The Market Research Process

2

Keywords
Causal research • Descriptive research • Ethnographies • Exploratory research • Field experiments • Focus groups • Hypotheses • In-depth interviews • Lab experiments • Market segments • Observational studies • Projective techniques • Research design • Scanner data • Test markets

Learning Objectives
After reading this chapter, you should understand:

- How to determine a research design.
- The differences between, and examples of, exploratory research, descriptive research, and causal research.
- What causality is.
- The market research process.

2.1 Introduction

How do organizations plan for market research processes? In this chapter, we explore the market research process and various types of research. We introduce the planning of market research projects, starting with identifying and formulating the problem and ending with presenting the findings and the follow-up (see Fig. 2.1). This chapter is also an outline of the chapters to come.

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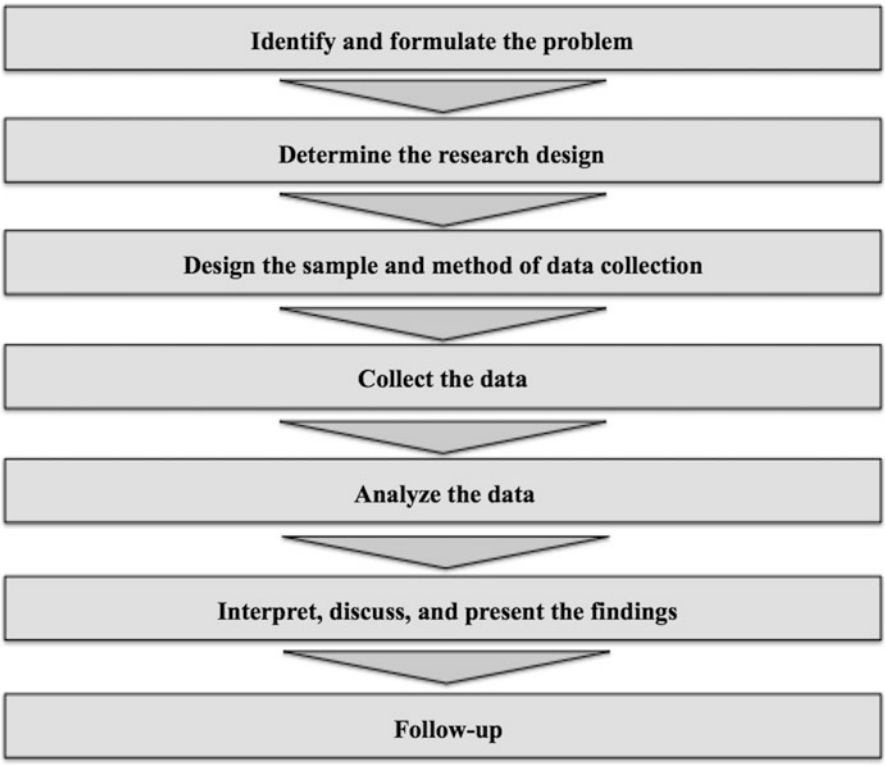


Fig. 2.1 The market research process

2.2 Identify and Formulate the Problem

The first step in setting up a market research process involves identifying and formulating the *research problem*. Identifying the research problem is valuable, but also difficult. To identify the "right" research problem, we should first identify the *marketing symptoms* or *marketing opportunities*. The marketing symptom is a problem that an organization faces. Examples of marketing symptoms include declining market shares, increasing numbers of complaints, or new products that consumers do not adopt. In some cases, there is no real problem, but instead a marketing opportunity, such as the potential benefits that new channels and products offer, or emerging market opportunities that need to be explored. Exploring marketing symptoms and marketing opportunities requires asking questions such as:

- Why is our market share declining?
- Why is the number of complaints increasing?
- Why are our new products not successful?
- How can we enter the market for 3D printers?
- How can we increase our online sales?

The research problems that result from such questions can come in different forms. Generally, we distinguish three *types of research problems*:

- ambiguous problems,
- somewhat defined problems, and
- clearly defined problems.

Ambiguous problems occur when we know very little about the issues that need to be solved. For example, ambiguity typically surrounds the introduction of radically new technologies or products. When Toyota planned to launch the Prius many years ago, critical, but little understood, issues arose, such as the features that were essential and even who the potential buyers of such a car were.

