>FAC 3</th>
<th>FAC 4</th>
<th>FAC 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.266</td>
<td>-.603</td>
<td>-.244</td>
<td>-.279</td>
<td>-.090</td>
</tr>
<tr>
<td>2</td>
<td>-.187</td>
<td>-.397</td>
<td>1.188</td>
<td>1.563</td>
<td>-.080</td>
</tr>
<tr>
<td>3</td>
<td>-1.080</td>
<td>-.634</td>
<td>-.091</td>
<td>-.357</td>
<td>3.779</td>
</tr>
<tr>
<td>4</td>
<td>-.270</td>
<td>1.165</td>
<td>-.019</td>
<td>-.073</td>
<td>-.149</td>
</tr>
</tbody>
</table>

Thus, cluster 1 is high on factor 1 and low on factors 2, 3, and 5. Thus, they represent sophisticated, conservative people who are content in their current state in life. Cluster 2 is high on factors 3 and 4, thus they are tense, stressful people who are concerned with being attractive to others. Cluster 3 is high on factor 5 and low on factors 1, 2, and 4. They represent down-to-earth people who are conservative and guarded in their shopping habits. Finally, cluster 4 is high on factor 2 and low on factor 5. As such, they are carefree, fun-loving people who are liberal in their spending habits.
These four clusters represent different segment sizes. Cluster 1 has 132 members, cluster 2 has 29, cluster 3 has 7 and cluster 4 has 82. Thus, the largest segment accounting for 52.8% of the sample, are the sophisticated conservatives. The carefree, liberal spenders are the second largest accounting for 32.8% of the market.

We can use the cluster centers to run ANOVA in order to determine if there are systematic differences in the means of the clusters on intention toward shopping from catalogs (or any other variable). In this case, the results are disappointing since none of the one-way ANOVAs are significant. The implication is that all four segments identified by the clusters have similar intentions toward playing promotional games in catalogs and we can not use psychographic segmentation effectively as a marketing strategy.
CHAPETR 22

1) Prepare an executive summary of the results from the study. Specifically, answer the research questions which were posed at the beginning of the study.

The executive summary must be written very concisely, yet cover the problem, approach, research design, and primarily the significant findings from the research. A general rule of thumb is that it should not take more than one to two pages. The executive summary below is an example based on the analysis of chapters 15 through 21.

EXECUTIVE SUMMARY

This report has been compiled for Gucci Corp. in an effort to evaluate consumer reactions to the Lucky Numbers game being planned for inclusion in the Gucci catalog. The research was undertaken by contacting respondents in their homes to present them with a questionnaire on their opinions on catalogs, promotional games, and image of Gucci.

The results of the research indicate that consumers play games first and foremost for the potential savings a game provides, secondly for personal motives related to enjoyment, and lastly based on the image of the magazine. The more a game is enjoyed or one wins a game, the more fun it is perceived to be. The more it adds to the image of the catalog and the more it is enjoyed, the more sophisticated the game is perceived to be. The more savings it both actually offers and is perceived to offer, the more it is enjoyed; and the less likely it is one will win, the more valuable the game is perceived to be. Finally, the more the game adds to the image of the catalog, the more it is perceived as being worth the reader's time. Consumers tend to believe games add to the image of the catalog and a majority of respondents indicate a willingness to purchase from a catalog which has a game in it. Yet, consumers do not view games as valuable nor worth their time. Recipients of Gucci catalogs tend to have a slightly negative evaluation of games.

The Lucky Numbers game was evaluated by consumers along two dimensions, overall appeal and a negative reaction to games due to the association with selling products. The appeal of

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>F VALUE</th>
<th>SIGNIFICANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTPLAY</td>
<td>.237</td>
<td>.870</td>
</tr>
<tr>
<td>INTLOOK</td>
<td>1.720</td>
<td>.163</td>
</tr>
<tr>
<td>INTORD</td>
<td>1.926</td>
<td>.126</td>
</tr>
<tr>
<td>ORDCOMP</td>
<td>.042</td>
<td>.988</td>
</tr>
</tbody>
</table>
the game, however, was much more important than the effect of sales. The appeal was based on its ability to attract the reader's attention, on being fun to play, and adding to the appeal of the catalog. Overall, Lucky Numbers was evaluated positively by respondents with 69% of the respondents willing to play it. In addition, respondents indicated that neither the use of a 900 number, nor a computer voice system adversely impacts their intention to order, yet ordering over the phone is less preferred than shopping at retail stores or through mail order. Recipients of Gucci catalogs perceive ordering from catalogs to be easier than recipients of other catalogs.