When we face somewhat defined problems, we know the issues (and variables) that are important for solving the problem, but not how they are related. For example, when an organization wants to export products, it is relatively easy to obtain all sorts of information on market sizes, economic development, and the political and legal system. However, how these variables impact the exporting success may be very uncertain.

When we face clearly defined problems, the important issues and variables, as well as their relationships, are clear. However, we do not know how to make the best possible choice. We therefore face the problem of how the situation should be optimized. A clearly defined problem may arise when organizations want to change their prices. While organizations know that increasing (or decreasing) prices generally leads to decreased (increased) demand, the precise relationship (i.e., how many units do we sell less when the price is increased by $1?) is unknown.

2.3 Determine the Research Design

The **research design** is related to the identification and formulation of the problem. Research problems and research designs are highly related. If we start working on an issue that has never been researched before, we seem to enter a funnel where we initially ask exploratory questions, because we as yet know little about the issues we face. These exploratory questions are best answered using an exploratory research design. Once we have a clearer picture of the research issue after our exploratory research, we move further into the funnel. Generally, we want to learn more by describing the research problem in terms of descriptive research. Once we have a reasonably complete picture of all the issues, it may be time to determine exactly how key variables are linked. We then move to the narrowest part of the funnel. We do this through causal (not *casual*!) research (see Fig. 2.2).

Each research design has different uses and requires the application of different analysis techniques. For example, whereas exploratory research can help formulate problems exactly or structure them, causal research provides exact insights into how variables relate. In Fig. 2.3, we provide several examples of different types of research, which we will discuss in the following paragraphs.

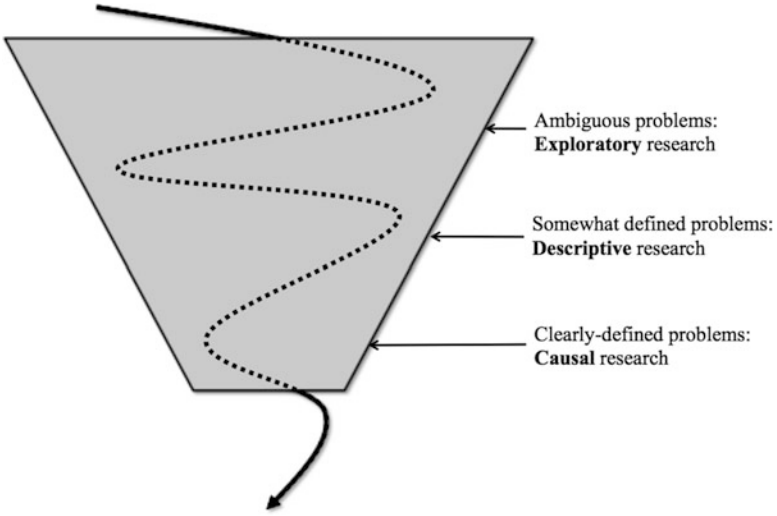


Fig. 2.2 The relationship between the marketing problem and the research design

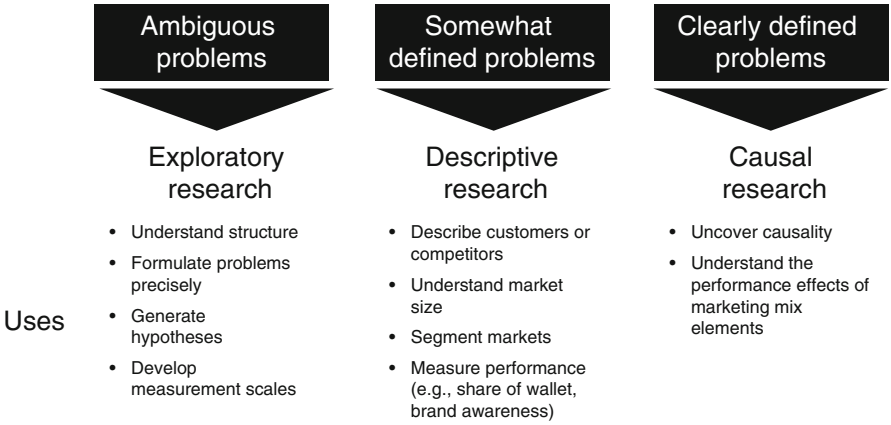


Fig. 2.3 Uses of exploratory, descriptive, and causal research

2.3.1 Exploratory Research

As its name suggests, the objective of **exploratory research** is to explore a problem or situation. As such, exploratory research has several key uses regarding the solving of ambiguous problems. It can help organizations formulate their problems exactly. Through initial research, such as interviewing potential customers, the opportunities and pitfalls may be identified that help determine or refine the

research problem. It is crucial to discuss this information with the client to ensure that your findings are helpful. Such initial research also helps establish priorities (what is nice to know and what is important to know?) and eliminate impractical ideas. For example, market research helped Toyota dispel the belief that people concerned with the environment would buy the Prius, as this target group has an aversion to high technology and lacks spending power.

2.3.2 Uses of Exploratory Research

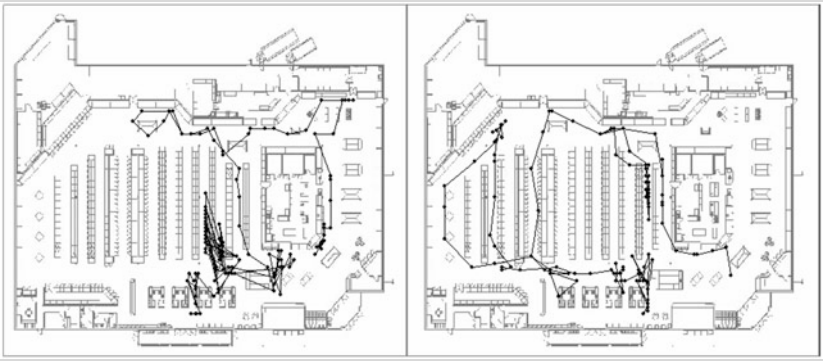
Exploratory research can be used to formulate problems precisely. For example, focus groups, in-depth interviews, projective techniques, observational studies, and ethnographies are often used to achieve this. In the following, we briefly introduce each technique, but provide more detailed descriptions in Chap. 4.

Focus groups usually have between 4 and 6 participants, who discuss a defined topic under the leadership of a moderator. The key difference between a depth interview and focus group is that focus group participants can interact with one another (e.g., "What do you mean by…?," "How does this differ from…."), thereby providing insight into group dynamics. **In-depth interviews** consist of an interviewer asking an interviewee several questions. Depth interviews allow probing on a one-to-one basis, which fosters interaction between the interviewer and the respondent. Depth interviews are required when the topic needs to be adjusted for each interviewee, for sensitive topics, and/or when the person interviewed has a very high status.

Projective techniques present people with pictures, words, or other stimuli to which they respond. For example, a researcher could ask what people think of BMW owners ("A BMW owner is someone who. . .") or could show them a picture of a BMW and ask them what they associate the picture with. Moreover, when designing new products, market researchers can use different pictures and words to create analogies to existing products and product categories, thus making the adoption of new products more attractive (Feiereisen et al. 2008).

Observational studies are frequently used to refine research questions and clarify issues. Observational studies require an observer to monitor and interpret participants' behavior. For example, someone could monitor how consumers spend their time in shops or how they walk through the aisles of a supermarket. These studies require a person, a camera or other tracking devices, such as radio frequency identification (RFID) chips, to monitor behavior. Other observational studies may comprise click stream data that track information on the web pages people have visited. Observational studies can also be useful to understand how people consume and/or use products. New technology is being developed in this area, for example, market research company Almax (also see Chap. 4) has developed the EyeSee Mannequin which helps observe who is attracted by store windows and reveals important details about customers, such as their age range, gender, ethnicity, and dwell time.

In the award-winning paper "An Exploratory Look at Supermarket Shopping Paths," Larson et al. (2005) analyze the paths individual shoppers take in a grocery store, which the RFID tags located on their shopping carts provide. The results provide new perspectives on many long-standing perceptions of shopper travel behavior within a supermarket, including ideas related to aisle traffic, special promotional displays, and perimeter shopping patterns. Before this study, most retailers believed that customers walked through the aisles systematically. Larson et al.'s (2005) research reveals this rarely happens.