The overall impression of Gucci was positive. The Gucci brand name is high on brand recognition (98%) and penetration of the magazines in the West and Midwest regions is good. The brand image, however, seems unclear on some dimensions. Confusion in the market centers on whether Gucci is expensive or inexpensive, and sophisticated or common. However, the market clearly perceives Gucci to be a high status name and associated with top quality products. All of these components of brand image increase with the age of the respondents and location in the West and Midwest regions, while it decreases as educational level and income increase.

Finally, it is recommended that Gucci expand coverage to the East coast. Those who receive catalogs tend to look through them and play games more than those who do not. They also tend to be less brand loyal.
CHAPTER 23
1) As mentioned in the Gucci scenario, the Japanese are especially fond of shopping by catalog for American products, since they have been able to save up to 30 or 40 percent on these items. Suppose Gucci wanted to expand into the Japanese market and wished to assess the feasibility of the Lucky Numbers game for Japanese consumers. Should Gucci conduct a marketing research study in Japan in a manner identical to the one used in the U.S.? If not, in what ways should they modify this study to evaluate Japanese consumers' responses to the Lucky Numbers game?

Gucci should not employ a marketing research study identical to the one used in the U.S. to Japan. Many modifications would have to be made. First, environmental factors impacting the marketing research problem should be identified. Then in light of these factors, the problem would have to be redefined, following the four steps: 1) Define the marketing research problem in terms of domestic environmental and cultural factors, 2) Define the marketing research problem in terms of foreign environmental and cultural factors, 3) Isolate the self-referent culture (SRC) influence on the problem and examine it carefully to see how it complicates the problem, and 4) Redefine the problem without the SRC influence and address it to the foreign market situation.

Next, the approach to the problem would have to be reformulated to reflect the environmental and cognitive influences on consumer behavior, as uncovered by reviewing relevant literature, secondary data, and conducting qualitative research to better define the problem. These discoveries would then suggest a mode of data collection that is both feasible and acceptable to the Japanese culture.

The type of data collection and the appropriate cultural influences will also affect the sampling design process, identification of the target population, and questionnaire design issues. Also, should field work be necessary, careful selection and training of the field force must occur.

Thus, all of the above factors and modifications must be taken into consideration when conducting a marketing research study to evaluate the use of promotional games to increase catalog readership in Japan.

CHAPTER 24
1) Name and describe three unethical behaviors that a marketing researcher might act upon in their handling of Gucci's research project.

Any three of the following is correct.
Abuse of Position
The researcher will normally have more expertise regarding marketing research than the marketing manager. If this is the case when Gucci hires a researcher to investigate the proposed catalog strategy, then opportunity exists for an abuse of power. The researcher should make every effort to follow correct research procedures, including using the correct and appropriate statistical techniques, and employing the most efficient and effective research method.

Unnecessary Research

The researcher has the obligation to perform the correct procedures, and actually conduct the research only if it is necessary. If the research is not necessary and/or the problem is not defined properly, the researcher should make this clear to the client. If the research question in the Gucci case could be solved with secondary data, it would be unethical for the researcher to conduct primary research.

Unqualified Researcher

In some cases the researcher does not have the necessary skills or technical expertise or does not have the necessary resources, such as time or manpower, to perform the desired research. The researcher should make these limitations known to the client.

Disclosure of Identity

The researcher is ethically bound not to reveal the client's identity to competitors, respondents, or any other sources without the expressed permission of the client. Anonymity should be observed before, during, and after the research has been conducted.

Nonconfidential Data

The data and results of research belong to the client. Gucci has every right to assume that the results and data gathered by the researcher will not be released to the competition, and will not be reused in subsequent research projects by the researcher without their expressed consent.

Misleading Presentations

The researcher should not lead the client (Gucci) to believe the results are more precise or complex than they really are. Results should be expressed in terms understood by the Gucci managers. Presenting incomplete research results and misrepresenting the results are also unethical.
2) Which stakeholder would be affected if Gucci printed misleading or inaccurate marketing research results in its new catalog?

The public would be negatively impacted by the misleading or incomplete research finding presented in the Gucci catalog. It is unethical for a firm to present incomplete representations of results, provide misleading statements about the results, or conduct biased research to deliberately obtain the desired results.