Ethnography (or ethnographic studies) originate from anthropology. In ethnographic research, a researcher interacts with consumers over a period to observe and ask questions. Such studies can consist of, for example, a researcher living with a family to observe how they buy, consume, and use products. For example, the market research company BBDO used ethnographies to understand consumers' rituals. The company found that many consumer rituals are ingrained in consumers in certain countries, but not in others. For example, women in Colombia, Brazil, and Japan are more than twice as likely to apply make-up when in their cars, than women in other countries. Miele, a German whitegoods producer, used ethnographies to understand how people with allergies do their washing and developed washing machines based on the insights gathered (Burrows 2014).

Exploratory research can also help establish research priorities. What is important to know and what is less important? For example, a literature search may reveal that there are useful previous studies and that new market research is not necessary. Exploratory research may also lead to the elimination of impractical ideas. Literature searches, just like interviews, may again help eliminate impractical ideas.

Another helpful aspect of exploratory research is the generation of **hypotheses**. A hypothesis is a claim made about a population, which can be tested by using sample results. For example, one could hypothesize that at least 10% of people in

France are aware of a certain product. Marketers frequently suggest hypotheses, because they help them structure and make decisions. In Chap. 6, we discuss hypotheses and how they can be tested in greater detail.

Another use of exploratory research is to develop measurement scales. For example, what questions can we use to measure customer satisfaction? What questions work best in our context? Do potential respondents understand the wording, or do we need to make changes? Exploratory research can help us answer such questions. For example, an exploratory literature search may use measurement scales that tell us how to measure important variables such as corporate reputation and service quality.

2.3.3 Descriptive Research

As its name implies, **descriptive research** is all about describing certain phenomena, characteristics or functions. It can focus on one variable (e.g., profitability) or on two or more variables at the same time ("what is the relationship between market share and profitability?" and "how does temperature relate to the sale of ice cream?"). Descriptive research often builds on previous exploratory research. After all, to describe something, we must have a good idea of what we need to measure and how we should measure it. Key ways in which descriptive research can help us include describing customers, competitors, market segments, and measuring performance.

2.3.4 Uses of Descriptive Research

Market researchers conduct descriptive research for many purposes. These include, for example, describing customers or competitors. For instance, how large is the UK market for pre-packed cookies? How large is the worldwide market for cruises priced $10,000 and more? How many new products did our competitors launch last year? Descriptive research helps us answer such questions. Much data are available for descriptive purposes, particularly on durable goods and fast moving consumer goods. One source of such data are **scanner data**, which are collected at the checkout of a supermarket where details about each product sold are entered into a vast database. By using scanner data, it is, for example, possible to describe the market for pre-packed cookies in the UK.

Descriptive research is frequently used to define **market segments**, or simply segments. Since companies can seldom connect with all their (potential) customers individually, they divide markets into groups of (potential) customers with similar needs and wants. Firms can then target each of these segments by positioning themselves in a unique segment (such as Ferrari in the high-end sports car market). Many market research companies specialize in market segmentation; an example is Claritas, which developed a segmentation scheme for the US market called *PRIZM* (*Potential Ratings Index by Zip Markets*). PRIZM segments consumers along a multitude of attitudinal,

behavioral, and demographic characteristics; companies can use these segments to better target their customers. Segments have names, such as Up-and-Comers (young professionals with a college degree and a mid-level income) and Backcountry Folk (older, often retired people with a high school degree and low income).

Another important function of descriptive market research is to measure performance. Nearly all companies regularly track their sales across specific product categories to evaluate the performance of the firm, the managers, or specific employees. Such descriptive work overlaps with the finance or accounting departments' responsibilities. However, market researchers also frequently measure performance using measures that are quite specific to marketing, such as share of wallet (i.e., how much do people spend on a certain brand or company in a product category?) and brand awareness (i.e., do you know brand/company X?), or the Net Promotor Score, a customer loyalty metric for brands or firms (see Chap. 3 for more information).

2.3.5 Causal Research

Causal research is used to understand the relationships between two or more variables. For example, we may wish to estimate how changes in the wording of an advertisement impact recall. Causal research provides exact insights into how variables relate and may be useful as a test run to try out changes in the marketing mix. Market researchers undertake causal research less frequently than exploratory or descriptive research. Nevertheless, it is important to understand the delicate relationships between important marketing variables and the outcomes they help create. The key usage of causal research is to uncover *causality*. Causality is the relationship between an event (the cause) and a second event (the effect) when the second event is a consequence of the first. To claim causality, we need to meet the following four requirements:

- relationship between cause and effect,
- time order,
- controlling for other factors, and
- an explanatory theory.

First, the cause needs to be related to the effect. For example, if we want to determine whether price increases cause sales to drop, there should be a negative relationship or correlation between price increases and sales decreases (see Chap. 5). Note that people often confuse correlation and causality. Just because there is some type of relationship between two variables does not mean that the one caused the other (see Box 2.1).

Second, the cause needs to come before the effect. This is the time order's requirement. A price increase can obviously only have a causal effect on the sales if it occurred before the sales decrease.

Third, we need to control for other factors. If we increase the price, sales may go up, because competitors increase their prices even more. Controlling for other factors is difficult, but not impossible. In experiments, we design studies so that external factors' effect is nil, or as close to nil as possible. This is achieved by, for example, conducting experiments in labs where environmental factors, such as the conditions, are constant (controlled for). We can also use statistical tools that account for external influences to control for other factors. These statistical tools include an analysis of variance (see Chap. 6), regression analysis (see Chap. 7), and structural equation modeling (see end of Chap. 8).

Fourth, the need for a good explanatory theory is an important criterion. Without a theory, our effects may be due to chance and no "real" effect may be present. For example, we may observe that when we advertise, sales decrease. Without a good explanation of this effect (such as people disliking the advertisement), we cannot claim that there is a causal relationship.

Box 2.1 Correlation Does Not Automatically Imply Causation

Correlation does not automatically imply causality. For example, Fig. 2.4 plots US fatal motor vehicle crashes (per 100,000 people) against the harvested area of melons (in 1,000 acres) between 2000 and 2015.

Clearly, the picture shows a trend. If the harvested area of melons increases, the number of US fatal motor vehicle crashes increases. The resulting correlation of 0.839 is very high (we discuss how to interpret correlations in Chap. 5). While this correlation is the first requirement to determine causality, the story falls short when it comes to explanatory theory. What possible mechanism could explain the findings? This is likely a case of a *spurious correlation*, which is simply due to coincidence.

In the above situation, most people would be highly skeptical and would not interpret the correlation as describing a causal mechanism; in other instances, the situation is much less clear-cut. Think of claims that are part of everyday market research, such as "the new advertisement campaign caused a sharp increase in sales", "our company's sponsorship activities helped improve our company's reputation", or "declining sales figures are caused by competitors' aggressive price policies". Even if there is a correlation, the other requirements for causality may not be met. Causal research may help us determine if causality can be claimed.

(continued)

Box 2.1 (continued)

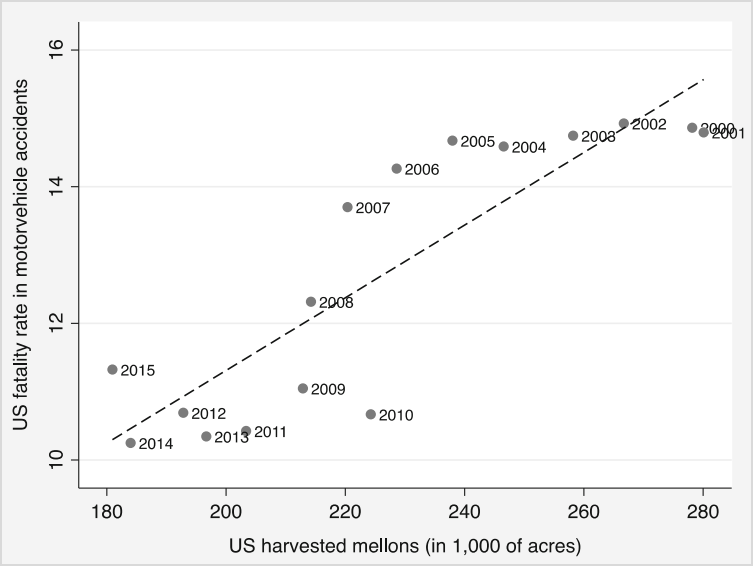


Fig. 2.4 Correlation and causation (the data were taken from the NHTSA Traffic Safety Facts, DOT HS 810780, and the United States Department of Agriculture, National Agricultural Statistics Service)

Some of these and other examples can be found in Huff (1993) or on Wikipedia. Furthermore, check http://www.tylervigen.com for more entertaining examples of spurious correlations—see also Vigen (2015).

http://en.wikipedia.org/wiki/Correlation_does_not_imply_causation

2.3.6 Uses of Causal Research

Experiments are a key type of causal research and come in the form of either lab or field experiments.

Lab experiments are performed in controlled environments (usually in a company or academic lab) to isolate the effects of one or more variables on a certain outcome. To do so, researchers impose a treatment (e.g., a new advertisement) that induces changes in one variable (e.g., the type of advertising appeal) and evaluate its impact on an outcome variable (e.g., product choice). **Field experiments** are like lab experiments in that they examine the impact of one or more variables on a certain outcome. However, field experiments are conducted in real-life settings (not set up in controlled environments), thus reducing (or even eliminating) plausible claims of causality (Gneezy 2017). On the plus side, their realism makes them attractive for market research purposes, as the observed effects can probably be generalized to similar settings. For example, isi (https://www.isi-goettingen.de/en), a German sensory market research company, regularly runs product acceptance tests in which consumers sequentially evaluate different products, interrupted by short breaks to neutralize their senses. These tests are traditionally run in sensory labs under controlled conditions. However, isi also runs field experiments in actual consumption environments. Figure 2.5 shows a photo of a field experiment the company ran in a coffeehouse to evaluate consumer ratings of different cappuccino products. We discuss experimental set-ups in more detail in Chap. 4.

Fig. 2.5 Field experiment

Field experiments are not always a good idea. In the city of Rotterdam, the local council tried to reduce bike accidents by turning the traffic lights at bike crossings at a very busy intersection green at the same time. While the idea was that bicyclists would pay more attention, it took less than a minute for two accidents to happen. Needless to say, the experiment was cancelled (see https://www.youtube.com/watch?v=QIsLSmbfaiQ, in Dutch only).

Test markets are a form of field experiment in which organizations in a geographically defined area introduce new products and services, or change the marketing mix to gauge consumer reactions. Test markets help marketers learn about consumer response, thus reducing the risks of a nationwide rollout of new products/services or changes in the marketing mix. For example, gps dataservice (http://www.gps-dataservice.de/en) runs several test markets for a series of major European retailers to evaluate the effect of treatments, such as new product launches, price changes, promotions, or product placements, on purchasing behavior. The company uses data from scanners, customer cards, and other sources (e.g., surveys, observations) to investigate their effects on sales. For example, *shelf tests* involve placing dummy packages in the usual shelves in selected stores, and determining the reactions to these new packages by means of shopper observations (e.g., eye or physical contact with the product; Fig. 2.6), surveys, and scanner data. In Chap. 4, we discuss test markets in more depth.

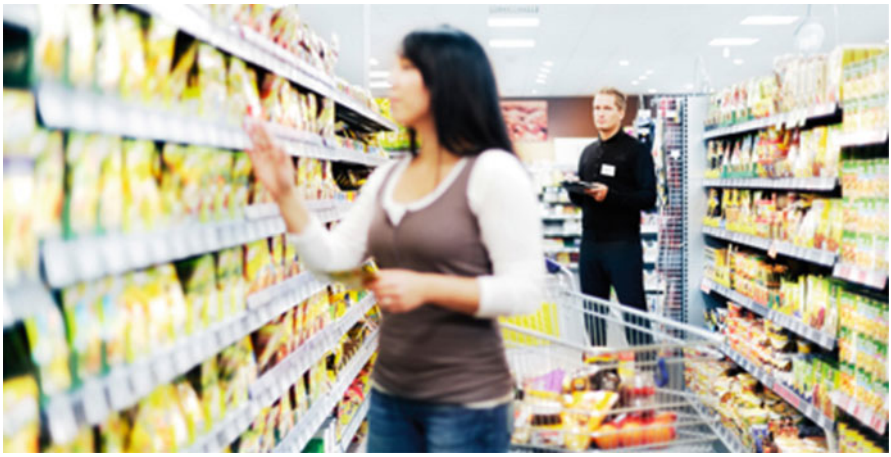


Fig. 2.6 Shelf test

2.4 Design the Sample and Method of Data Collection

Having determined the research design, we need to design a sampling plan and choose a data-collecting method. This involves deciding whether to use existing (secondary) data or to conduct primary research. We discuss this in more detail in Chap. 3.

2.5 Collect the Data

Collecting data is a practical, but sometimes difficult, part of the market research process. How do we design a survey? How do we measure attitudes toward a product, brand, or company if we cannot observe these attitudes directly? How do we get CEOs to respond? Dealing with such issues requires careful planning and knowledge of the marketing process. We discuss related key issues in Chap. 4.

2.6 Analyze the Data

Analyzing data requires technical skills. We discuss how to enter, clean, and describe data in Chap. 5. After this, we introduce key techniques, such as hypothesis testing and analysis of variance (ANOVA), regression analysis, principal component, factor analysis, and cluster analysis in Chaps. 6, 7, 8 and 9. In each of these chapters, we discuss the key theoretical choices and issues that market researchers face when using these techniques. We also illustrate how researchers can practically deal with these theoretical choices and issues by means of Stata.

2.7 Interpret, Discuss, and Present the Findings

When executing the market research process, researchers' immediate goals are interpreting, discussing, and presenting the findings. Consequently, researchers should provide detailed answers and actionable suggestions based on data and analysis techniques. The last step is to clearly communicate the findings and recommendations to help decision making and implementation. This is further discussed in Chap. 10.

2.8 Follow-Up

Market researchers often stop when the results have been interpreted, discussed, and presented. However, following up on the research findings is important too. Implementing market research findings sometimes requires further research, because suggestions or recommendations may not be feasible or practical and

market conditions may have changed. From a market research firm's perspective, follow-up research on previously conducted research can be a good way of entering new deals for further research. Some market research never ends, for example, many firms track customer satisfaction continuously, but even such research can have follow-ups, for example, because the management may wish to know the causes of drops in customer satisfaction.

2.9 Review Questions

1. What is market research? Try to explain what market research is in your own words.
2. Why do we follow a structured process when conducting market research? Are there any shortcuts you can take? Compare, for example, Qualtrics' market research process (http://www.qualtrics.com/blog/marketing-research-process) with the process discussed above. What are the similarities and differences?
3. Describe what exploratory, descriptive, and causal research are and how they are related to one another. Provide an example of each type of research.
4. What are the four requirements for claiming causality? Do we meet these requirements in the following situations?
   - Good user design led to Google's Android becoming the market leader.
   - When Rolex charges a higher price, this increases sales.
   - More advertising causes greater sales.

2.10 Further Readings

Levitt, S. D., & Dubner, S. J. (2005). *Freakonomics. A rogue economist explores the hidden side of everything*. New York, NY: HarperCollins.

An entertaining book that discusses statistical (mis)conceptions and introduces cases of people confusing correlation and causation.

Levitt, S. D., & Dubner, S. J. (2009). *Superfreakonomics*. New York, NY: HarperCollins.

The follow-up book on Freakonomics. Also worth a read.

Nielsen Retail Measurement at http://www.nielsen.com/us/en/nielsen-solutions/nielsen-measurement/nielsen-retail-measurement.html

Pearl, J. (2009). *Causality, Models, reasoning, and inference*. New York, NY: Cambridge University Press.

This book provides a comprehensive exposition of the modern analysis of causation. Strongly recommended for readers with a sound background in statistics.

PRIZM by Claritas at http://www.claritas.com/MyBestSegments/Default.jsp?ID=20

This website allows looking up US lifestyle segments at the zip level.

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